

Board Level Products

Board to Board Interconnect Solutions



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HDAS

SMASH

HDB³/HSB³

R-VPX

R-SATA

127/HE8

ABOUT AMPHENOL SOCAPEX



Proven excellence in interconnect solutions

Since **1947**, Amphenol Socapex has prescribed, designed and manufactured reliable and innovative interconnection solutions for **harsh environments**, specializing in standard and customized electrical and fiber optic connectors, contacts, accessories and cabling solutions.

Located in the **Mont Blanc** region of France and Pune in India, Amphenol Socapex has a presence in over 100 countries around the world.

Amphenol Socapex is part of the international **Amphenol Corporation**.



800+ employees



Net Sales 2018: **72,5 M€**
68% Export - 32% France



Two facilities :
Thyez (France), **Pune** (India)

1947



- Socapex creation in Suresnes, France
- 1st radio connector

1956-57



- Manufacturing unit in Cluses (74), France
- Thomson-CSF becomes primary shareholder

Early 1960's



- 1st board level connectors: HE8
- 1st "licence Bendix" manufactured connectors
- SL Series launch

1973



- New factory 13 000 m² in Thyez (74) France with 250 people

1975



- Production of 38999 connectors

2014-2017



- New Cable Assembly workshop
- New Contact Manufacturing workshop

Today and tomorrow | New technologies



Miniaturization
High-speed signals
Rugged Ethernet
Fiber optics
Power
Advanced Materials (composite)
ROHS solutions
Miniaturization
ROHS solutions

INTERNATIONAL EXPERTISE



Our expertise has no boundaries

Integrated Production in France & India

- **24 000 m²** manufacturing capacity on 2 sites
- Design centers in **France** and **India**
- State-of-the-art manufacturing technology

France - India



Our markets



Military

Communication Systems - Radios - C4ISR /
Ground vehicles - Vetronics / Marine / Missiles



Aviation

Commercial & military / Avionics /
Engines / Landing gear / Actuators

1986

Amphenol
Socapex

- Amphenol becomes primary shareholder

1995-96



- Expanded Beam connector CTOS launch
- Headquarters transferred to Thyex

2004



- RJ Field launch, "Award Electronica"

2005



- Opening of manufacturing site in Pune, India

2010's



- LuxBeam™ and HDAS launch

Today and tomorrow | Sustainable development



Respect for nature and the environment

Optimization of natural resources
Recycling
Waste Management
Goodwill
Optimization of natural resources
Respect for nature and the environment
Waste Management
Recycling

PRODUCING FASTER, SMALLER, STRONGER CONNECTORS...



Technologies & innovation

Technological Center



Engineering Laboratory for product testing and qualification, product expertise and metrology

- Mechanical and electrical skills
- RF and fiber optics expertise

High-Speed Expertise



Strong expertise in high-speed signals

- 3D EM simulation software & EM models
- Time Domain and frequency domain (VNA 20GHz, TDR and eye diagram)

Materials Expertise



Focus on materials expertise and manufacturing techniques to produce faster, smaller and stronger products

- 3D CAD mechanical software, simulation & analysis
- Disruptive metal alloys, additive manufacturing

Eco-responsibility



Sustainable environment approach, with pro-active management of regulations (REACH / RoHS / Conflict minerals...)

- New materials development, plating, and suitable processes
- Recycling and rational resources consumption

Our workshops

Our workshops located in France & India provide consistent quality adapted to your volume requirements.

Molding : Solid expertise in thermoplastic elastomer and thermoset molding

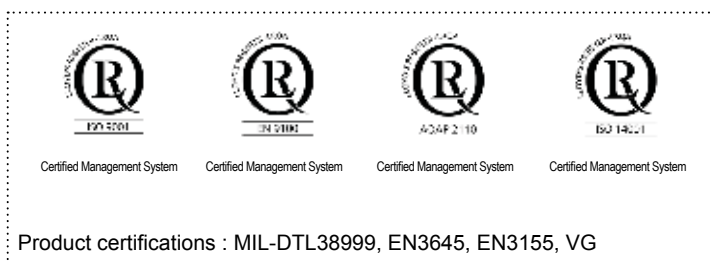
Machining : Manufacturing of cylindrical shells from 10 to 90 mm in diameter and rectangular shells

Screw Machining : Cylindrical production parts up to 10 mm in diameter

Plating : Plating with cadmium, nickel, electroless nickel, silver, black zinc nickel, gold

Assembly : Sub-assembly, harnessing, cabling, bonding and marking for small & large volumes

Our certifications



Our memberships

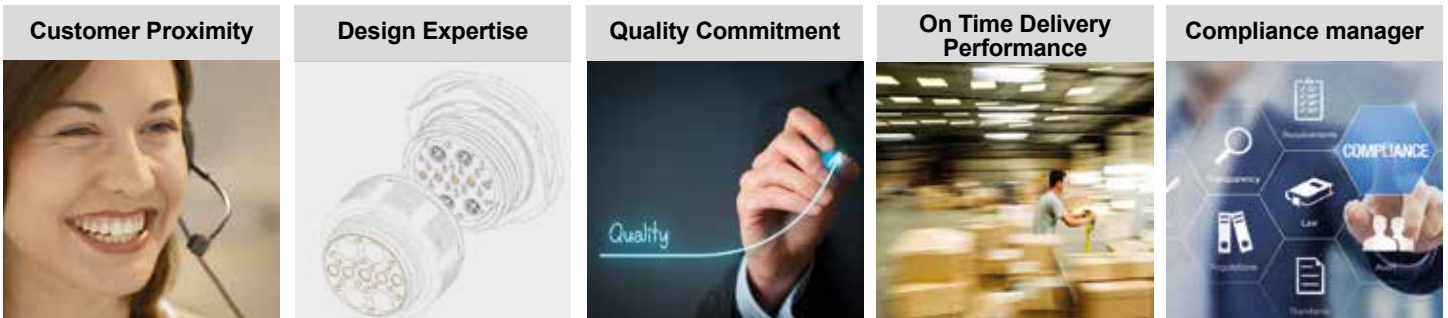


DELIVERING GREAT CUSTOMER EXPERIENCE



► We have a strong reputation for helping customers solve their toughest challenges. This approach of serving your needs is ingrained in our company – from our sales team to our product development engineers.

A partner you can trust



Buy our solutions

You can access our solutions through our global network of sales offices or through our distributors.

Field Sales Team :

-  12 in France
-  15 in Europe
-  100+ in North America and rest of the world.
-  5 Business Development Managers supporting local sales force Europe, North America and the rest of the world

-  **Technical Support & Multilingual Customer Service :**
- 15 people

Worldwide Distribution Network :

Including qualified distributors (QPL approved) for assembling : MIL-DTL-38999, PT/451/VG95328 & Fiber Optics connectors



MARKETS AND APPLICATIONS



Commercial Aerospace

Fadec/Engine control
Landing gear
Braking system
Display unit - Power unit
Actuator - Flight control system



Military Aerospace

Countermeasure
Power unit - Radar
Display unit - Flight control system
POD - Braking system
FADEC/Engine control



Ground Vehicle



C4ISR

Countermeasure
Threat detection system
Rugged computer
Digital radio
Ground radio - Communication systems



Navy

Navigation guidance
Sub-marine
Communication system



Industrial

Railway
Nuclear



Space



Missile

Missile launcher
POD
Missile



QUICK SELECTION GUIDE

Standard / Approval	HDAS	SMASH	HDB ³ /HSB ³	R-VPX	R-SATA	127/HE8
MIL-DTL-55302						M55302/140 to /155
NFC-UTE						NFC UTE 93424/ HE801-804-807
SATA					SATA 3.0	
VITA				VITA 46		
RoHS	•	Not available for SMT version	•	•	•	•
Board configuration						
Motherboard to daughterboard	•	•	•	•	•	•
Mezzanine	•	•	•		•	•
Stacker	•		•			
Board to cable	Test only	Test only	•			•
Extender / PC					•	•
Contact termination						
Press fit / compliant	•	•		•		
Thru hole soldering	•	•	•		•	•
Surface mount		•			•	
Crimping			•			•
Solder cup	Test only	Test only				•
Contact technology						
Stardclip 6-times	•	•				
Brush			•			
Stamped and formed				•		•
Micro-hyperboloid					•	
Lateral displacement compatible		Upon request				
Technical features / accessories						
Guiding devices	•	•	•	•	•	•
Polarization keys / keying	•	•	•	•		•
Locking system	•	•	•			•
Rackable solution		Upon request				
Arrangements						
Signal	•	•	•	•	•	•
Differential pair			•	•		
Power				•	•	•
Coaxial		Upon request		•		•
Optical		Upon request		•		
Pitch / contact pattern						
Staggered grid	1,905 [.075] 0,9525 [.0375] offset		1,72 x 1,52 [.070x.060]		•	2,54 [.100] 1,27 [.050] offset
Square grid				1,8 x 1,8 [.039x.039]		
Chevron grid		1,905 [.075] 0,635 [.025] offset				
Contacts number						
1 row					7	
2 rows	Under development				22	17 to 96
3 rows	50, 77, 119, 152					80, 144
4 rows	102, 202	154	40, 60, 80, 120, 160			
5 rows	253					
6 rows		132, 150, 264, 300, 396, 450				
Other				8 or 16 columns 3U or 6U		
Electrical						
Current rating per contacts (A)	4,5	3	2	1,5		3
Dielectric Withstanding Voltage (Vrms)	750	1000	750			1000
Max data rate (Gbps)	4		6,25	10	6,25	Not applicable
Mechanical						
Electrical security / Backoff	1,2mm [.047 in]	1,2mm [.047 in]				1 mm [.039in]
Mating / Unmating force (g)	95	95	45			180
Durability	500	500	100 000	500	20 000	500
Environmental						
Salt spray (hours)	96	96	48	48		96
Temperature range (°C)	-65 / +150	-65 / +150	-65 / +125	-55 / +105		-55 / +125
Material / plating						
Active area (gold thickness)	1µm [.039µin]	1.3µm [.051µin]	1.3µm or 0,5µm [.050µin or .020µin]	1.3µm or 0,75µm [.050µin or .030µin]		1µm [.039µin]
Termination area	Tin lead, bright pure tin, mat tin, gold, Silver-tin	Tin lead, lead free or gold	Tin-lead, pure tin or gold	Tin-lead or lead free	Gold or tin lead dip	Tin-lead or lead free
Contact	Brass alloy	Brass alloy	Beryllium copper	Copper alloy		CuSn9P or CuZn
Housing	LCP thermoplastic	LCP thermoplastic	LCP thermoplastic	LCP thermoplastic		DAP thermoset

PRODUCT RANGE SUM UP - NEW GENERATION



HDAS

Cost effective connector

- Monolithic high density PCB interconnect
- High pin counts up to 253 contacts per connector
- Designed for severe mechanical environments
- High temperature (LCP material) & vibration levels
- Mezzanine or right angle board to board connection



SMASH

Advanced LRM connector

- Ruggedization
 - Aluminium shell for electrical enhancements
 - Designed for severe mechanical environments
 - Excellent mechanical & electrical reliability
- High pin counts up to 450 contacts per connector
- Flexible termination on the plug, short layout on the daughterboard
- Mezzanine or right angle board to board connection



HDB³/HSB³

High density brush connector

- Brush contact technology: durability and performance
- High density contact pattern
- Low mated height
- Low mating force



R-VPX

COTS High-speed connector

- Ruggedized high-speed board-to-board interconnect system
- Data rates exceeding 10 Gbps
- Meeting and exceeding VITA 46 standard
- Modularity and flexibility
- To be utilized in open architecture embedded computing systems
- 3U and 6U VPX slot profiles

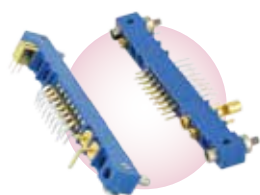


R-SATA

Speeds to 6,25 Gb/s*

- Designed for harsh environment and rugged storage applications
- Allows to ruggedize standard commercial off the shelf drives
- Primary internal storage interconnect for desktop and mobile PC's
- Connecting the system to peripherals

QUICK REFERENCE - LEGACY PRODUCTS



127/HE8 - The well proven technology

Widest board to board or board to cable range

- Wide range of fittings, guiding and contact terminations
- Low-profile
- Cost competitive and reliable technology
- Fully compatible with all the standard connectors on the market (HE801, HE804 & HE807)
- Hybrid patterns: 3 to 10 special cavities

PRODUCT RANGE SUM UP - CUSTOM DESIGN OR UNDER DEVELOPMENT



STACKABLE HDAS

- Low profile plug
- Optimized height for mezzanine connection
- Straight PC tail or press fit / compliant version
- All HDAS arrangements available upon request



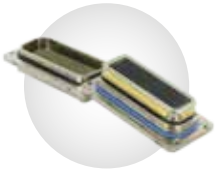
HDAS 10°

- Custom bended contact for 10° board to board application
- FADEC and engine needs
- Simplified box integration



HDAS HIGH VOLTAGE - DWV 1500V

- Rear compound and interfacial seal
- Higher line voltage
- Prevent the leakage and voltage up to 1500V instead of 750V



SMASH RACKABLE & SEALED

- Rack and panel high density solution
- I/O options with sealing and EMI protection
- 3 levels of sealing (2 seals and rear compound)
- Ground strip
- Custom shell to perfectly adapt onto customer system



SMASH CUSTOM ARRANGEMENTS

- 4 modules with 2.54mm pitch
- Custom shell to fit to system
- Planar filter & lateral displacement compatibility



SMALL BOARD TO CABLE

- HDAS range extension
- 2 or 3 rows
- Optimized housing to reduce space
- Solder cup contacts and lockable fittings



CUSTOM DESIGN

- Stacking connector
- Non catalog insert
- Non catalog contacts
- Hybrid connector with power or coax

HDAS

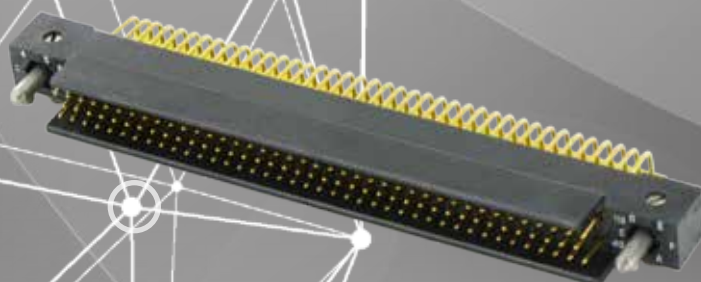
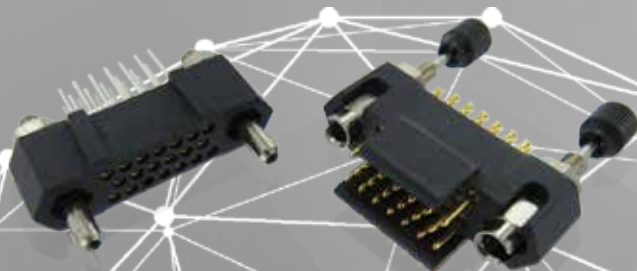
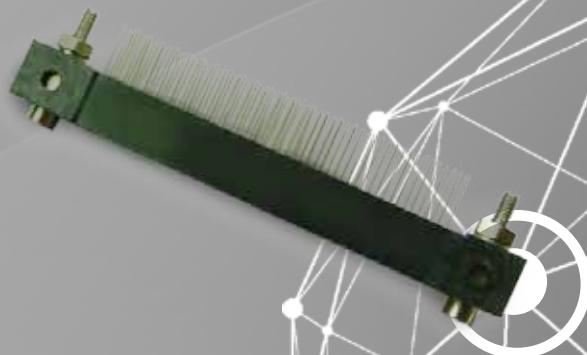
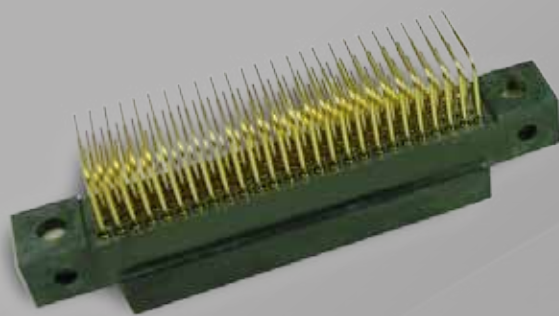
SMASH

HDB/HSB

R-VPX

R-SATA

127/HE8



HDAS: Cost effective connector

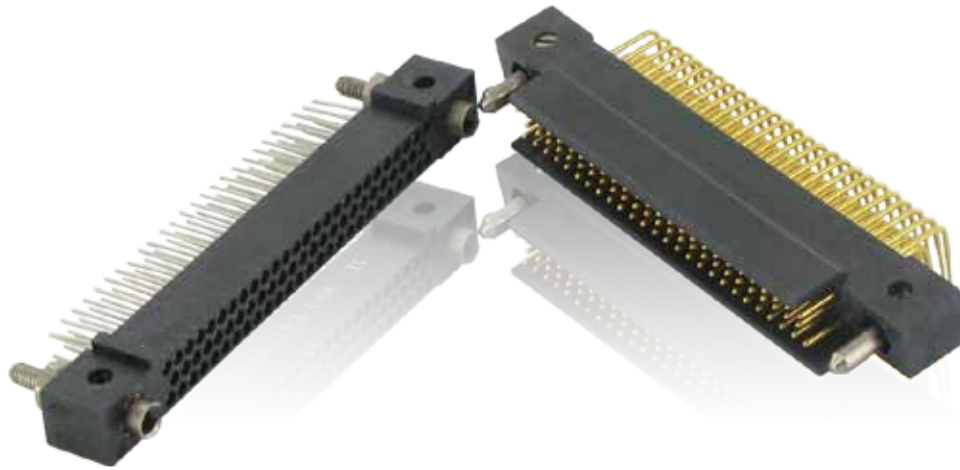


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HDAS SERIES SERVES VARIOUS MARKETS, INCLUDING:



Commercial Aerospace



Military Aerospace



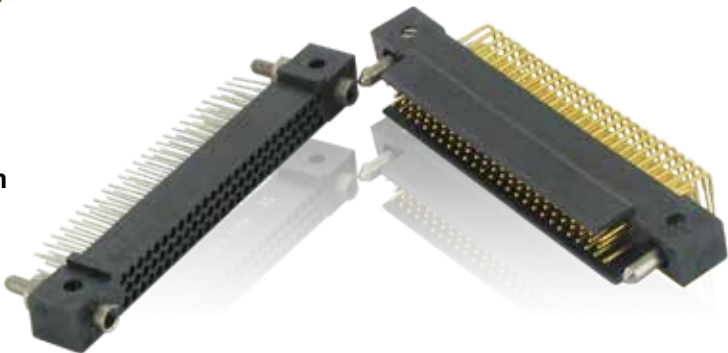
C4ISR

GENERAL CHARACTERISTICS - HDAS SERIES

Cost-effective connector

High density board to board range

- Cost effective
- High pin counts up to 253 contacts per connector
- Designed for severe mechanical environments
- High temperature (LCP material) & vibration levels
- Mezzanine or right angle board to board connection

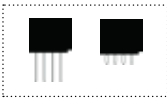


Main features

- Robust technology
- Lateral rails to protect the male contacts from external damage
- Mechanical protection on the female contact by design
- Press fit / compliant assembly allowing cost reduction on the backplane
- 36 keying possibilities per connector

Contact terminations

Female

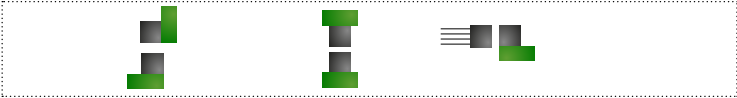


Male

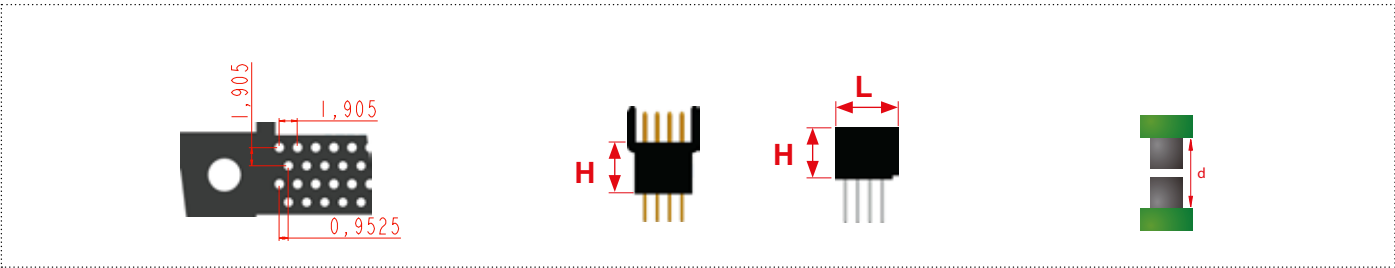


Recommended configurations

Mother board to daughterboard / Mezzanine / Board to cables



Overall Dimensions



	3 rows	4 rows	5 rows
H	8 _{MAX} [.315]	8 _{MAX} [.315]	8 _{MAX} [.315]
L	8,21 _{MAX} [.323]	10,11 _{MAX} [.398]	12,02 _{MAX} [.473]
d	16 _{MAX} [.630]	16 _{MAX} [.630]	16 _{MAX} [.630]

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

GENERAL CHARACTERISTICS - HDAS SERIES

STANDARD / APPROVALS

- Exceed some MIL DTL 55302 requirements

TYPE OF CONTACTS

- High current rate: 4,5A per signal contact / DWV: 750 Vrms
- Stradclip socket technology
- 1,2mm [.0472] electrical security

CONNECTOR TYPES

- E = Female receptacle
- F = Male plug

CONTACT DENSITY

- High density: 1.905[.075] staggered grid (0.9525[.0375] offset), 1.905[.075] between rows

NUMBER OF ROWS / ARRANGEMENTS

- 3 rows: 50, 77, 119 & 152 contacts
- 4 rows: 102 & 202 contacts
- 5 rows: 253 contacts
- Upon request:
 - 4 rows: 236 contacts
 - 5 rows: 128 & 198 contacts

MALE CONTACT

Mating end diameter

- Ø 0.68 [.027]

Termination section

- Ø 0.45 [.018]



FEMALE CONTACT

- 6 contact tines
- Excellent mechanical and electrical reliability
- Better resistance to high vibrations
- Improved electrical conductivity
- 100% compatible with other connectors



MATERIALS

Female contact

- Hood: machined brass alloy
- Clip: CuBe, stamped and formed

Male contact

- Machined brass alloy

Guiding devices

- Brass alloy or stainless steel 303

Plastic insert

- Thermoplastic LCP, 30% glass-fiber filled

PLATING

Female contact

- Hood: tin lead or lead free
- Clip: gold over Nickel

Male contact

- Gold over Nickel

Guiding devices

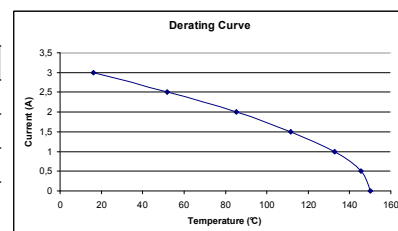
- Electroless nickel or passivated

Technical specifications

Mechanical characteristics	HDAS	MIL-DTL-55302 sections
Backoff ¹ (mm)	1.2 [.0472] _{MAX}	N/A
Mating force per contact (N)	0.6 < F < 0.8	§ 4.5.3
Unmating force per contact (N)	0.3 < F < 0.5	§ 4.5.3
Durability cycles	500	§ 4.5.9
Sinusoidal vibrations (200 to 2000 Hz) micro discontinuity 2ns	15 g	§ 4.5.10
Random vibrations (600 to 700Hz) micro discontinuity 2ns	1.2 g ² / Hz	§ 4.5.10
Shocks 6ms ½ sinus 2ns	100 g	§ 4.5.10
Environmental characteristics		
Thermal shocks (°C)	-65 / +150	§ 4.5.13
Salt Spray (hours)	96	§ 4.5.11
Humidity		
Days	10	§ 4.5.15
Temperature (°C)	25/65	
Humidity rate (%)	90-95	
Electrical characteristics		
Current rating per contacts (A)	4.5 (see derating curve)	§ 4.5.5
Insulation resistance (at 500Vdc) (GΩ)	5 _{MIN}	§ 4.5.8
Contact resistance (mΩ)	10 _{MAX}	§ 4.5.12
Dielectric Withstanding Voltage (Vrms)	750 _{MIN}	§ 4.5.7.1

¹: When both connectors are fully mated, the backoff is the maximum distance the connectors can be unmated while functioning properly

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

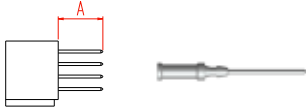


CONTACTS

Female contacts for receptacle

Straight PC tail

- Thru hole soldering
- Mother board or mezzanine connection



YD/YDS

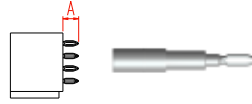
Solder cup

- Soldering on wire
- AWG gauge 22 to 26 recommended
- For test application only

Z

Press fit / compliant

- For solderless assembly
- Mother board or mezzanine connection
- Under development



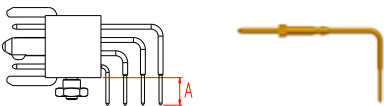
YP

Contact type	A	Termination section	PCB thickness
YDS	$4,6 \pm 0,25 [181 \pm .010]$	$\varnothing 0,45 [018]$	$3,5_{MAX} [138]$
YD	$6,8 \pm 0,25 [270 \pm .010]$	$\varnothing 0,45 [018]$	$5,5_{MAX} [217]$
YP	$3,25 \pm 0,2 [118 \pm .008]$	$\varnothing 0,82 [032]$	$2,5_{MIN} [098]$
Z	$5 \pm 0,2 [197 \pm .008]$	$\varnothing 0,93 [037]$	/

Male contacts for plug

Right angle PC tail

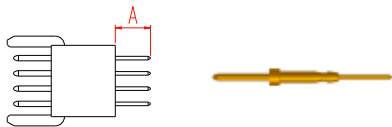
- Thru hole soldering
- Daughter board



YC/YCS

Straight PC tail

- Thru hole soldering
- Daughter board or mezzanine connection



YD/YDS

Press fit / compliant

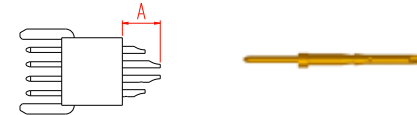
- For solderless assembly
- Mezzanine connector



YP

Solder cup

- Soldering on wire
- AWG gauge 26 to 22
- For test application only



Z

Contact type	A	Mating end diameter	Termination section	PCB thickness
YDS	$4,5 \pm 0,2 [177 \pm .008]$	$\varnothing 0,68 [027]$	$\varnothing 0,45 [018]$	$3,3_{MAX} [130]$
YD	$6,7 \pm 0,2 [264 \pm .008]$	$\varnothing 0,68 [027]$	$\varnothing 0,45 [018]$	$5,5_{MAX} [217]$
YCS	$2,85 \pm 0,2 [112 \pm .008]$	$\varnothing 0,68 [027]$	$\varnothing 0,45 [018]$	$1,6_{MAX} [063]$
YC	$4 \pm 0,2 [157 \pm .008]$	$\varnothing 0,68 [027]$	$\varnothing 0,45 [018]$	$2,8_{MAX} [110]$
Z	$5 \pm 0,2 [197 \pm .008]$	$\varnothing 0,68 [027]$	$\varnothing 0,93_{MAX} [037]$	/

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

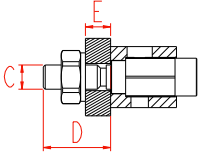
FITTING : KEYING / GUIDING

Female fittings

Female guides

0

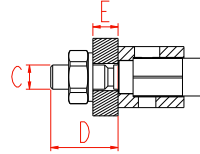
- Standard female fitting codable
- Chassis or mother board
- Fixed receptacle
- For YD contacts
- To order the fitting alone HDAS E000



Female guides

4

- Intermediate female fitting codable
- Chassis or mother board
- Fixed receptacle
- For YDS/YP contacts
- To order the fitting alone HDAS E004



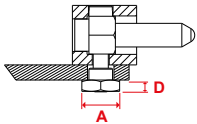
	0 style for YD female contacts	4 style for YDS / YP female contacts
C	M 2.5 [.098]	
D	7,15 ± 0.2 [.281 ± .008]	5,5 ± 0.2 [.217 ± .008]
E	5,5 MAX [.216]	3,5 MAX [.147]

Male fittings

Guiding only

2

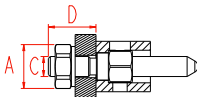
- Male fitting uncodable
- Daughter board
- For YCS/YC contacts
- Free plug
- To order the fitting alone, reference is HDASFYC-002. Only for 3rows and 4rows connectors. For 5 rows connectors (253 contacts) please consult us



Guiding only

2

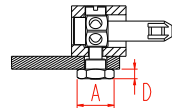
- Motherboard or mezzanine connection
- For YDS/YD/YP contacts
- Male fitting uncodable
- Free plug
- To order the fitting alone HDAS F YD-002- (same fitting for YDS or YP contacts)



Keying and guiding

0

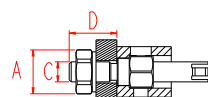
- Standard male fitting codable
- Daughter board
- For YCS/YC contacts
- Free plug
- To order the fitting alone , reference is HDASFYC-000. Only for 3rows and 4rows connectors. For 5 rows connectors (253 contacts) please consult us



Keying and guiding

0

- Standard male fitting codable
- Mother board or mezzanine connection
- For YDS/YD/YP contacts
- Free plug
- To order the fitting alone HDAS F YD-000- (same fitting for YDS or YP contacts)



	2 style Guiding for YC / YCS male contacts	2 style Guiding for YD / YDS / YP male contacts	0 style Keying for YC / YCS male contacts	0 style Keying for YD / YDS / YP male contacts
A	Hex 4 [.157]	Hex 5 [.197]	Hex 4 [.157]	Hex 5 [.197]
C	/	M 2.5 [.098]	/	M 2.5 [.098]
D	1.2 MAX [.472]	6 MAX [.236]	1.2 MAX [.472]	6 MAX [.236]

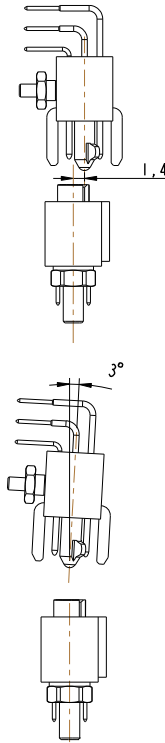
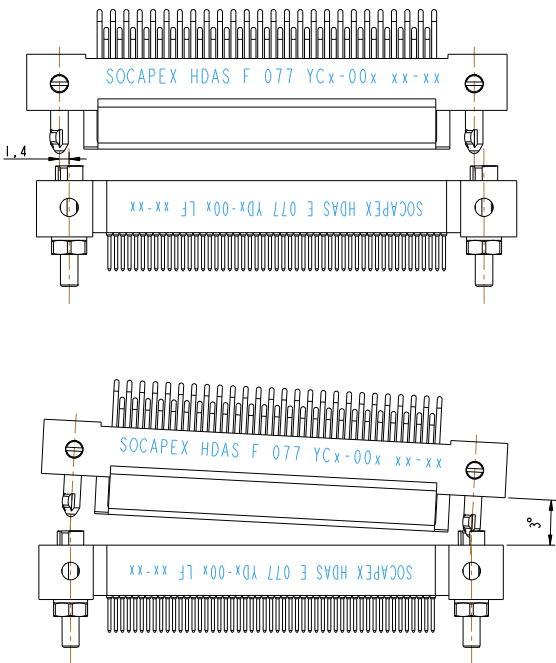
All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

KEYING & GUIDING

Realignment capability

In the longitudinal axis

In the lateral axis



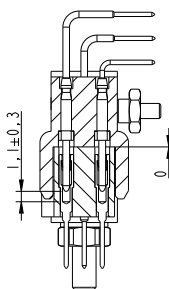
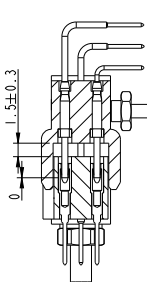
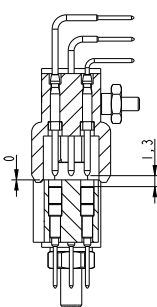
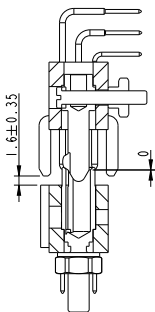
Mating sequence

Keying / guiding

Rails

Electrical contact

Mated connector



1,6 ± 0,35[.063 ± .014]

1,3[.051]

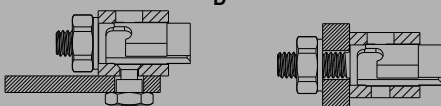
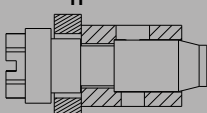
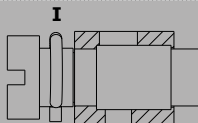
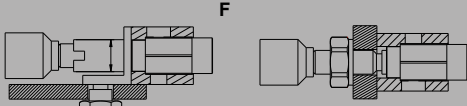
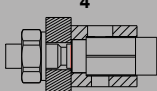
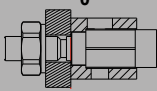
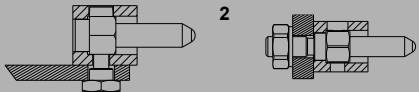
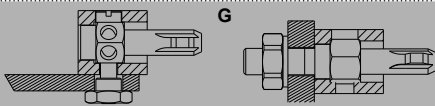
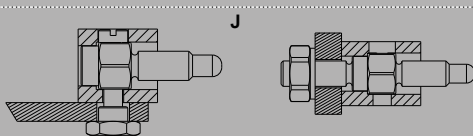
0,5 ± 0,3[.020 ± .012]

1,1 ± 0,3[.043 ± .012]

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

KEYING, GUIDING & LOCKING

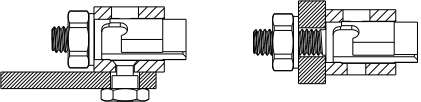
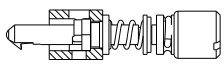
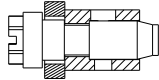
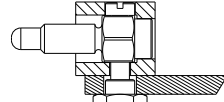
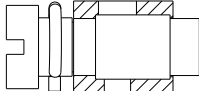
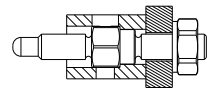
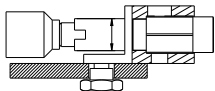
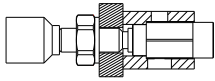
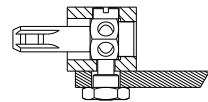
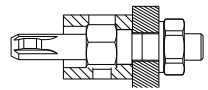
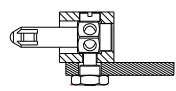
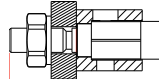
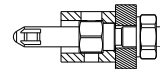
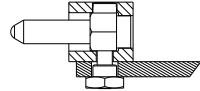
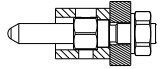
Compatibility table

Compatible male fitting			Female fitting					Compatible male fitting
E	X	X			X	X	X	E
J	X	X				X		J
J							X	J
G	X	X			X	X	X	G
0 2	X	X						
0 2	X	X						
Female contacts	YP 	YDS/YD 			YCS/YC 	YDS/YD/YP 	Y/Z 	Male contacts
								0 4
					X	X	X	0 4
F	X	X			X	X	X	F
D	X	X				X	X	D
I H	X	X			X	X	X	I H
Compatible female fitting			Male fitting					Compatible female fitting

* HDAS FYD-00* for a plug with straight PC tail contacts
 HDAS FYC-00* for a plug with right angle PC tail contacts

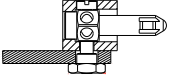
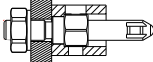
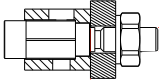
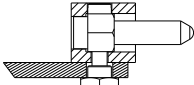
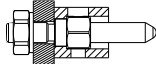
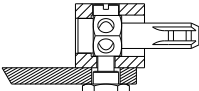
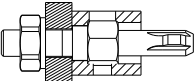
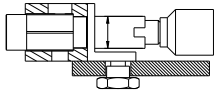
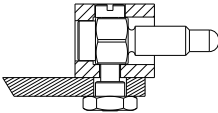
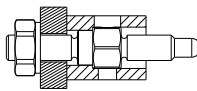
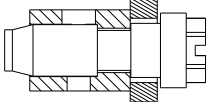
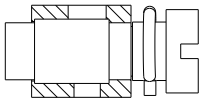
FITTING : KEYING / GUIDING / LOCKING

Female fittings

	Female fitting	For connector	Locking type	Locking side	Keying	Standard mounting	Fitting type	Mates with
D			¼ turn	Male fitting side (E)	✓	PCB	Straight or Right angled according to the contact terminations	E 
H		Male plug and female receptacle	By screw	Female fitting side (H)	X	PCB or flexible circuit	Straight	J 
I				Female fitting side (I)		Wires		
F	 	Male plug and female receptacle	By screw	Female fitting side (F)	✓	PCB	Straight or Right angled according to the contact terminations	G  
4								
		Female receptacle only	X	X	✓	Mother board or mezzanine or flexible circuit	Straight	
0								 

FITTING : KEYING / GUIDING / LOCKING

Male fittings

Male fitting	For connector	Locking type	Locking side	Keying	Standard mounting	Fitting type	Mates with
 	Male plug only	X	X	✓	Daughter board or mezzanine or flexible circuit	Straight or Right angled according to the contact terminations	0 4 
 				X			
 	Male plug and female receptacle	By screw	Female fitting side (F)	✓	PCB	Straight or Right angled according to the contact terminations	F 
				1/4 turn			
 	Male plug and female receptacle	By screw	Female fitting side (H or I)	X	Chassis, motherboard, jumper or wire	Straight or Right angled according to the contact terminations	I H  

HDAS

SMASH

HDB/HSB

R-VPX

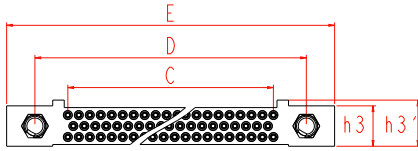
R-SATA

127/HE8

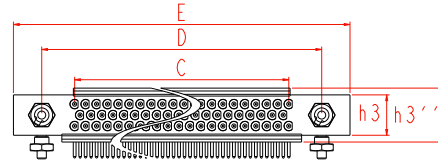
ARRANGEMENTS & LAYOUTS 3 ROWS

Arrangements – 3 rows

Receptacle

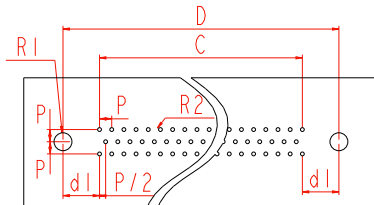
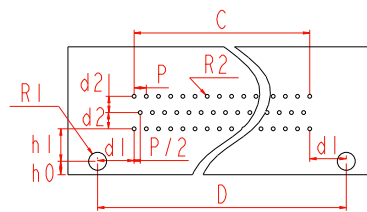


Plug



	050	077	119	152
C	30,48 _{MAX} [1.200]	47,625 _{MAX} [1.875]	74,295 _{MAX} [2.925]	95,25 _{MAX} [3.750]
D	41,91 _{MAX} [1.650]	59,055 _{MAX} [2.325]	85,725 _{MAX} [3.375]	106,68 _{MAX} [4.200]
E	51,3 _{MAX} [2.017]	68,38 _{MAX} [2.692]	95,05 _{MAX} [3.742]	116,5 _{MAX} [4.586]
h₃			7,01 _{MAX} [.276]	
h₃'			8,21 _{MAX} [.323]	
h₃''			9,36 _{MAX} [.369]	

Layouts – 3 rows

Straight plug & receptacle
YD/YDS/YP contactsRight angle plug
YC/YCS contacts

The boards are shown from the connector side. All contact outputs are equidistant.

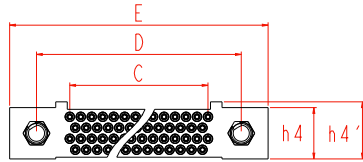
	050	077	119	152
C	30,48[1.200]	47,625[1.875]	74,295[2.925]	95,25[3.750]
D	41,91[1.650]	59,055[2.325]	85,725[3.375]	106,68[4.200]
h₀			2,1 _{MAX} [.083]	
h₁			5,08[.200]	
d₂			2,54[.100]	
d₂/2			1,27[.050]	
p			1,905[.075]	
p/2			0,9525[.0375]	
d₁			5,775[.227]	
R₁			Ø2,8 ^{+0,1} ₋₀ [110 0 ^{+0,004} ₋₀]	
R₂			Ø0,6 _{MIN} [.024] with metallization Ø0,6 ± 0,05 [0.024 ± .002] for YP contacts	

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

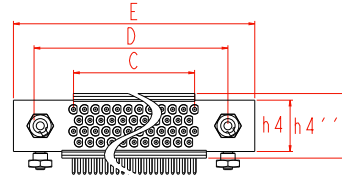
ARRANGEMENTS & LAYOUTS 4 ROWS

Arrangements – 4 rows

Receptacle



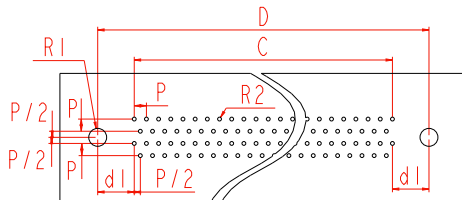
Plug



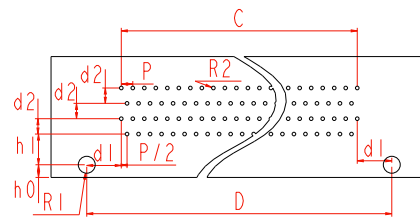
	102	202
C	47,625 _{MAX} [1.875]	95,25 _{MAX} [3.750]
D	59,175 _{MAX} [2.330]	106,68 _{MAX} [4.200]
E	68,50 _{MAX} [2.697]	116,5 _{MAX} [4.586]
h ₄		8,91 _{MAX} [.351]
h ₄ '		10,11 _{MAX} [.398]
h ₄ ''		11,26 _{MAX} [.443]

Layouts – 4 rows

Straight plug & receptacle
YD/YDS/YP contacts



Right angle plug
YC/YCS contacts



The boards are shown from the connector side. All contact outputs are equidistant.

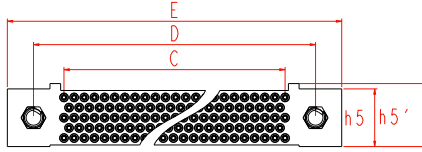
	102	202
C	47,625[1.875]	95,25[3.750]
D	59,175[2.330]	106,68[4.200]
h ₀		2,1 _{MAX} [.083]
h ₁		5,08[.200]
d ₂		2,54[.100]
d ₂ /2		1,27[.050]
p		1,905[.075]
p/2		0,9525[.0375]
d ₁	5,775[.227]	5,715[.225]
R ₁		Ø2,8 ^{+0,1} ₋₀ [110 0 ^{+0,04} _{-.000}]
R ₂		Ø0,6 _{MIN} [.024] with metallization Ø0,6 ± 0,05 [0,024 ± .002] for YP contacts

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

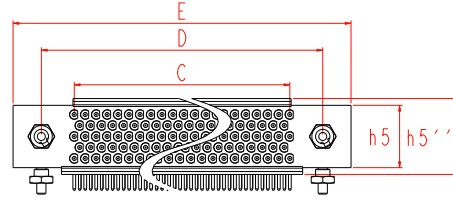
ARRANGEMENTS & LAYOUTS 5 ROWS

Arrangements – 5 rows

Receptacle



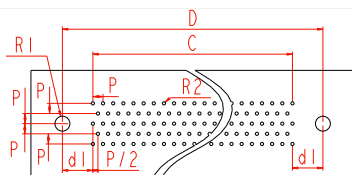
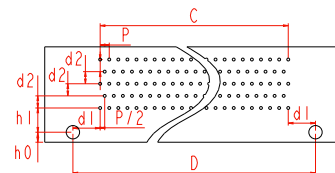
Plug



	253	128*	198*
C	95,25[3.750]	47,25 [1,842]	74,295 [2,897]
D	106,68[4.200]	59,055 [2,303]	85,73 [3,343]
E	116,5 _{MAX} [4.586]	68,3 _{MAX} [2.663]	95,05 [3,706]
h ₅	10,82 _{MAX} [.426]	10,82 _{MAX} [0,421]	10,82 [0,421]
h ₅ '	12,02 _{MAX} [.473]	11,82 _{MAX} [0,46]	11,82 [0,46]
h ₅ ''	13,17 _{MAX} [.519]	13,2 _{MAX} [0,514]	13,17 [0,513]

*Consult us, under development

Layouts – 5 rows

Straight plug & receptacle
YD/YDS/YP contactsRight angle plug
YC/YCS contacts

The boards are shown from the connector side. All contact outputs are equidistant.

	253	128*	198*
C	95,25[3.750]	47,25 [1,842]	74,295 [2,897]
D	106,68[4.200]	59,055 [2,303]	85,73 [3,343]
h ₀		2,1 _{MAX} [.083]	
h ₁		5,08[.200]	
d ₂		2,54[.100]	
p		1,905[.075]	
p/2		0,9525[.0375]	
d ₁		5,715[.225]	
R ₁		Ø2,8 ₋₀ ^{+0,1} [110 0 _{-0,000} ^{+0,004}]	
R ₂		Ø0,6 _{MIN} [.024] with metallization Ø0,6 ± 0,05 [.024 ± .002] for YP contacts	

*Consult us, under development

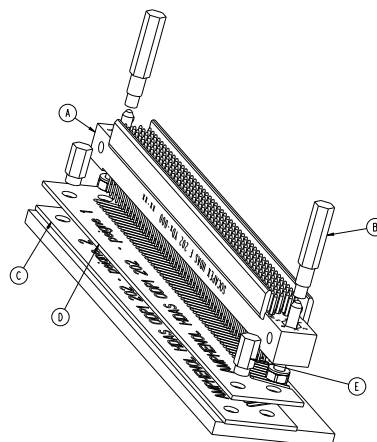
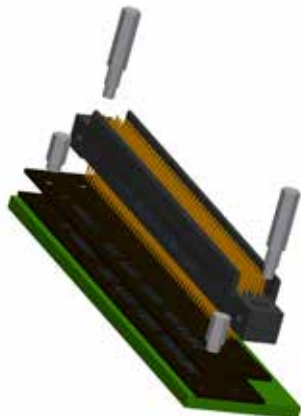
All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

TOOLING

To order the tool, please replace *** by the number of contacts

Mounting of a straight plug (YD/YDS) on a board

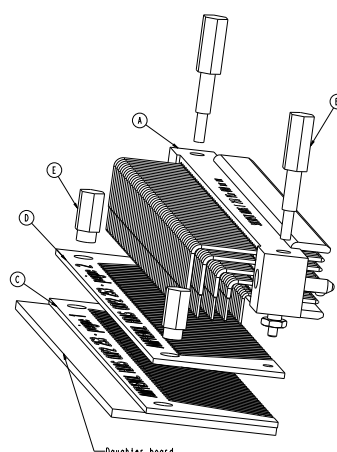
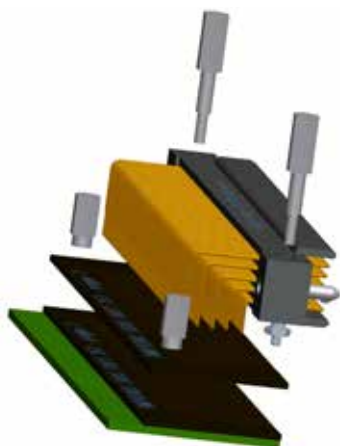
HDAS ODP1 ***



- Assemble alignment spacers (C and D) with tooth chamfers facing up, then insert positioning pins (E) into holes on spacers
- Align the connector (A) on the spacers using positioning guide (B)
- Exert slight pressure on the connector so the contact tails pass through the spacer cavities and into the PCB holes
- Remove positioning pins (B & E) and alignment spacers (C & D)
- Exert pressure on the connector until it butts against the board and fasten fixing accessories

Mounting of a right angle plug (YC/YCS) on a daughterboard

HDAS ODP2 ***



- Assemble alignment spacers (C and D) with tooth chamfers facing up, then insert positioning pins (E) into holes on spacers
- Align the connector (A) on the spacers using positioning guide (B)
- Exert slight pressure on the connector so the contact tails pass through the spacer cavities and into the PCB holes
- Remove positioning pins (B & E) and alignment spacers (C & D)
- Exert pressure on the connector until it butts against the board and fasten fixing accessories

WEIGHT

HDAS

SMASH

HDB³/HSB³

R-VPX

R-SATA

127/HE8

Connector type	Number of contacts	Commercial designation	Weight (in gram) ±15%
Receptacle	050	HDASE050YD-000	8
		HDASE050YDS-000	8
		HDASE050YP-000	8
	070	HDASE077YD-000	11
		HDASE077YDS-000	10
		HDASE077YP-000	11
	102	HDASE102YD-000	16
		HDASE102YDS-000	15
		HDASE102YP-000	16
	119	HDASE119YD-000	15
		HDASE119YDS-000	14
		HDASE119YP-000	15
	152	HDASE152YD-000	18
		HDASE152YDS-000	17
		HDASE152YP-000	18
	202	HDASE202YDS-000	22
		HDASE202YD-000	23
		HDASE202YP-000	23
	253	HDASE253YD-000	27
		HDASE253YDS-000	26
		HDASE253YP-000	27
Plug	050	HDASF050YD-000	9
		HDASF050YDS-000	9
		HDASF050YC-000	11
		HDASF050YCS-000	10
	077	HDASF077YD-000	12
		HDASF077YDS-000	12
		HDASF077YC-000	14
		HDASF077YCS-000	13
	102	HDASF102YD-000	13
		HDASF102YDS-000	13
		HDASF102YC-000	17
		HDASF102YCS-000	16
	119	HDASF119YD-000	17
		HDASF119YDS-000	17
		HDASF119YC-000	20
		HDASF119YCS-000	19
	152	HDASF152YD-000	22
		HDASF152YDS-000	22
		HDASF152YC-000	25
		HDASF152YCS-000	24
	202	HDASF202YD-000	28
		HDASF202YDS-000	28
		HDASF202YC-000	34
		HDASF202YCS-000	32
	253	HDASF253YD-000	33
		HDASF253YDS-000	33
		HDASF253YC-000	42
		HDASF253YCS-000	40

HOW TO ORDER - HDAS

1.	2.	3.	4.	5.	6.	7.
Series	Connector type	Number of contacts	Contact termination	Deviation	Fitting / locking / Keying	Plating
HDAS	E	102	YD	-00	0	LF

1. Series

HDAS	HDAS
------	------

2. Connector type

E	Receptacle (Female contacts)
F	Plug (Male contacts)

3. Number of contacts

3 Rows	050 077 119 152
4 Rows	102 202 236*
5 Rows	128* 198* 253

* Consult us, under development

4. Contact termination

YCS	Right angle PC tail short (plug only)
YC	Right angle PC tail standard (plug only)
YDS	Straight PC tail short
YD	Straight PC tail standard
Y*	PC tail for soldering on flexible circuit
YP*	Press fit / compliant
Z	Solder cup, for test application only

5. Deviation

-00	Standard, by default
-50	Marking withstanding to VIGON
-01	Dip tinning (SnPb or SnAg) (plug only)
-02	PC tail organizer (YC* plug only)
-10	Stainless steel fitting
-60	-10 & -50 deviation combined
-20	Stainless steel fitting & rear potting

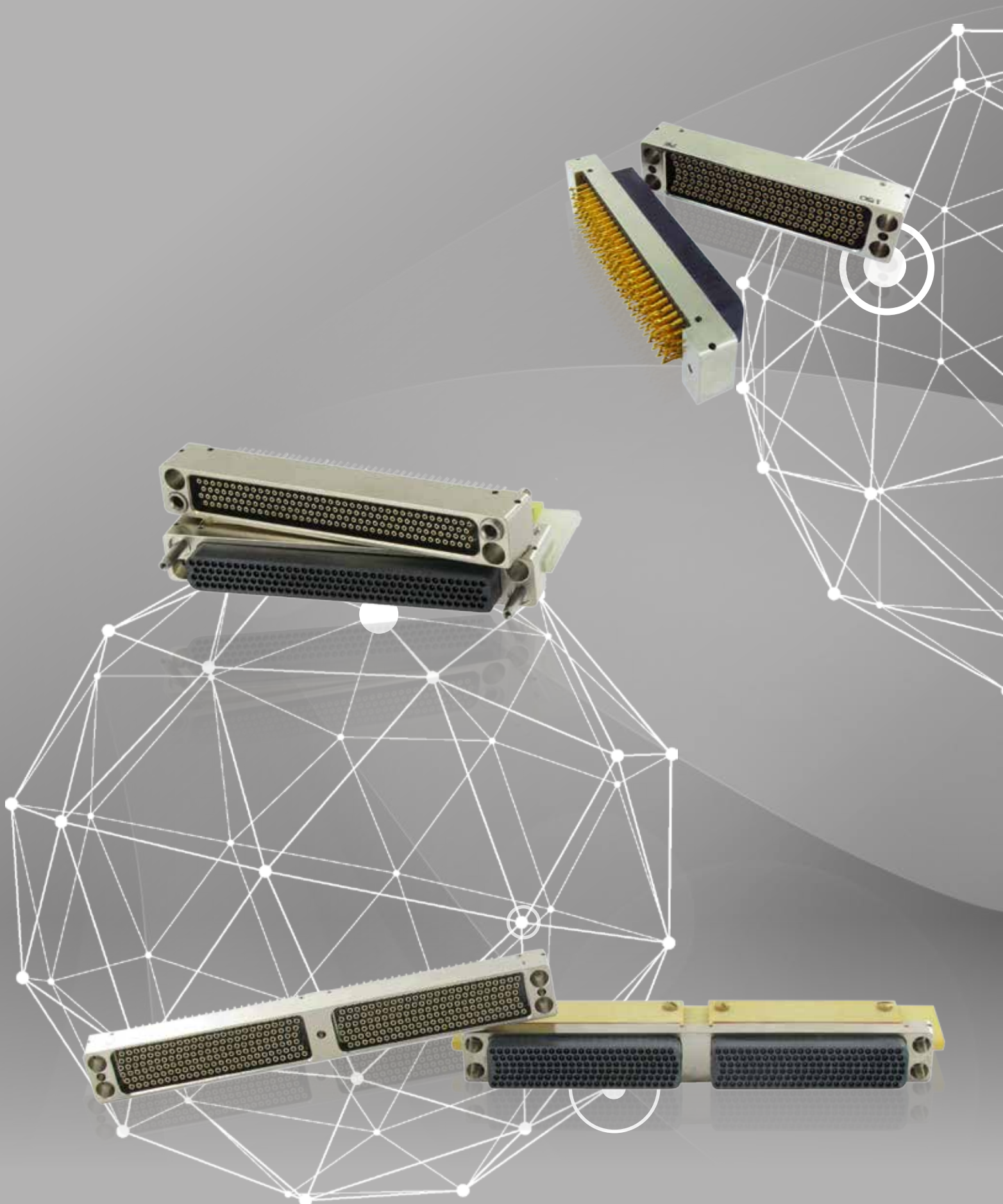
6. Fitting / Locking / Keying ¹

Female fitting receptacle	0	Standard
	4	Intermediate (YDS receptacle only)
	D	¼ turn locking, locking on male fitting side Straight or right angle fitting according to contact termination, for PCB
	H	Locking by screw, locking on female fitting side Straight fitting for PCB or flexible circuit
	I	Locking by screw, locking on female fitting side
Male fitting plug	F	Locking by screw, locking on female fitting side Straight or right angle fitting according to contact termination, for PCB
	0	Standard
	2	No keying on male guide (plug only)
	E	¼ turn locking, locking on male fitting side Straight fitting for cable or flexible circuit
	G	Locking by screw, locking on female fitting side Straight or right angle fitting according to contact termination, for PCB
	J	Locking by screw, locking on female fitting side Straight or right angle fitting according to contact termination, for chassis, motherboard, jumper or cable

7. Plating

Blank	Tin lead on receptacle Gold on plug -000 SnPb dip tinning on plug ²
LF	Bright pure Sn on receptacle (RoHS) SnAg dip tinning on plug ²
LFM	Matte pure Sn on receptacle (RoHS)

² Upon request¹ Connectors are always delivered with non assembled fittings.



SMASH: Advanced LRM connector



Table of contents

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Arrangement & layout	34
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132 contacts	37
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450 contacts	57
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SMASH SERIES SERVES VARIOUS MARKETS, INCLUDING:



Commercial Aerospace



Military Aerospace



C4ISR

GENERAL CHARACTERISTICS - SMASH

Advanced LRM connector



High density modular connector for the most demanding applications

- Aluminium shell for electrical enhancements
- Designed for severe mechanical environments
- Excellent mechanical & electrical reliability
- High pin counts up to 450 contacts per connector
- Flexible circuit termination on the plug for short layout on the daughterboard
- Mezzanine or right angle board to board connection

Main features

CONCEPT

- 1 metallic shell: equipped with electrical insert
- 2 guides per connector
- 2 keying devices per connector
- Advanced mechanical robustness
- SEM E form factor
- Pressfit solderless contact under development
- Flexible circuit termination: compatible with daughter boards of various thicknesses
- 32 keying possibilities

Contact terminations

Female

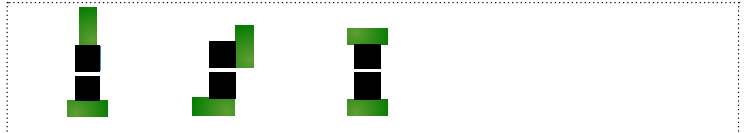


Male

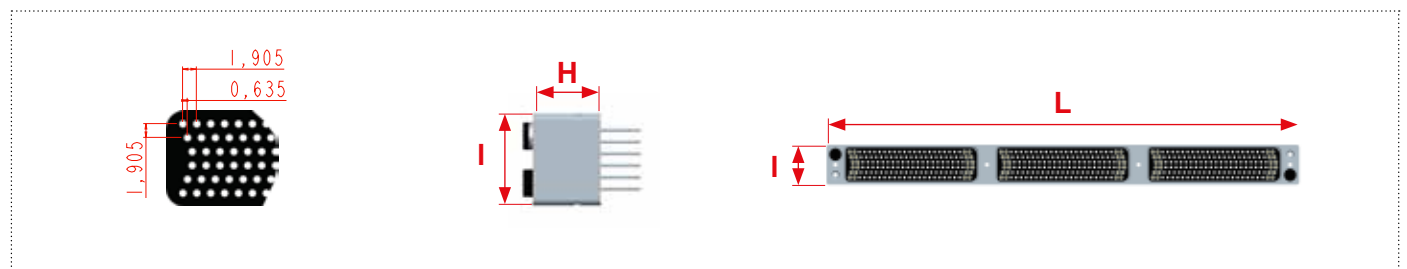


Recommended configurations

Mother board to daughterboard / Mezzanine



Overall dimensions*



	Plug	Receptacle
H	7,4[.291]	10,9[.430]
L	58,5 to 180,2 _{MAX} [2.303 to 7.094]	58,5 to 180,2 _{MAX} [2.303 to 7.094]
I	14,8 _{MAX} [.583]	14,8 _{MAX} [.583]

* For SMASH 154 contacts versions please refer to pages 51 or 52

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

GENERAL CHARACTERISTICS - SMASH

STANDARD / APPROVALS

- Exceed some MIL DTL 55302 requirements

TYPE OF CONTACTS

- 3A per signal contact / DWV: 1000Vrms
- Straclip socket technology
- 1,2mm [.0472] electrical security

CONNECTOR TYPES

- E = Female receptacle
- F = Male plug

CONTACT DENSITY

- Ultra high density: chevron grid pattern
- 1.905[.075] spacing along the row with 1.905 [.075] between rows, offset 0.635 [.025]

NUMBER OF ROWS

- 4 rows: 154 contact insert
- 6 rows: 132 or 150 contact inserts

ARRANGEMENTS

- 1 bay: 154, 132 or 150 contacts
- 2 bays: 264 or 300 contacts
- 3 bays: 396 or 450 contacts

FEMALE CONTACT

- 6 contact tines
- Excellent mechanical and electrical reliability
- Better resistance to high vibrations
- Improved electrical conductivity
- 100% compatible with other connectors



MALE CONTACT

Mating end diameter

- Ø 0.68[.027]
- Ø 0.48[.019] for 154 and 308 version



MATERIALS

Female contact

- Hood: machined brass alloy
- Clip: CuBe, stamped and formed

Male contact

- Machined brass alloy

Shell

- Aluminium, Electroless nickel

Guiding devices

- Stainless steel 303, Passivated

Plastic insert & keying devices

- Thermoplastic LCP, 30% glass-fiber filled

PLATING

Female contact

- Hood: tin lead or lead free
- Clip: gold over Nickel

Male contact

- Gold over Nickel

Technical specifications

Mechanical characteristics	SMASH	MIL-DTL-55302 sections
Backoff ¹ (mm)	1,2 _{MAX} [.047]	-
Mating force per contact (N)	1 N	§ 4.5.4
Unmating force per contact (N)	0,4 N	§ 4.5.4
Durability cycles	500	§ 4.5.9
Sinusoidal vibrations (10 to 2000 Hz) micro discontinuity 2ns	15 g	§ 4.5.10
Random vibrations (5 to 2000 Hz) micro discontinuity 2ns	2,682 g ² / Hz	EFA gunfire requirement
Shocks 6ms ½ sinus 2ns	100 g / 6s	§ 4.5.14
Recommended tightening torques		
- Nuts for M2,5 screws, brass (m.N)	0,25	/
- Nuts for M2 screws, brass (m.N)	0,2	/
Environmental characteristics		
Thermal shocks (°C)	-65 / + 150	
Cycles	5	§ 4.5.13
Salt Spray (hours)	96	§ 4.5.11
Electrical characteristics		
Current rating per contact (A)	3 _{MAX} 2 for 154 and 308 version	§ 4.5.5
Insulation resistance (GΩ)	5 _{MIN}	§ 4.5.8
Contact resistance (mΩ)	10 _{MAX}	§ 4.5.12
Dielectric Withstanding Voltage (Vrms)	1000 _{MIN}	§ 4.5.7.1
Service Voltage (at 50Hz) (Vrms)	250	/

1: When both connectors are fully mated, the backoff is the maximum distance the connectors can be unmated while functioning properly

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

SIGNAL CONTACTS

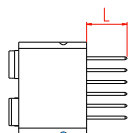
Female contacts for receptacle

Under development

Straight PC tail

- Thru hole soldering
- Mother board or mezzanine connection

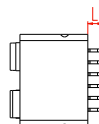
YD



Press fit / compliant

- For solderless assembly
- Mother board or mezzanine connection
- Under development

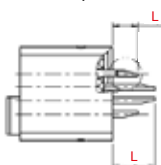
YP*



Solder cup

- Soldering on wire
- For test equipment only
- Solder cup not oriented

Z



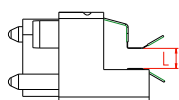
Contact type	L	Termination section	PCB thickness	Standard termination plating µm [µin]	RoHS Termination plating µm [µin]
YD	6,5 [.256]	0,48 _{MAX} [0.019]	5,5 _{MAX} [.217]	3 [.118] Ni + 10 [.394] SnPb	2,5 [.098] Ni + 5 [.197] bright pure Sn
YP*	3,2 _{MIN} [.118]	0,73 [0.029]	2,5 _{MIN} [.098]	2 [.079] Ni electrolytic + 15,2 [.598] Ni electroless + 10 [.394] SnPb	/
Z	3 ± 0,3 5 ± 0,2	/	/	/	/

Male contacts for plug

Surface Mount Technology

- Flexible circuit double sided SMT mounting
- Daughter board or extender board

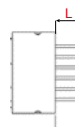
U01



Straight PC tail

- Thru hole soldering
- Daughter board or mezzanine connection

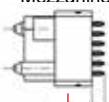
YD



Press fit / compliant

- For solderless assembly
- Mezzanine connection

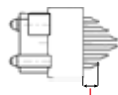
YP



Solder cup

- Soldering on wire
- For test equipment only, not qualified for embended applications
- Solder cup not oriented

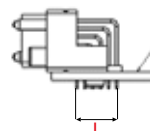
Z



Right angle PC tail

- Thru hole soldering
- Daughter board

YC



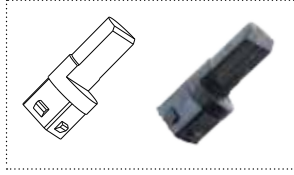
Contact type	L	Termination section	PCB thickness
U01	2,4 ± 0,3 [.094±.012]	0,48 _{MAX} [.019]	2,4 ± 0,3 [.094±.012]
YD	4,4 ± 0,2 [.173±.008]		5,5 _{MAX} [.217]
YC	4 ± 0,2 [.157±.008]		3 _{MAX} [.118]
YP	3,2 _{MAX} [.118]	0,82 [.032]	/
Z	3 ± 0,35 [.118±.014]		/
	5 ± 0,35 [.197±.014]		7 ± 0,35 [.276±.014]

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

KEYING & GUIDING

Keying

- 2 keying per connector
- 4 positions per cavity
- 32 keying possibilities per mated pair
- Non assembled



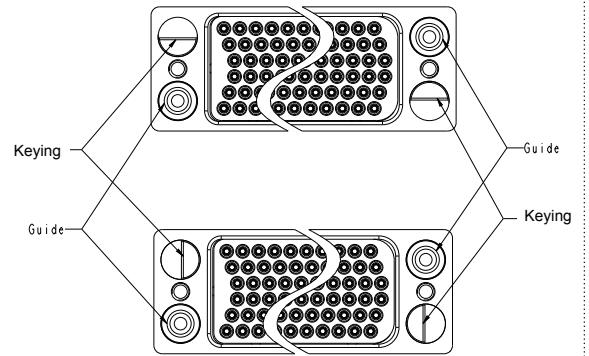
Male guides

- 2 guides per male connector
- Connectors are supplied with non-assembled guiding devices



Female guides

- 2 guides per female connector
- Connectors are supplied with non-assembled guiding devices



Mating sequence

Guiding	Insulator guidance	Keying	Contact engagement	Electrical contact	Mated connector
5,95 ± 0,35[.234 ± .014]	5,9 ± 0,1[.232 ± .004]	5,54 ± 0,2[.218 ± .008]	4,75 ± 0,25[.187 ± .010]	1,75 ± 0,35[.069 ± .014]	0

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

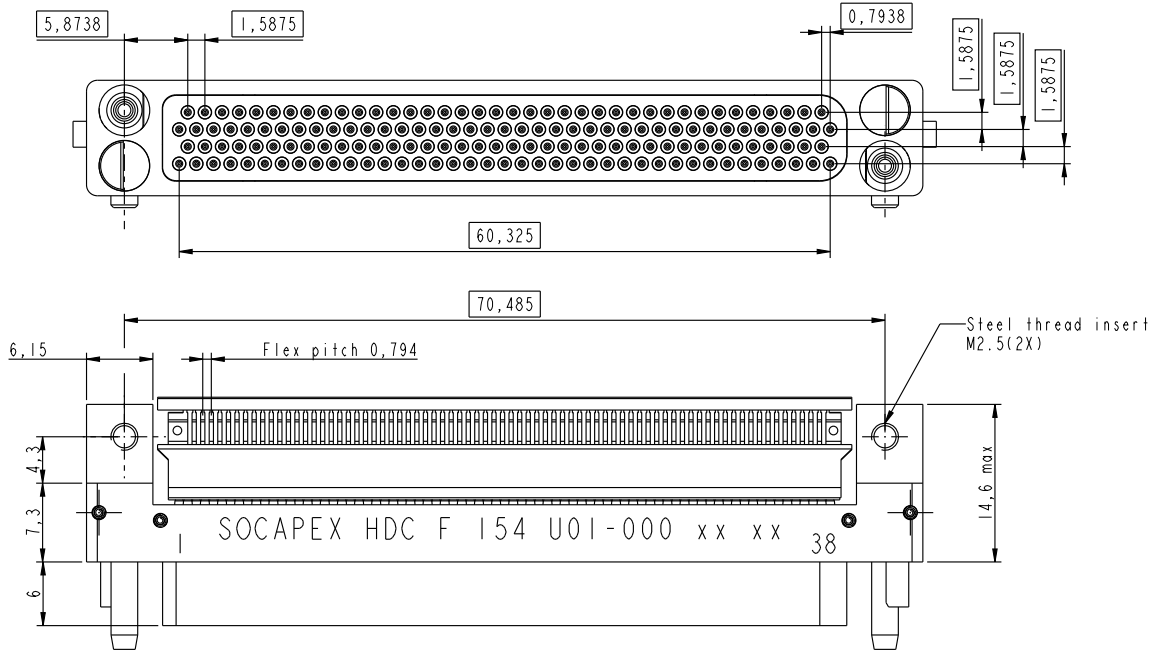
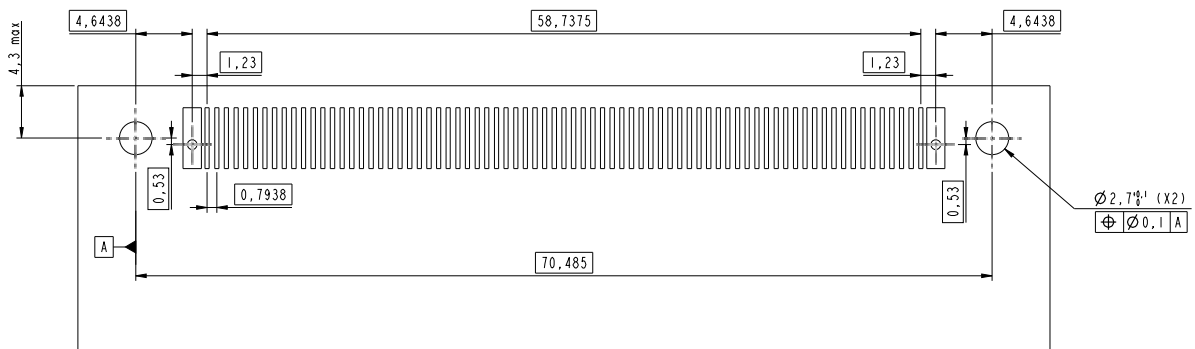
ARRANGEMENT & LAYOUT

Plug 154 contacts

SMT U01

2A per contact, Ø 0.48[.019]

HDC F 154 U01-000

Arrangement**Layout**

All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENT & LAYOUT

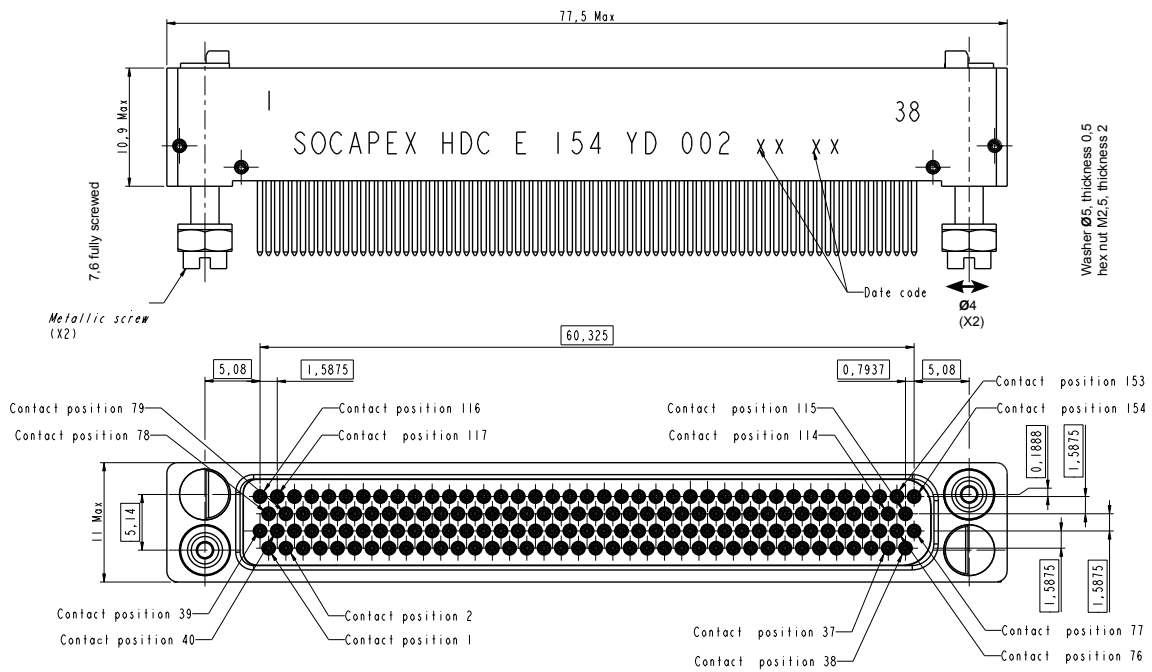
Receptacle 154 contacts

Straight PC tail YD or press fit / compliant YP
2A per contact, Ø 0.48[.019]

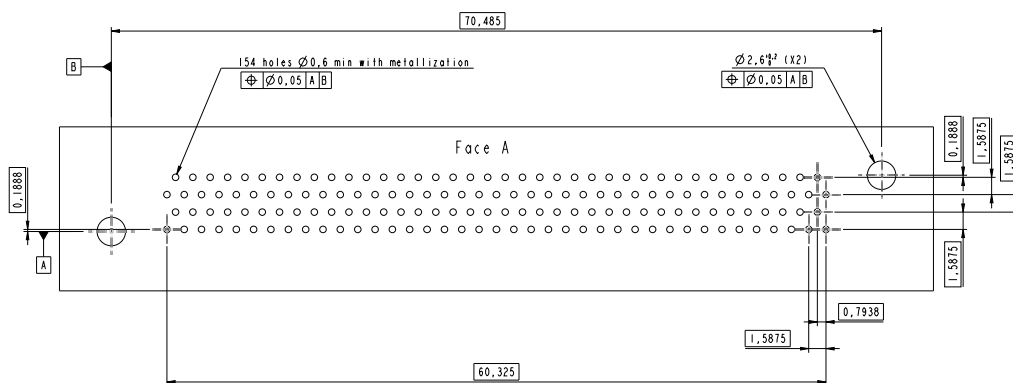
HDC E 154 YD-002

HDC E 154 YP-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

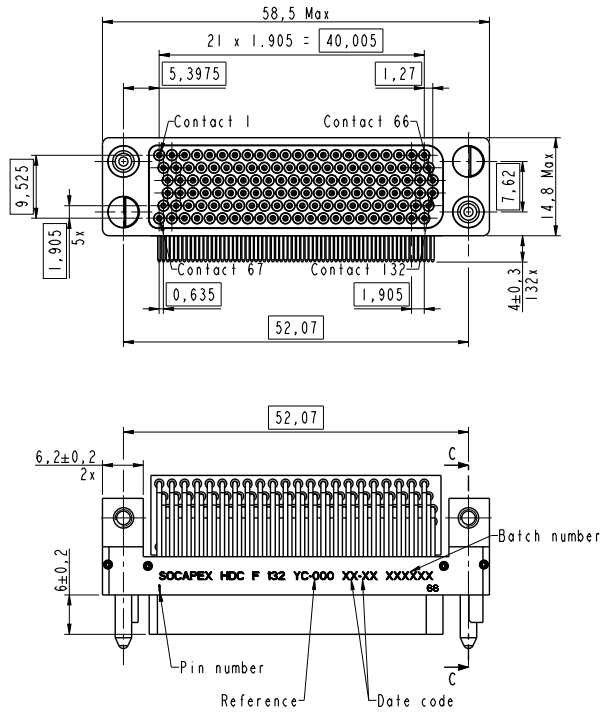
ARRANGEMENT & LAYOUT

Plug 132 contacts

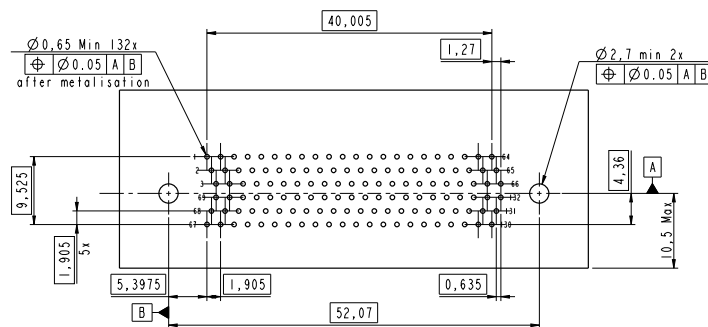
Right angle PC tail YC

HDC F 132 YC-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

Receptacle 132 contacts

HDC E 132 YP-000

The technical drawing illustrates the SOCAPEX HDC E 132 YD-000 connector from two perspectives: a side view (top) and a front view (bottom).

Side View Dimensions:

- Total length: 66
- Length of the main body: 10.9 Maxi
- Length of the contact housing: 6.9 Maxi
- Contact pitch: 0.6 Maxi
- Contact diameter: $\varnothing 0.48 \text{ Maxi}$ (labeled as 132x)
- Labels: "Date code" and "Batch number" point to specific areas on the top surface.
- Part identifier: SOCAPEX HDC E 132 YD-000 xx-xx xxxxxx

Front View Dimensions:

- Total width: 58.5 Maxi
- Contact array width: 52.07
- Contact pitch (horizontal): 0.635
- Contact position 67 (center of array)
- Contact position 132 (right edge of array)
- Contact position 66 (left edge of array)
- Contact position 1 (far left)
- Dimensions for mounting holes and other features are provided in millimeters (e.g., 9.525, 1.905, 5.3975, 1.27, 40.005, 14.8 Maxi).

Technical drawing of a rectangular plate with a grid of holes. The plate has overall dimensions of 52.07 by 9.525. A central area of 40.005 by 5.3975 contains a grid of holes. The grid is defined by 132 columns and 2 rows of holes. The holes have a diameter of 0.65 mini. The plate has a thickness of 1.905. The drawing includes various dimension lines and labels for hole positions and plate dimensions.

All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

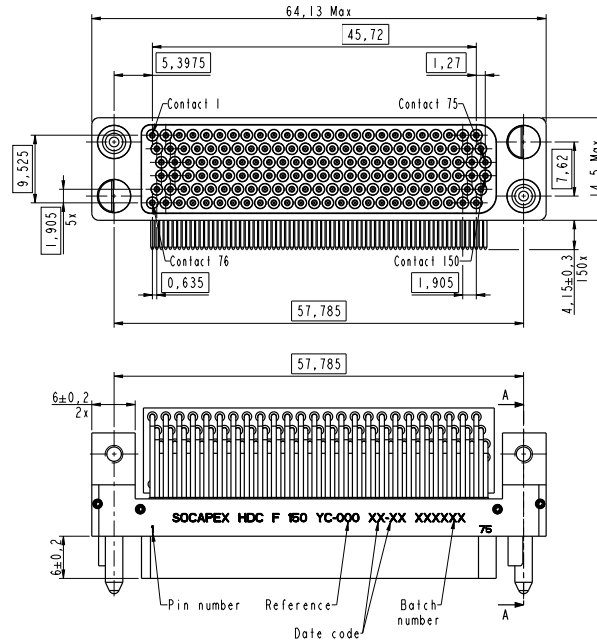
ARRANGEMENT & LAYOUT

Plug 150 contacts

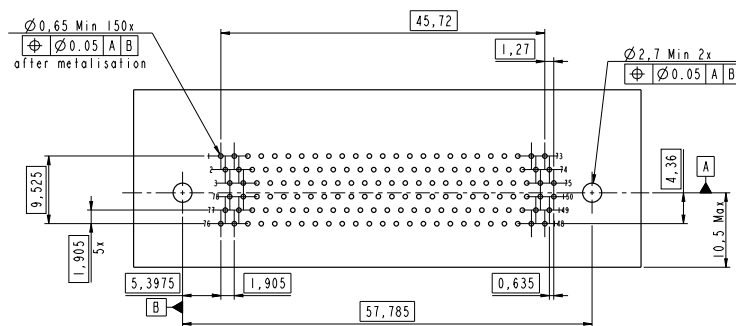
Right angle PC tail YC

HDC F 150 YC-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENT & LAYOUT

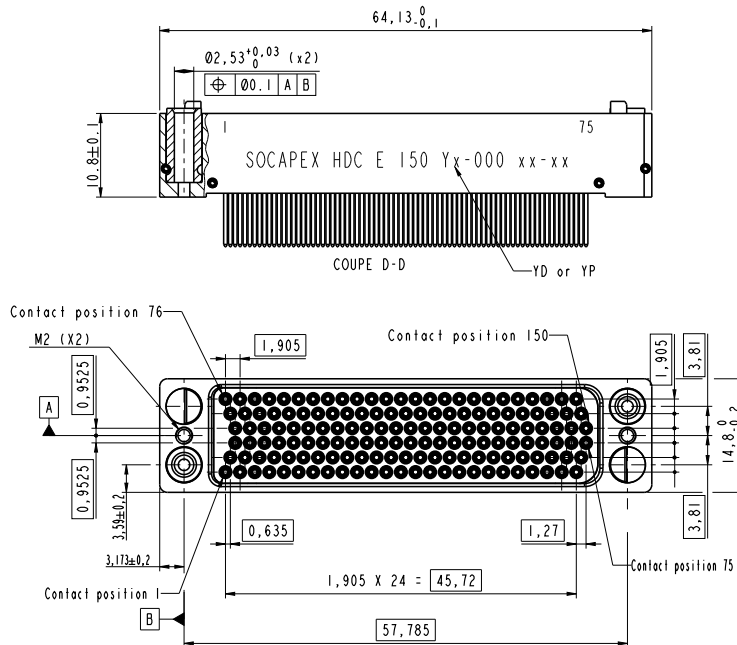
Receptacle 150 contacts

Straight PC tail YD or press fit / compliant YP

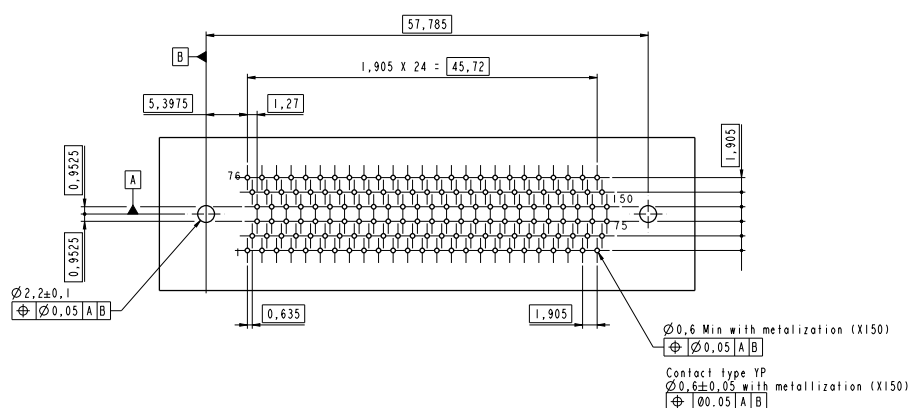
HDC E 150 YD-000

HDC E 150 YP-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

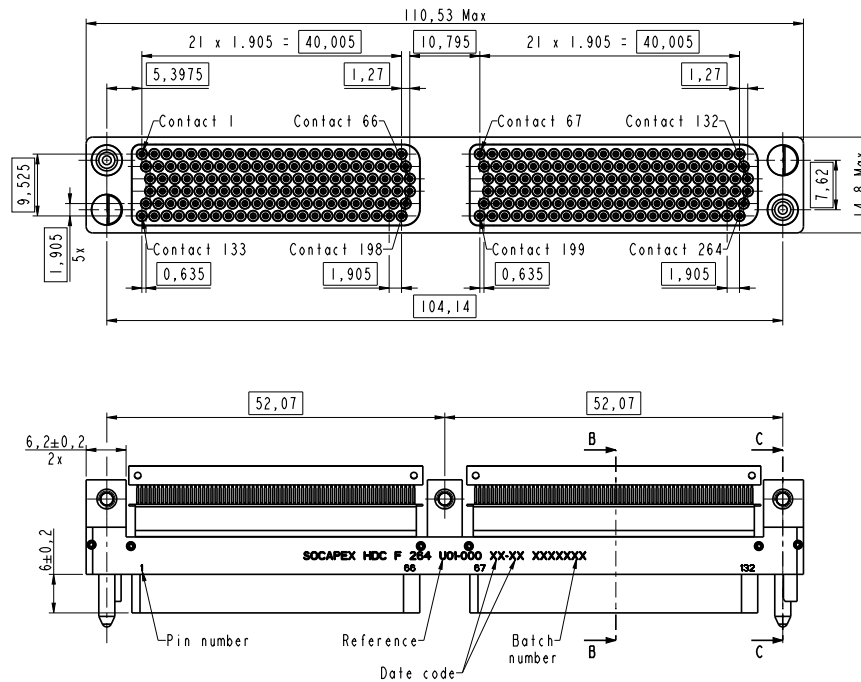
ARRANGEMENT & LAYOUT

Plug 264 contacts

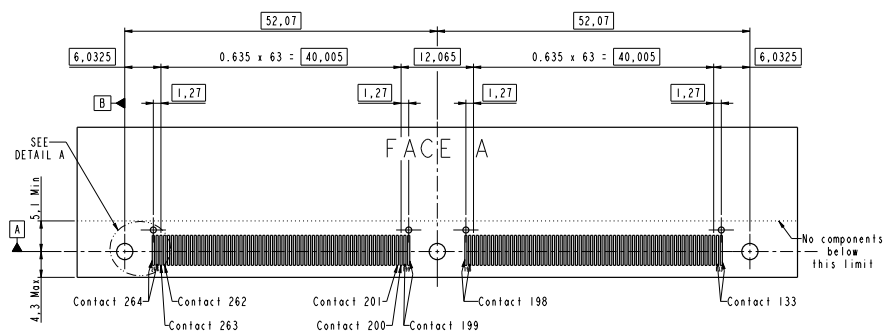
SMT U01

HDC F 264 U01-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

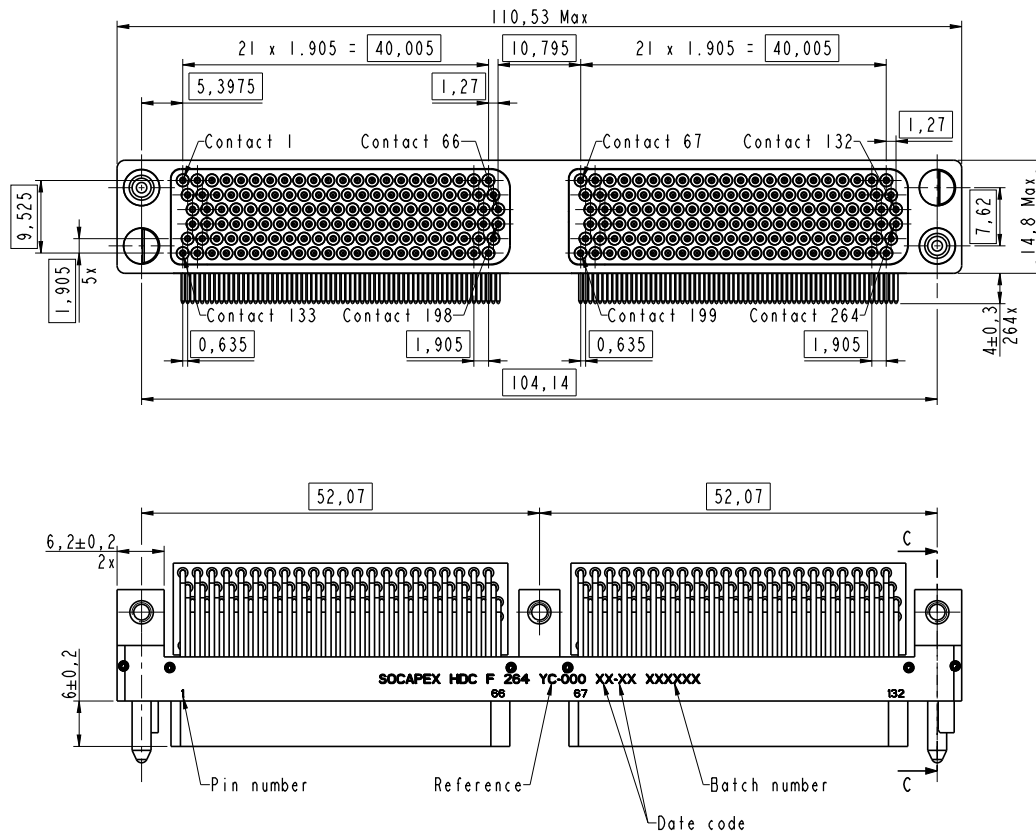
ARRANGEMENT & LAYOUT

Plug 264 contacts

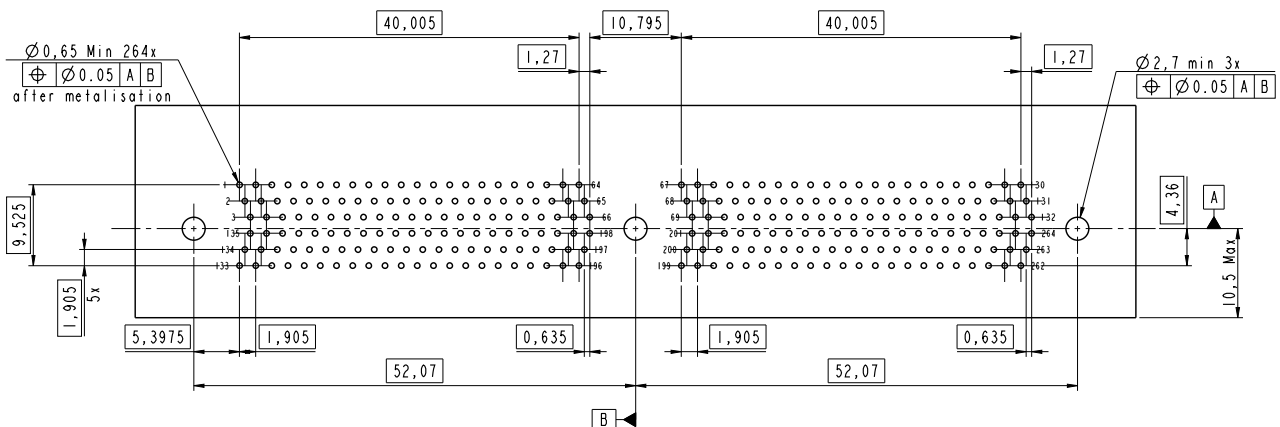
Right angle PC tail YC

HDC F 264 YC-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENT & LAYOUT

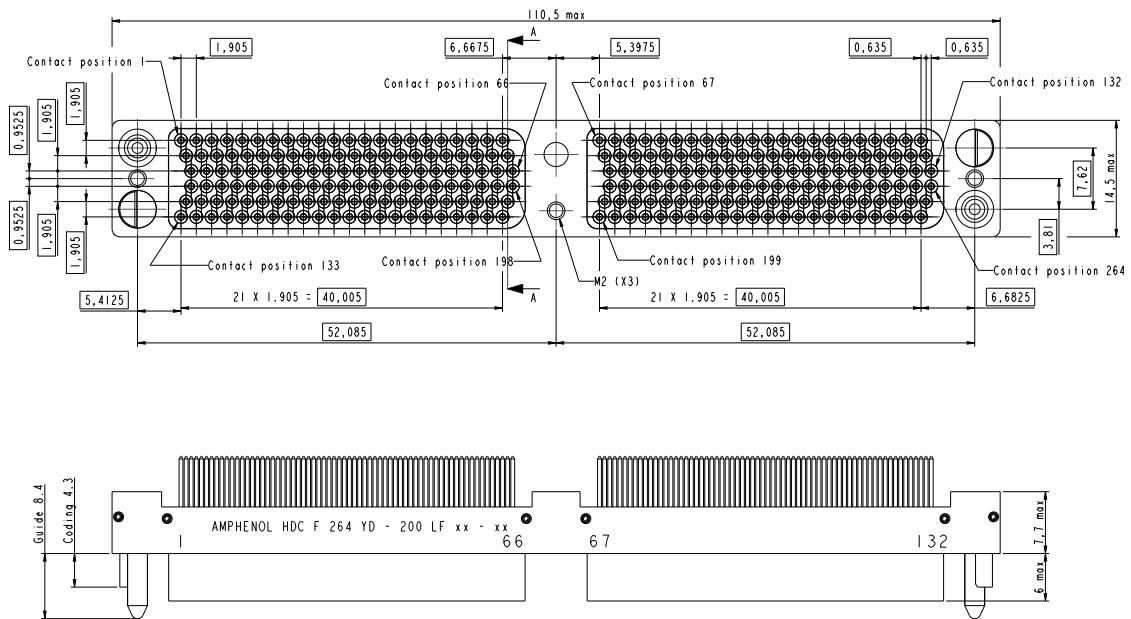
Plug 264 contacts

Straight PC tail YD or press fit / compliant YP

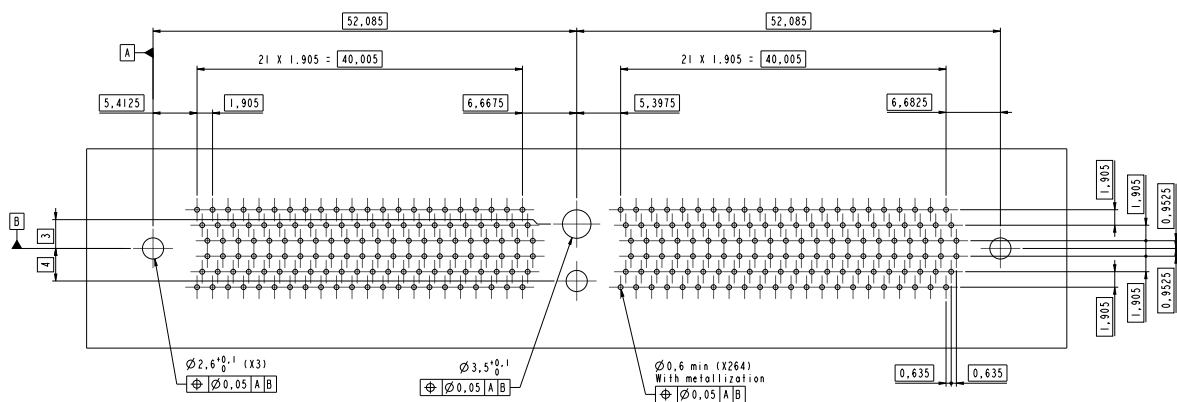
HDC F 264 YD-200 LF

HDC F 264 YP-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENT & LAYOUT

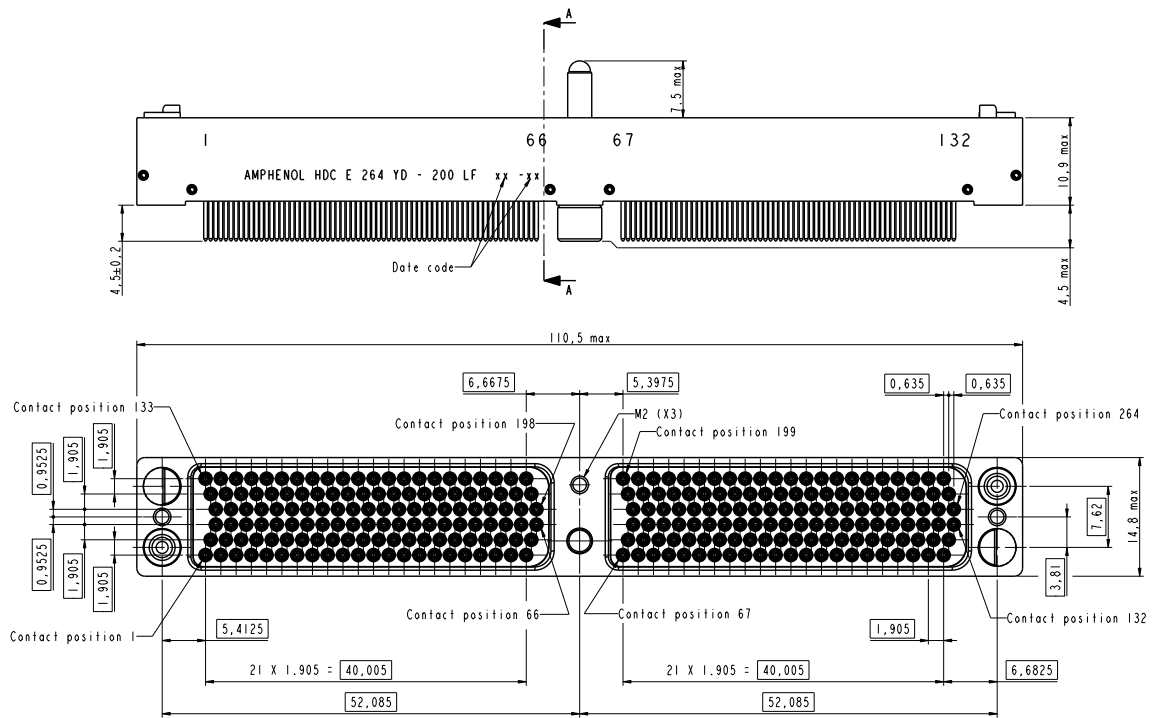
Receptacle 264 contacts

Straight PC tail YD or press fit / compliant YP

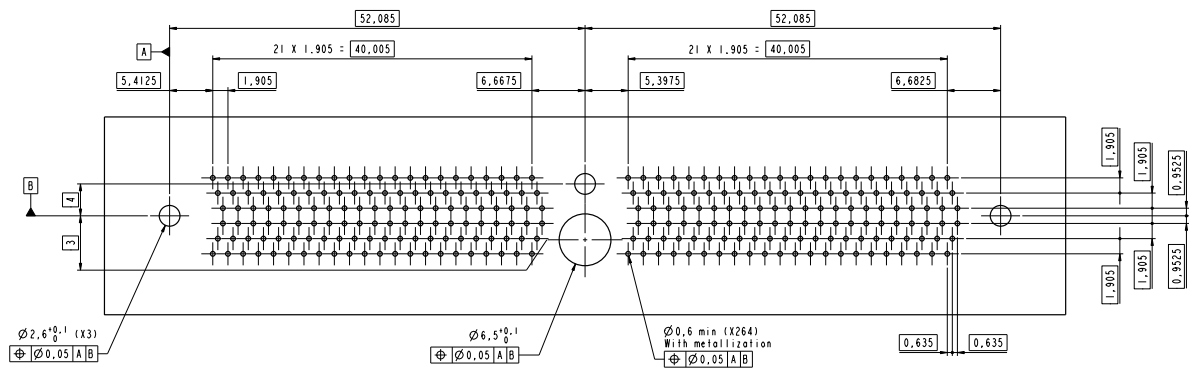
HDC E 264 YD-200 LF

HDC E 264 YP-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

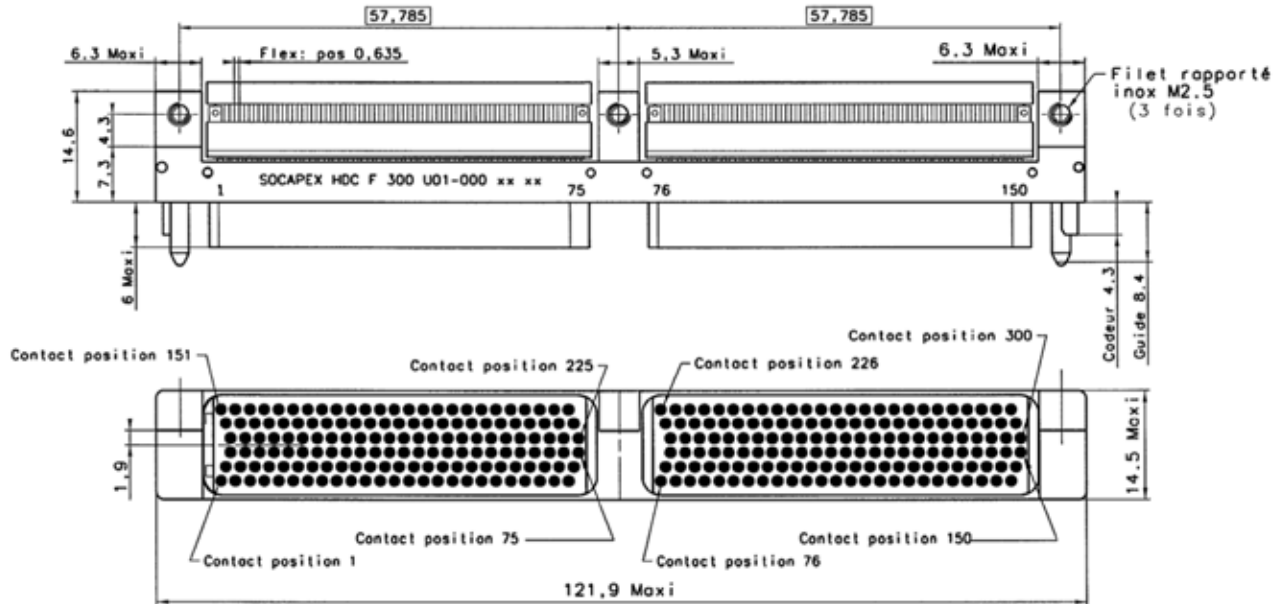
ARRANGEMENT & LAYOUT

Plug 300 contacts

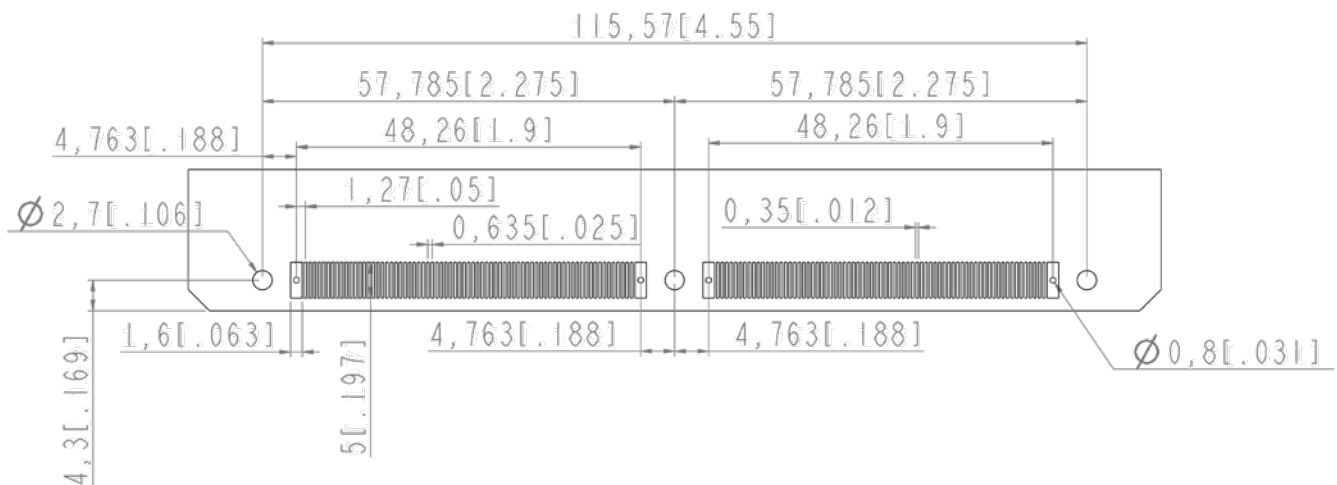
SMT U01

HDC F 300 U01-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

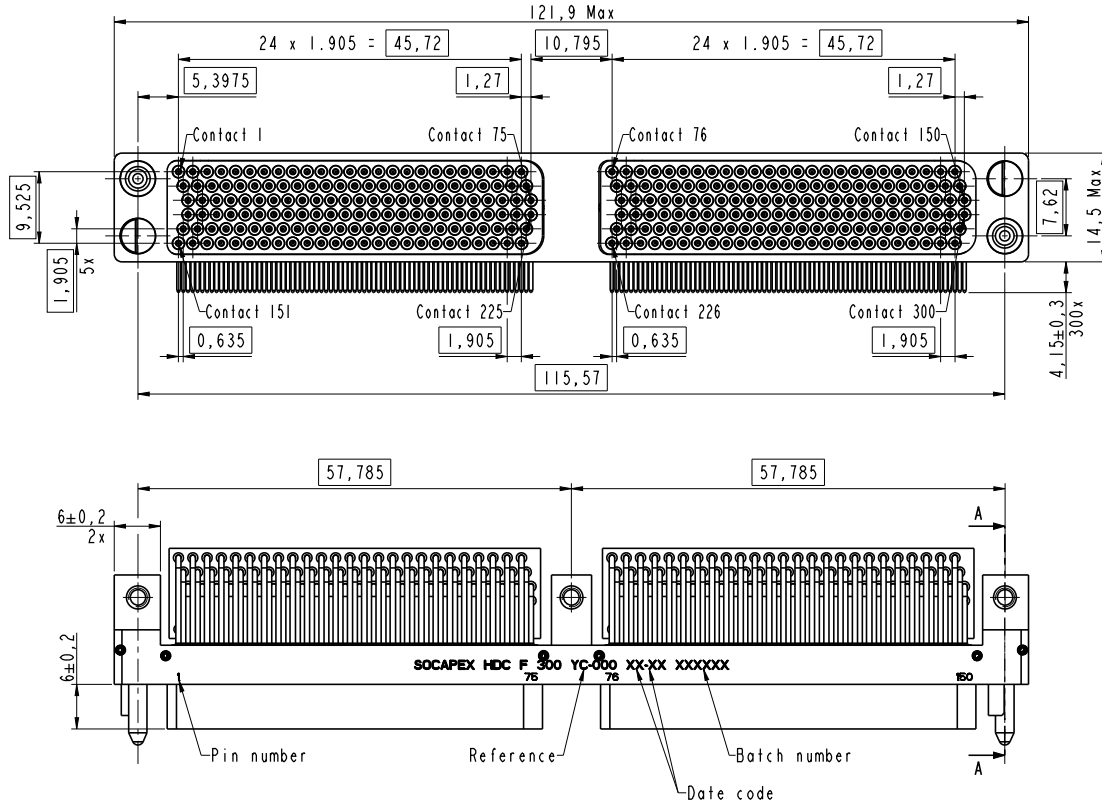
ARRANGEMENT & LAYOUT

Plug 300 contacts

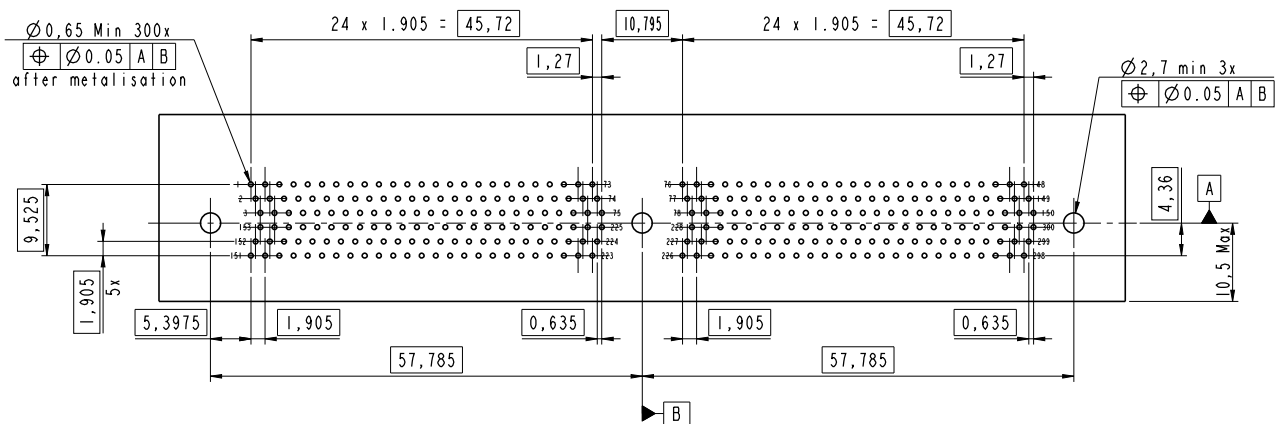
Right angle PC tail YC

HDC F 300 YC-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENT & LAYOUT

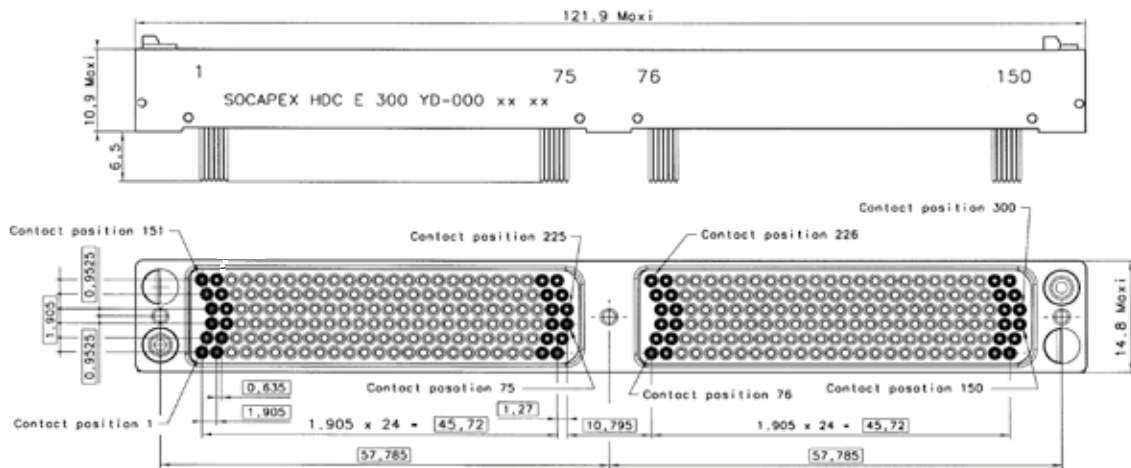
Receptacle 300 contacts

Straight PC tail YD or press fit / compliant YP

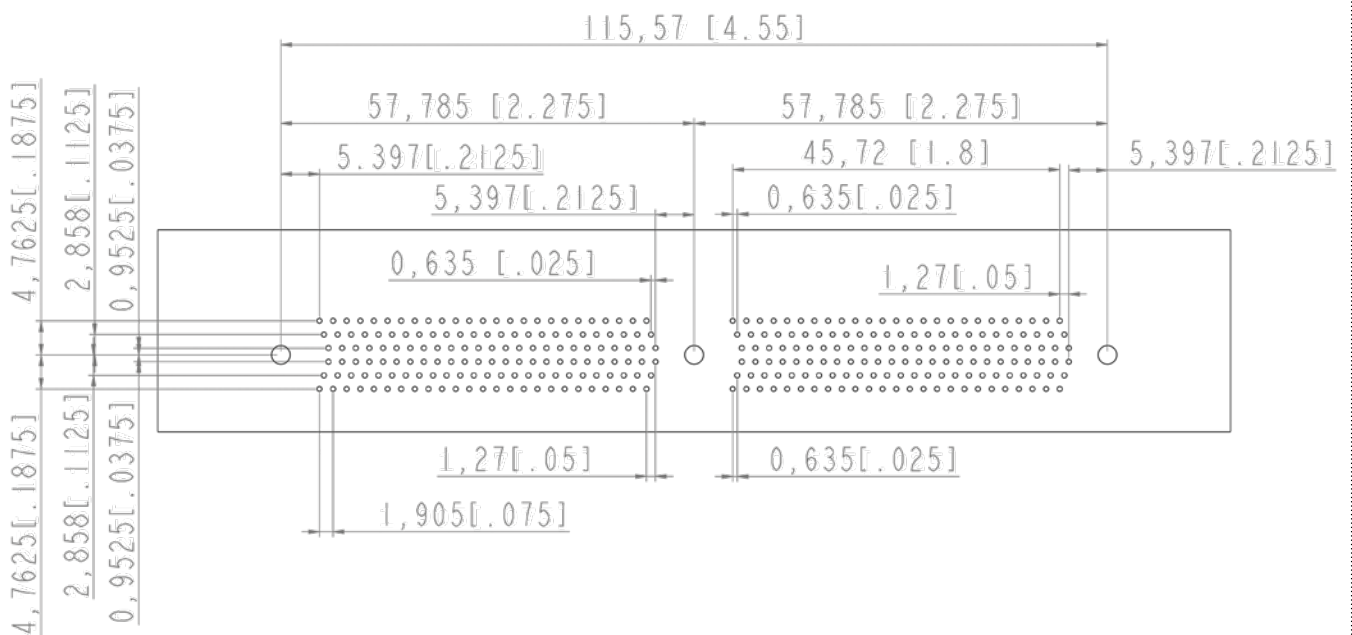
HDC E 300 YD-000

HDC E 300 YP-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

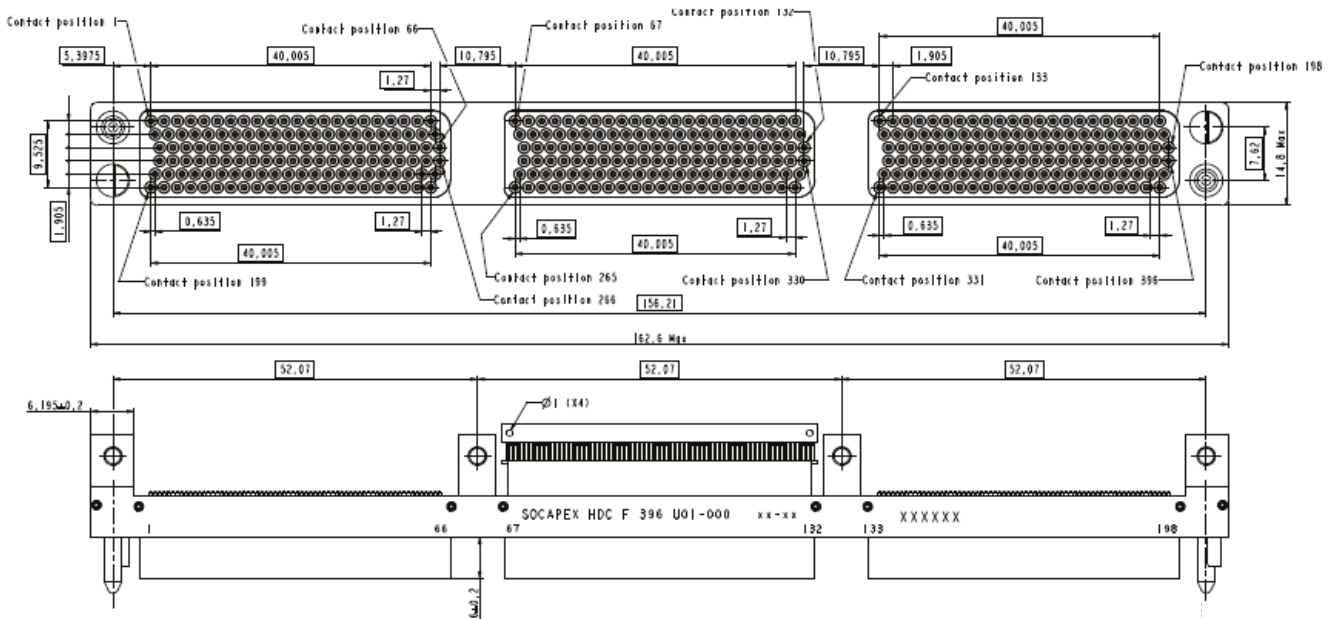
ARRANGEMENT & LAYOUT

Plug 396 contacts

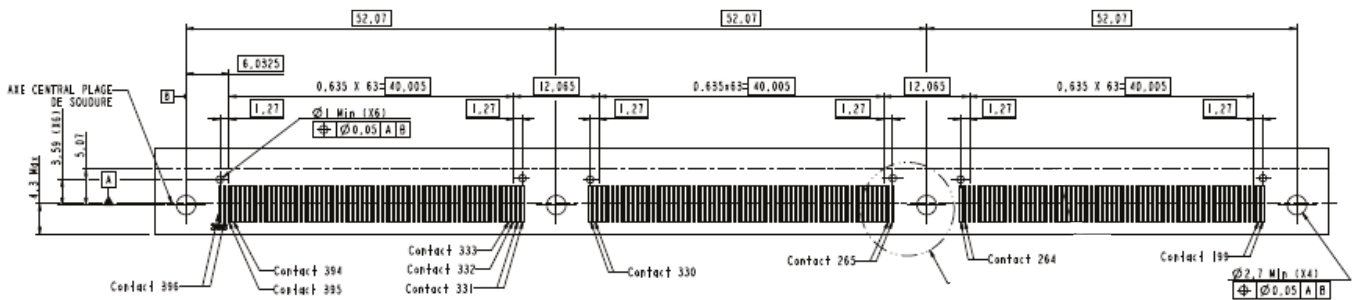
SMT U01

HDC F 396 U01-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

Plug 396 contacts

HDC F 396 YC-000

The drawing shows the SOCAPEX HDC F 396 connector with the following details:

- Top View:**
 - Overall width: 162.6 Max
 - Pin pitch: 21 x 1.905 = 40.005
 - Pin 1 position: 5.3975
 - Pin 66 position: 1.27
 - Pin 67 position: 10.795
 - Pin 132 position: 1.27
 - Pin 133 position: 10.795
 - Pin 198 position: 1.27
 - Pin 199 position: 0.635
 - Pin 264 position: 1.905
 - Pin 265 position: 0.635
 - Pin 330 position: 1.905
 - Pin 331 position: 0.635
 - Pin 396 position: 1.905
 - Pin 1 contact: Contact 1
 - Pin 66 contact: Contact 66
 - Pin 67 contact: Contact 67
 - Pin 132 contact: Contact 132
 - Pin 133 contact: Contact 133
 - Pin 198 contact: Contact 198
 - Pin 199 contact: Contact 199
 - Pin 264 contact: Contact 264
 - Pin 265 contact: Contact 265
 - Pin 330 contact: Contact 330
 - Pin 331 contact: Contact 331
 - Pin 396 contact: Contact 396
- Side View:**
 - Overall height: 6.2 ± 0.2
 - Pin height: 4.0 ± 0.3
 - Pin pitch: 21
 - Pin 1 position: 52.07
 - Pin 66 position: 52.07
 - Pin 132 position: 52.07
 - Pin 198 position: 52.07
 - Pin 1 contact: Contact 1
 - Pin 66 contact: Contact 66
 - Pin 132 contact: Contact 132
 - Pin 198 contact: Contact 198
- Label:** SOCAPEX HDC F 396 YC-000 XX-XX XXXXXX
- Pin number:** 1, 66, 67, 132, 133, 198
- Reference:** SOCAPEX HDC F 396 YC-000 XX-XX XXXXXX
- Batch number:** XX-XX
- Date code:** XXXXXX

The diagram illustrates the reinforcement layout for a reinforced concrete slab. It shows three repeating sections of the slab, each with a width of 21 x 1.905 = 40.005 meters. The total length of the slab is 107.955 meters. The thickness of the slab is 0.635 meters. The reinforcement consists of top bars (A) and bottom bars (B). The top bars are spaced at 1.905 meters, and the bottom bars are spaced at 0.635 meters. The diagram also shows the placement of stirrups and the location of the main reinforcement bars.

All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

Due to technical progress, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

ARRANGEMENT & LAYOUT

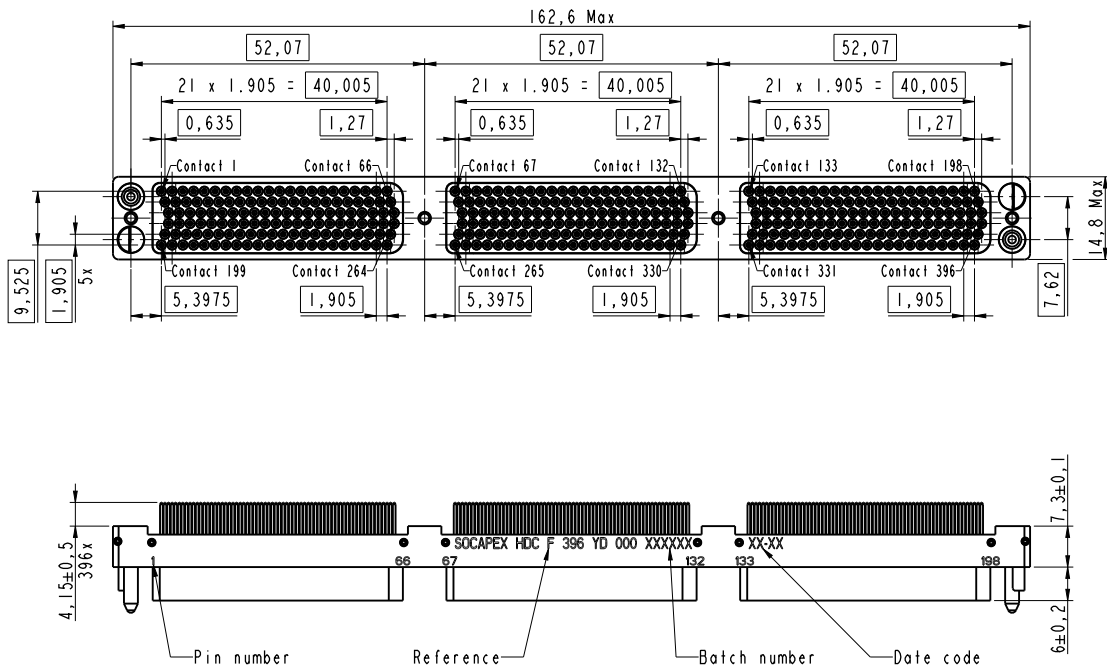
Plug 396 contacts

Straight PC tail YD or press fit / compliant YP

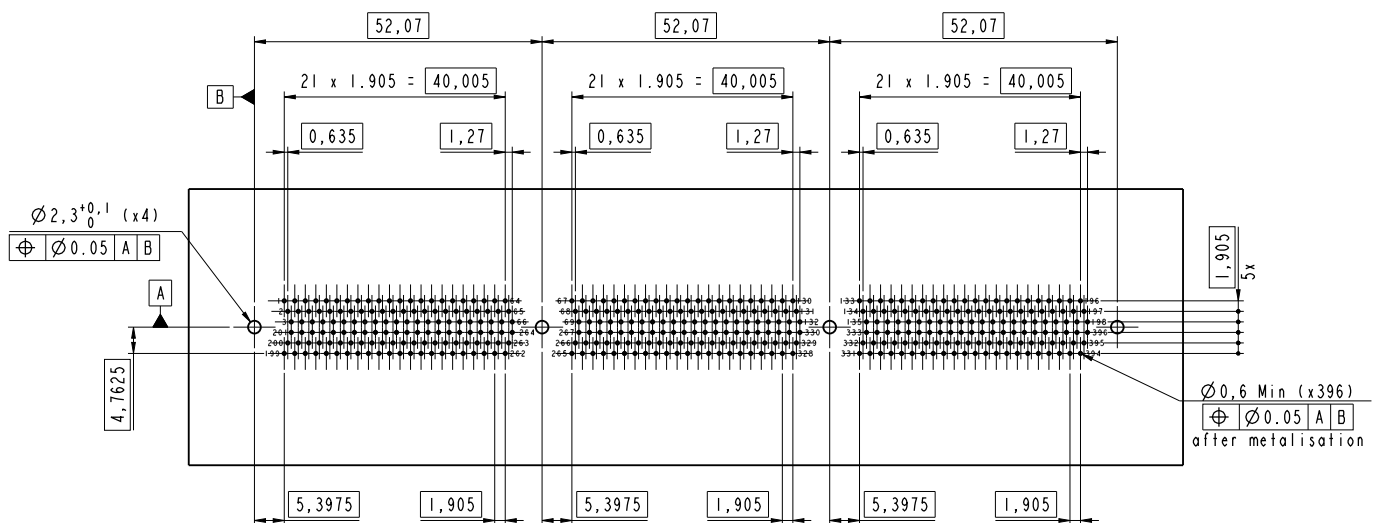
HDC F 396 YD-000

HDC F 396 YP-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENT & LAYOUT

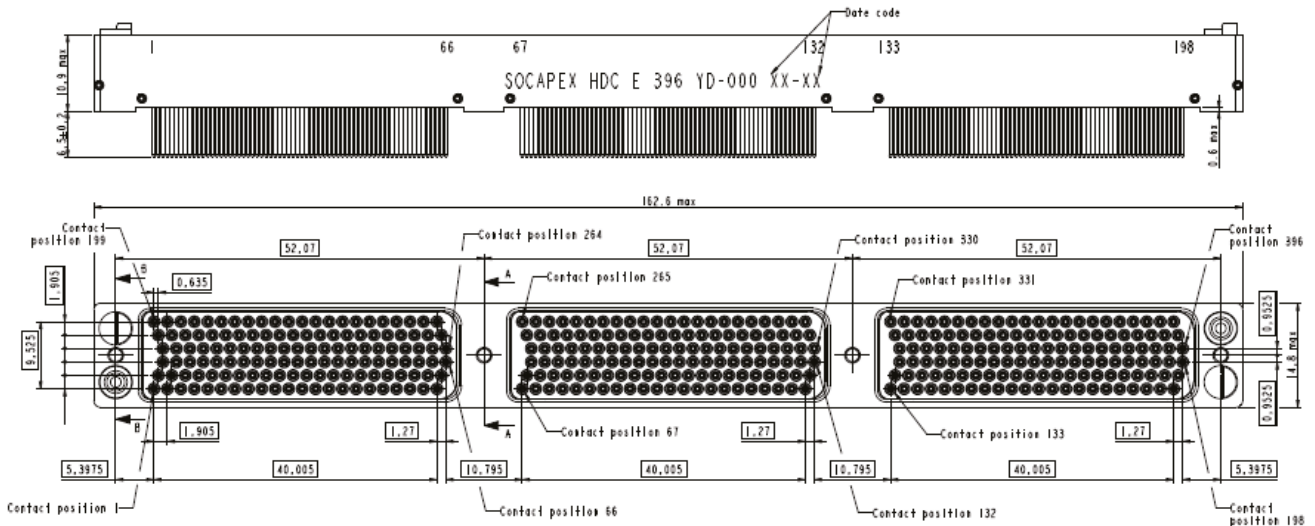
Receptacle 396 contacts

Straight PC tail YD or press fit / compliant YP

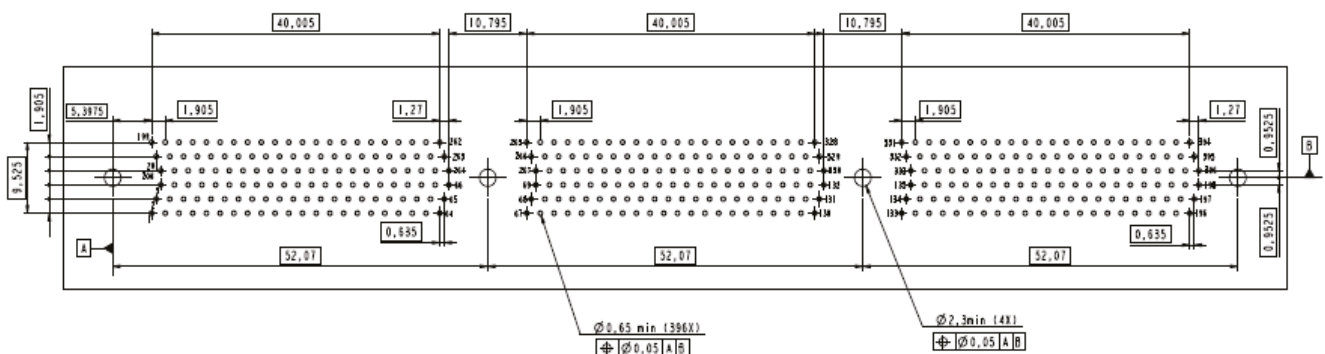
HDC E 396 YD-000

HDC E 396 YP-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

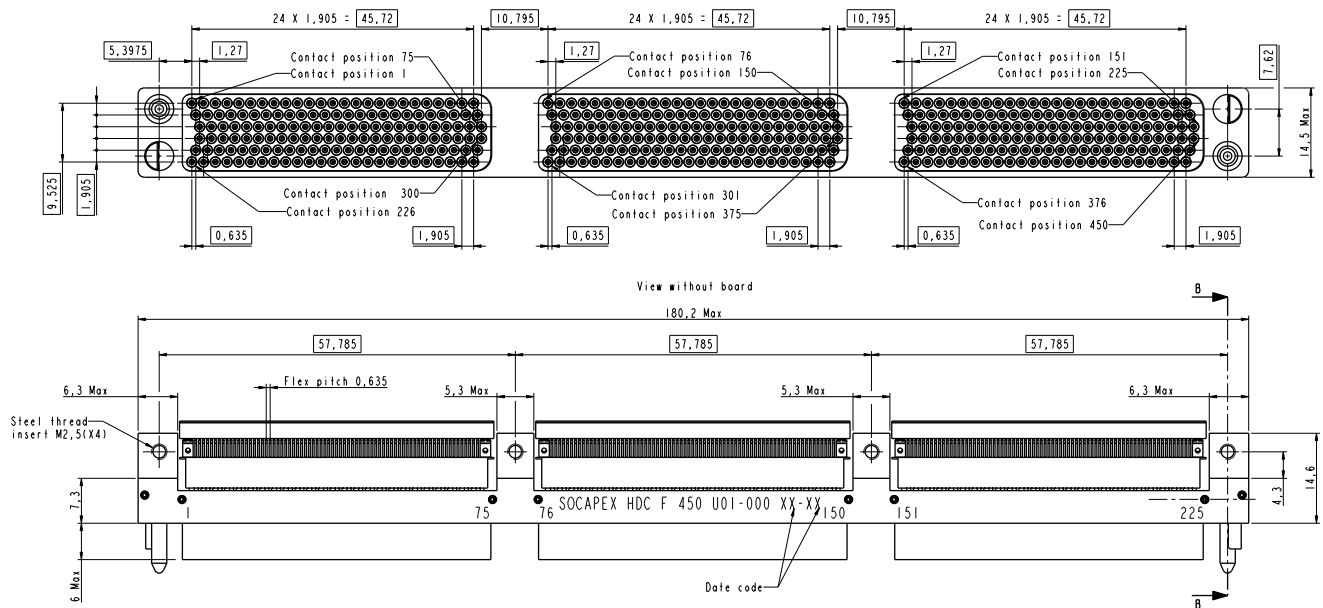
ARRANGEMENT & LAYOUT

Plug 450 contacts

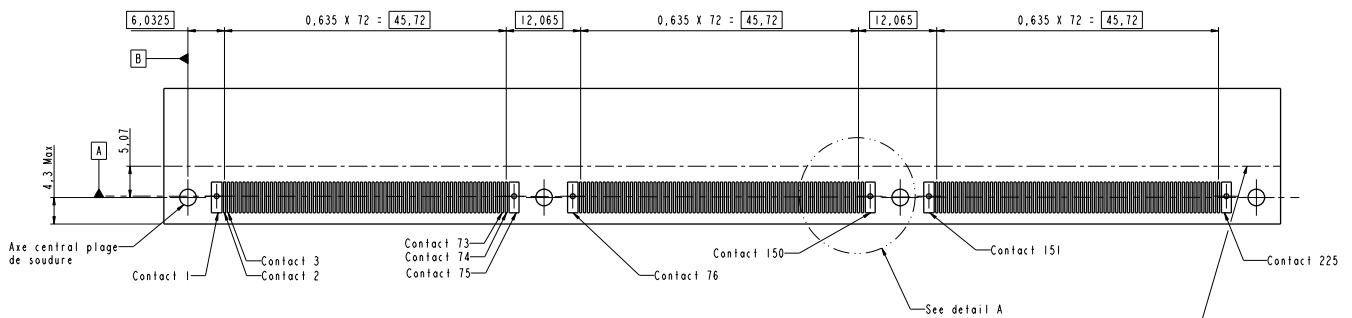
SMT U01

HDC F 450 U01-000

Arrangement



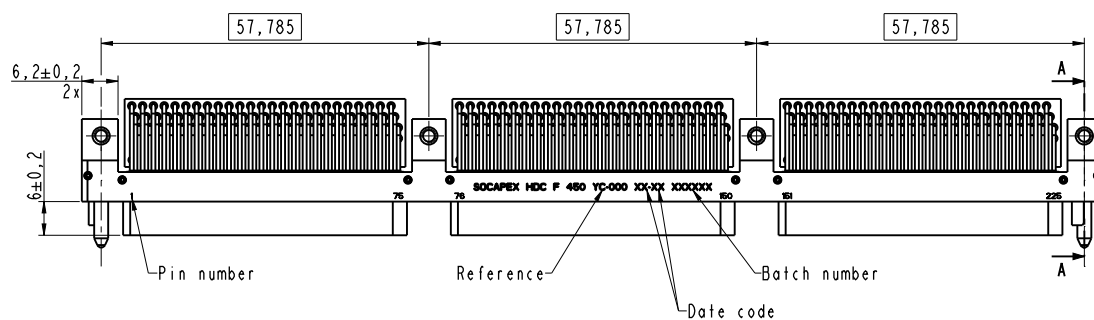
Layout



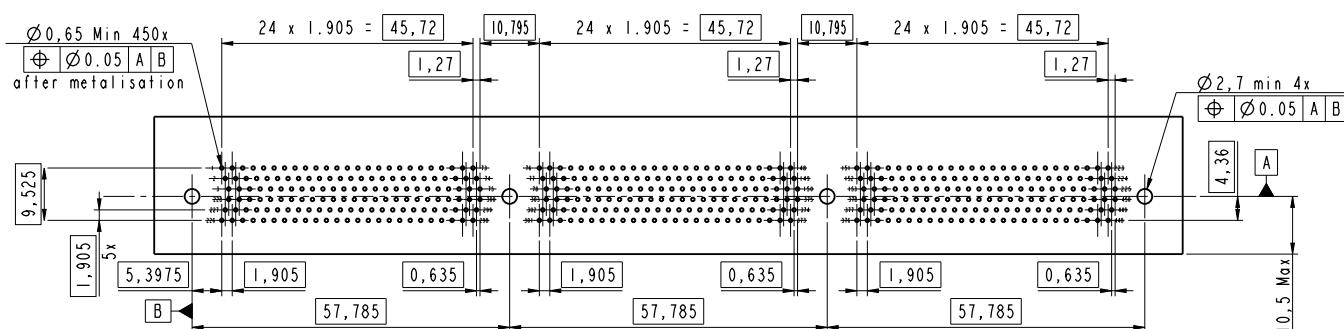
All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

Plug 450 contacts

HDC F 450 YC-000

[illegible]

Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENT & LAYOUT

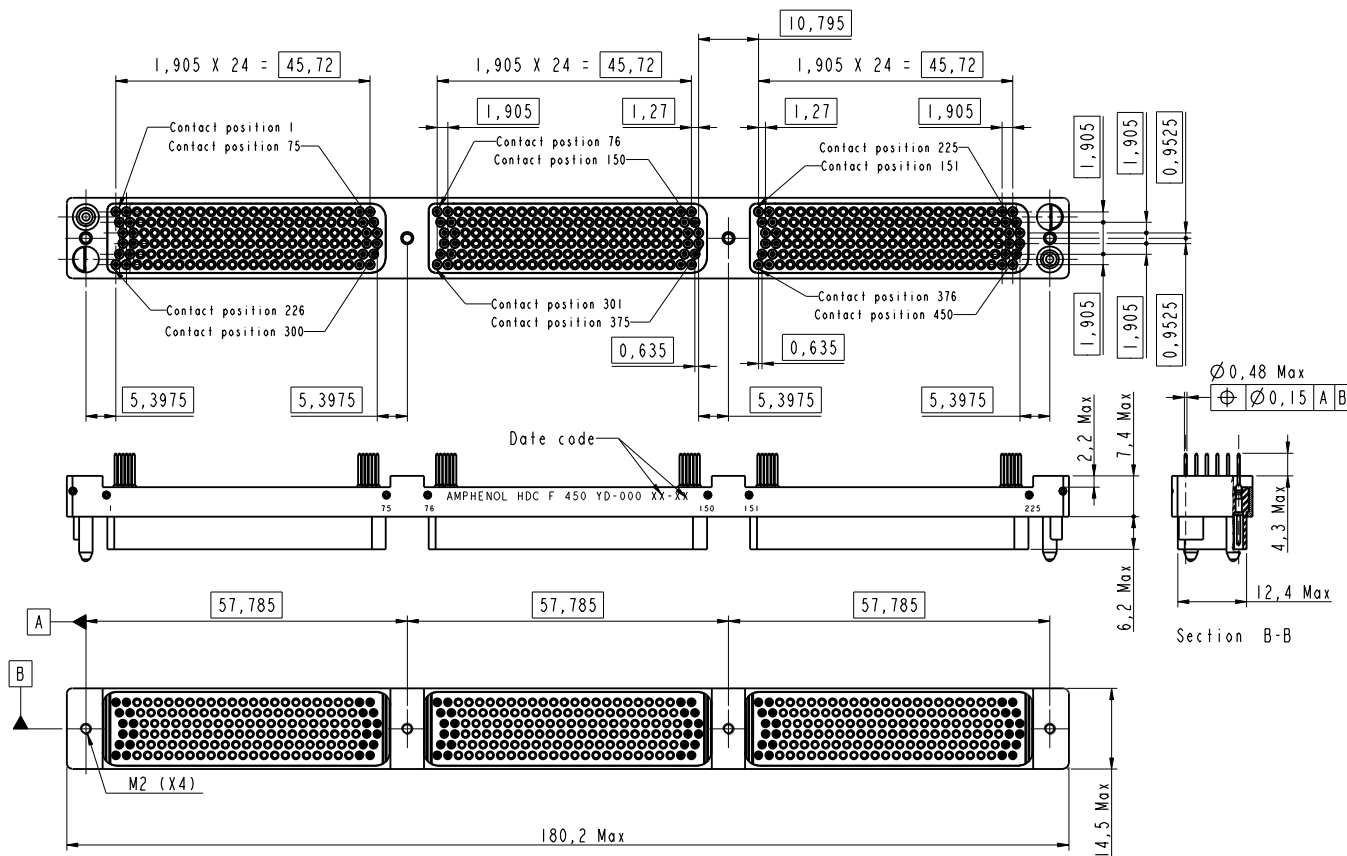
Plug 450 contacts

Straight PC tail YD or press fit / compliant YP

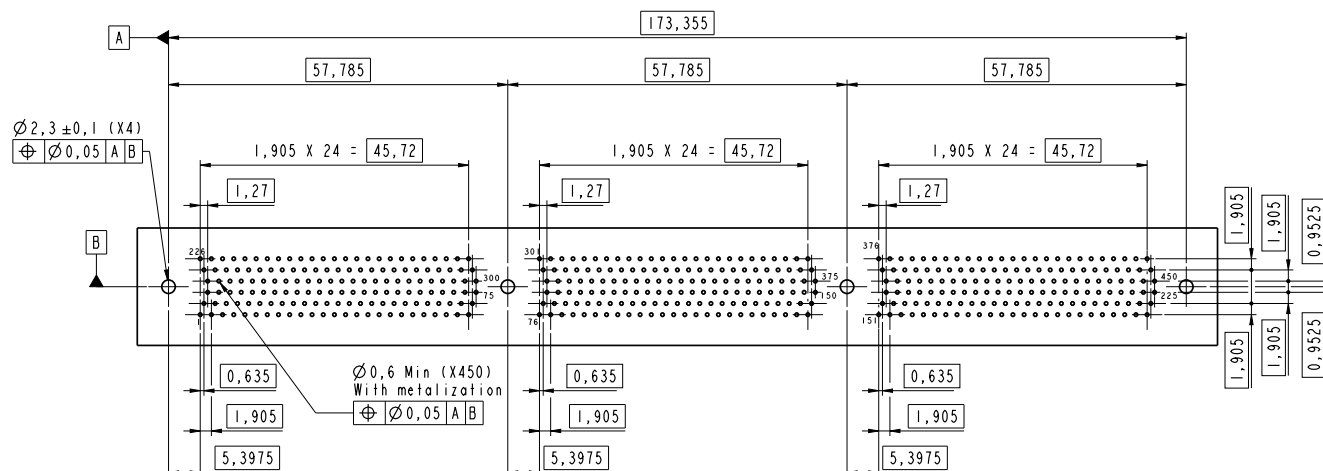
HDC F 450 YD-000

HDC F 450 YP-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENT & LAYOUT

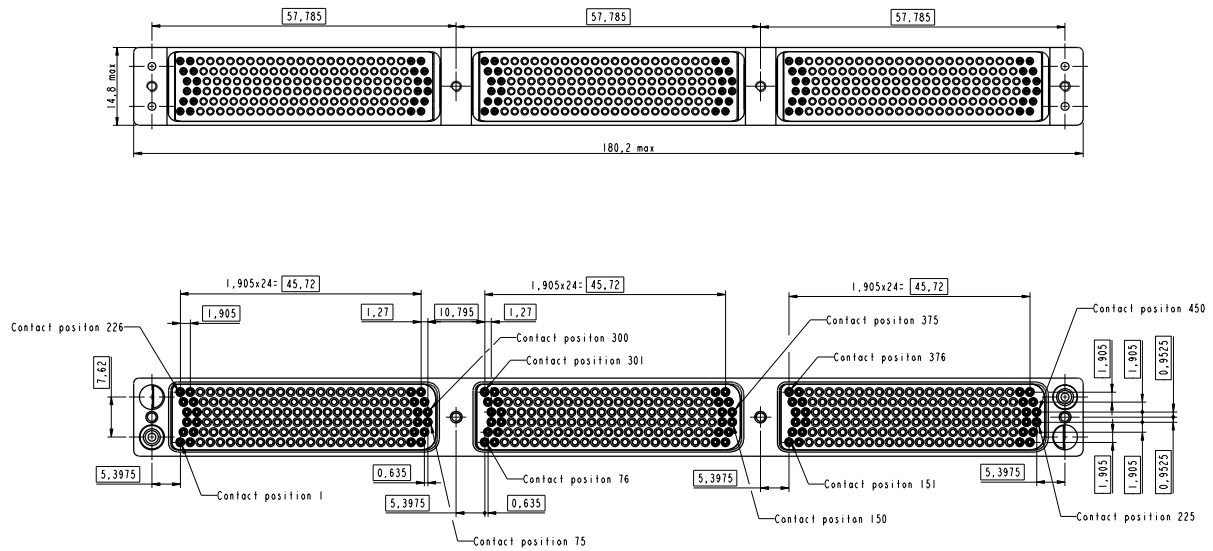
Receptacle - 450 contacts

Straight PC tail or press fit / compliant YP

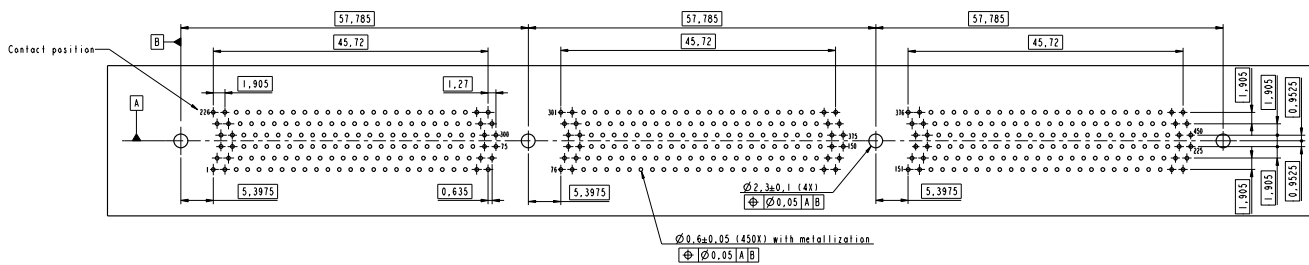
HDC E 450 YD-000

HDC E 450 YP-000

Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

NOTES

Notes section with horizontal lines for writing.

HDAS
SMASH
HDB ² /HSB ²
R-VPX
R-SATA
127/HE8

WEIGHT

Connector type	Number of contacts	Commercial designation*	Weight (in gram) ±15%
Receptacle	154	HDCE154YD-000	20
		HDCE154Z-000	
	150	HDCE150YD-000	22
		HDCE150YP-000	
		HDCE150Z-000	
	264	HDCE264YD-000	38
		HDCE264YP-000	
		HDCE264Z-000	
	300	HDCE300YD-000	42
		HDCE300YP-000	
		HDCE300Z-000	
	396	HDCE396YD-000	54
		HDCE396YP-000	
		HDCE396Z-000	
Plug	450	HDCE450YD-000	60
		HDCE450YP-000	
		HDCE450Z-000	
	154	HDCF154U01-000	20
		HDCF154YD-000	
	150	HDCF150U01-000	25
		HDCF150YD-000	
		HDCF150YP-000	
	264	HDCF264U01-000	39
		HDCF264YD-000	
		HDCF264YP-000	
	300	HDCF300U01-000	47
		HDCF300YD-000	
		HDCF300YP-000	
	396	HDCF396U01-000	60
		HDCF396YD-000	
		HDCF396YP-000	
	450	HDCF450U01-000	67
		HDCF450YD-000	
	450	HDCF450YP-000	64
		HDCF450YP-000	

*Connector weights remain identical for LF versions

HOW TO ORDER - SMASH

1.	2.	3.	4.	5.	6.
Series	Connector type	Total number of contacts	Termination style	Variation suffix	Tail finish
HDC	E	300	YD	- 000	LF

1. Series

HDC	Smash
-----	-------

4. Termination style

YC	HDC F, right angle PC tail
YD	HDC E & HDC F, straight PC tail
U01	HDC F, SMT double sided
YP	HDC E & HDC F, press fit / compliant

2. Connector type

F	Plug (Male contacts)
E	Receptacle (Female contacts)

5. Variation suffix

- 000	Standard, by default
Consult us	For custom versions

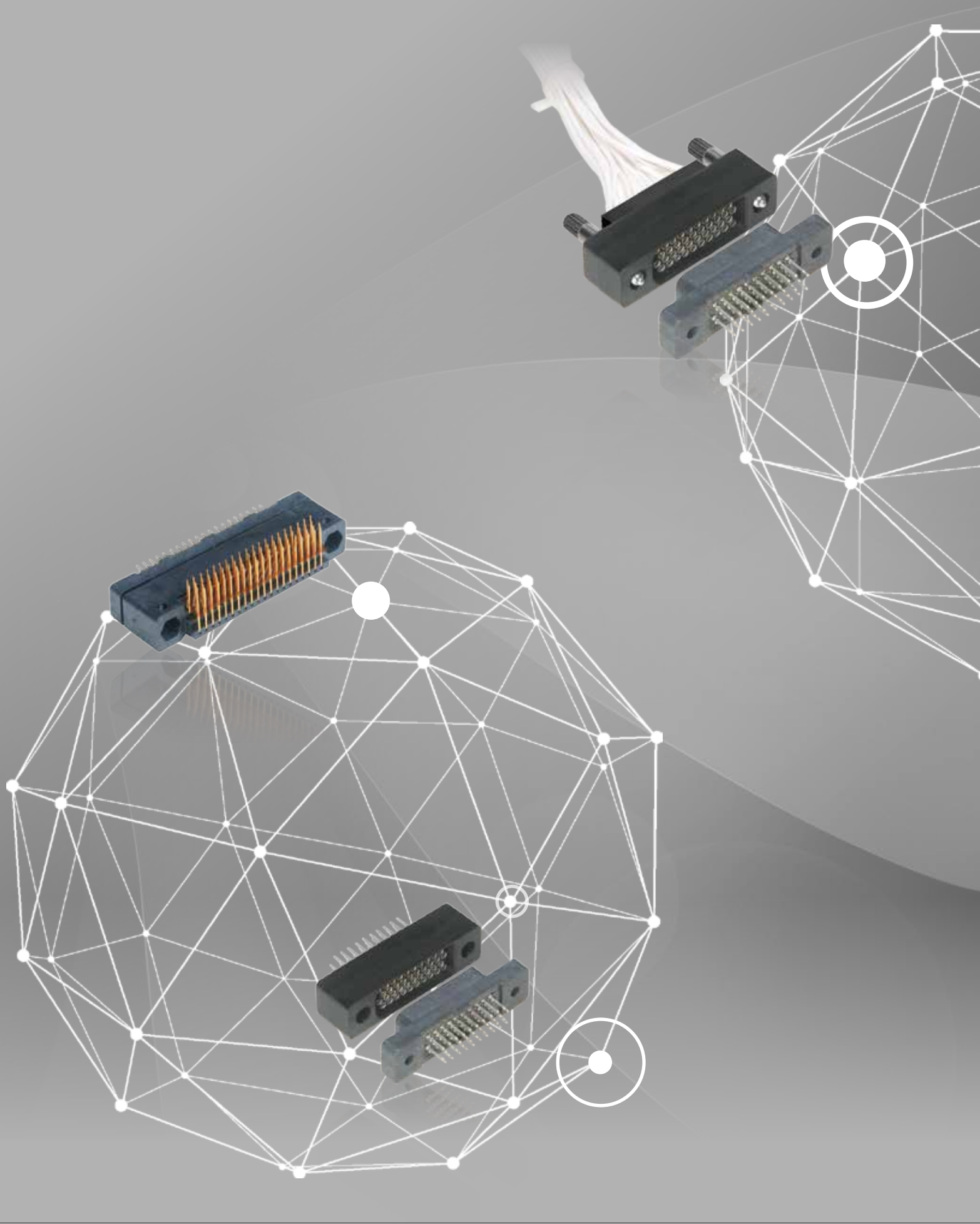
3. Total number of contacts

132	
150	1 cavity
154*	
264	2 cavities
300	
396	3 cavities
450	

6. Tail finish

Blank	Standard
LF	Lead free plating RoHS connector

*154 contacts version is not compatible with YC and YP version



HDB³/HSB³: High density brush connector



Table of contents

HDB³/HSB³ SERIES	65
General characteristics	66
Connector types	68
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Typical arrangements & layouts HDB ³	71
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Typical arrangements & layouts HSB ³	74
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HDB³ HSB³ SERIES SERVES VARIOUS MARKETS, INCLUDING:



Military Aerospace



Commercial Aerospace



C4ISR



Navy



Railway

GENERAL CHARACTERISTICS - HDB³/HSB³

High-density brush connector

- Brush contact technology
- High density contact pattern
- Less board space
- Shorter mated height
- Durability and performance of Brush contacts
- Low cost



Main features

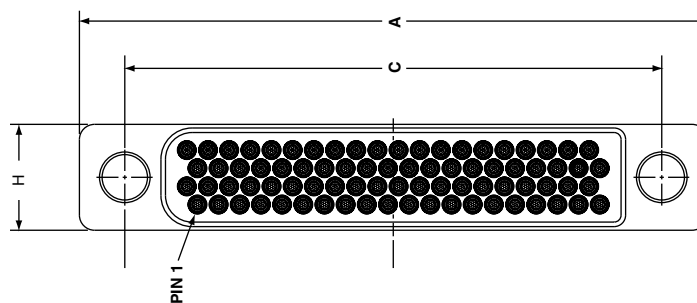
- High density
- Low mated height
- Low mating force
- B³ brush contact

Recommended configurations

Motherboard to daughterboard / Mezzanine/stacker / Board to cables



Overall dimensions



	4 Rows
H	8,89 [0.350]
C	27,05 _{MIN} to 80,64 _{MAX} [1.075 to 3.175]
A	34,04 _{MIN} to 88,27 _{MAX} [1.375 to 3.475]

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

GENERAL CHARACTERISTICS - HDB³/HSB³

TYPE OF CONTACTS

- Low level signal contacts 2A / DWV 750V

TERMINATION TYPES

- Straight PC tail
- Right angle PC tail
- Crimp

CONNECTOR TYPES

- Motherboard HDB-M4
- Daughterboard HDB-D4
- Input / Output HDB-D4C
- Stacker HDB-D4S
- High-speed mother board HSB-M4
- High-speed daughter board HSB-D4

CONTACT DENSITY

- High density: 1,72 x 1,52 [.070x.060] staggered grid pattern

NUMBER OF ROWS

- 4 rows

ARRANGEMENTS

- 40 to 160 signal contacts
- Differential pairs arrangement available

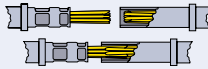
BRUSH CONTACT

Multiple contact interfaces

- Strands of high tensile wire are bundled together to form brush-like contacts
- By intermeshing two multi-strand wire bundles, an electrical connection is made

Redundant current paths: 14-70 (points of contact) per mated contact with a gas tight junction

Smooth interface: low friction



MATERIALS

- Hood: copper alloy
- Wire: beryllium copper
- Sleeves: passivated stainless steel
- Plastic insert: Liquid crystal polymer, 30% glass filled

PLATING

- Brush wire: gold over nickel
- Brush hood: gold or tin-lead or pure tin (RoHS)

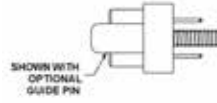
Technical specifications

Mechanical characteristics	HDB ³ /HSB ³
Mating force per contact (N)	0.4
Unmating force per contact (N)	0.4
Durability cycles	100,000
Sinusoidal vibrations (10 to 2000 Hz) micro discontinuity 10ns	IAW MIL-STD-1344 method 2005, test condition V, letter H, 4 hours per axis
Shocks 6ms ½ sinus 2ns	IAW MIL-STD-1344 method 2004, test condition G
Environmental characteristics	
Thermal shocks (°C)	-65° to 125°C
Salt Spray (hours)	48
Humidity	IAW MIL-STD-1344 method 1002, type II
Temperature (°C)	-65° to 125°C
Electrical characteristics	
Current rating per contact (A)	2 A
Hot swap	1 _{MAX}
Insulation resistance (at 500Vdc) (GΩ)	5 _{MIN}
Contact resistance (mΩ)	20
Dielectric Withstanding Voltage (Vrms, 60Hz, AC)	
At sea level	750
70 000 feet elevation	250
Data rate HSB3 (Gbps)	Capable of 3,125

CONNECTOR TYPES

Mother board

- Straight PC tail
- Mates with daughter board or Input / Output or Stacker connector

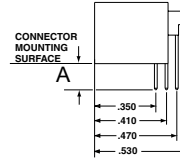


HDB-M4 *** * * * X



Daughter board

- Right angle PC tail
- Mates with mother board connector

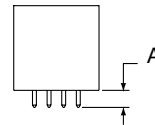


HDB-D4 *** * * * X



Stacker

- Straight PC tail
- Mates with mother board connector



HDB-D4S *** * * 2 X



Input/Output

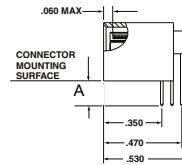
- Crimping on wire
- Wire well size 22D
- Mates with mother board connector

HDB-D4C *** * 2



High speed mother board

- Straight PC tail
- Mates with high speed daughter board connector

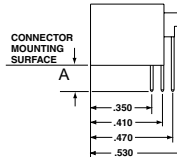


HSB-M4 ** D * * * * X



High speed daughter board

- Right angle PC tail
- Mates with high speed mother board connector



HSB-D4 ** D * * * * X



Contact type	A ±0,5[±.020]	Termination section ±0,05[±.002]	Termination plating	Brush wire plating
H*B-M4 *** * 22 * X	[.120]	Ø [.016]	H*B-*** * * * * 2 X: [.030] µin gold over [.050] nickel H*B-*** * * * * 5 X [.010] µin matte tin over [.010] µin nickel H*B-*** * * * * 6 X [.010] µin tin lead over [.010] µin copper	H*B-*** * * * M * * * X: [.050] µin gold over nickel H*B-*** * * * C * * * X [.020] µin gold over nickel
H*B-M4 *** * 23 * X	[.150]			
H*B-M4 *** * 24 * X	[.180]			
H*B-M4 *** * 26 * X	[.240]			
H*B-M4 *** * 28 * X	[.300]			
H*B-D4 *** * 01 * X	[.090]			
H*B-D4 *** * 02 * X	[.120]			
H*B-D4 *** * 03 * X	[.150]			
H*B-D4 *** * 04 * X	[.180]	NA		
H*B-D4 *** * 06 * X	[.300]			
HDB-D4C *** * 2	NA			
HDB-D4S *** * 22 2 X	[.120]			
HDB-D4S *** * 23 2 X	[.150]			
HDB-D4S *** * 24 2 X	[.180]			
HDB-D4S *** * 28 2 X	[.300]			
		Ø [.016]		

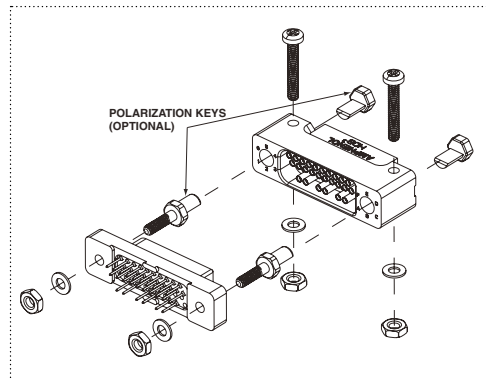
All dimensions are given for information only and are in [inch], except as otherwise specified

KEYING / GUIDING / MOUNTING

Optional polarizing keys - D-shaped

Mother board side

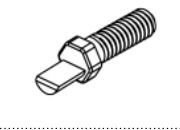
- 2 polarization key per connector
- 6 positions
- 36 keying possibilities per mated pair
- 3 sizes (6,35 [.25]; 12,7 [.50]; 19,05 [.75])
- Have to be ordered separately



HDB-508803-001

HDB-508803-002

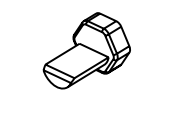
HDB-508803-003



Daughter board side

- 2 polarization key per connector
- 6 positions
- 36 keying possibilities per mated pair
- Have to be ordered separately

HDB-508804-000



Optional guide pins

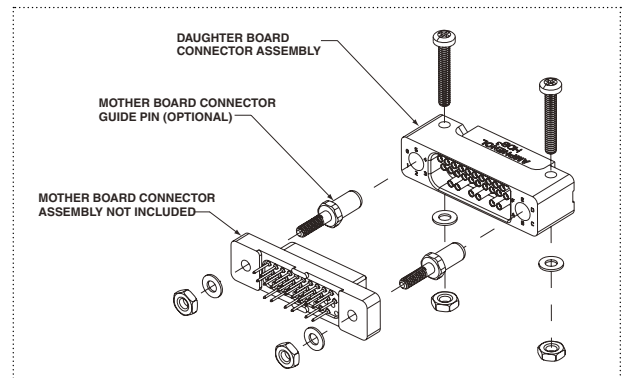
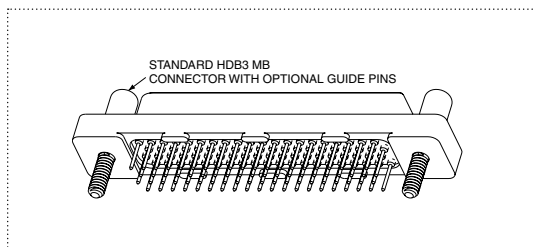
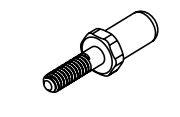
Mother board side

- 2 optional guide pins providing additional alignment
- Radial misalignment: correcting up to a 0,51 [.02]
- Angular misalignment: mating with up to 2° initial
- Directly mated with the daughter board or mated with low profile mounting nut
- 3 sizes (6,35 [.25]; 12,7 [.50]; 19,05 [.75])
- Have to be ordered separately

HDB-508802-001

HDB-508802-002

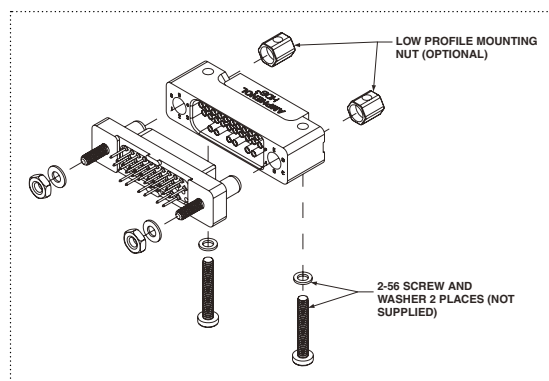
HDB-508802-003



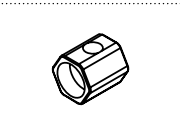
Optional low profile mounting nut

Daughter board side

- 2 nuts per connector
- For low profile mounting
- Have to be ordered separately



HDB-508804-001



All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

LOCKING

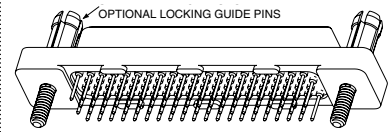
Mother board side: optional locking guide pins

- 2 locking guide pins per connector
- The pin directly mate to the hole localized on the mated side
- 3 sizes (6,35 [.25]; 12,7 [.50]; 19,05 [.75])
- Have to be ordered separately

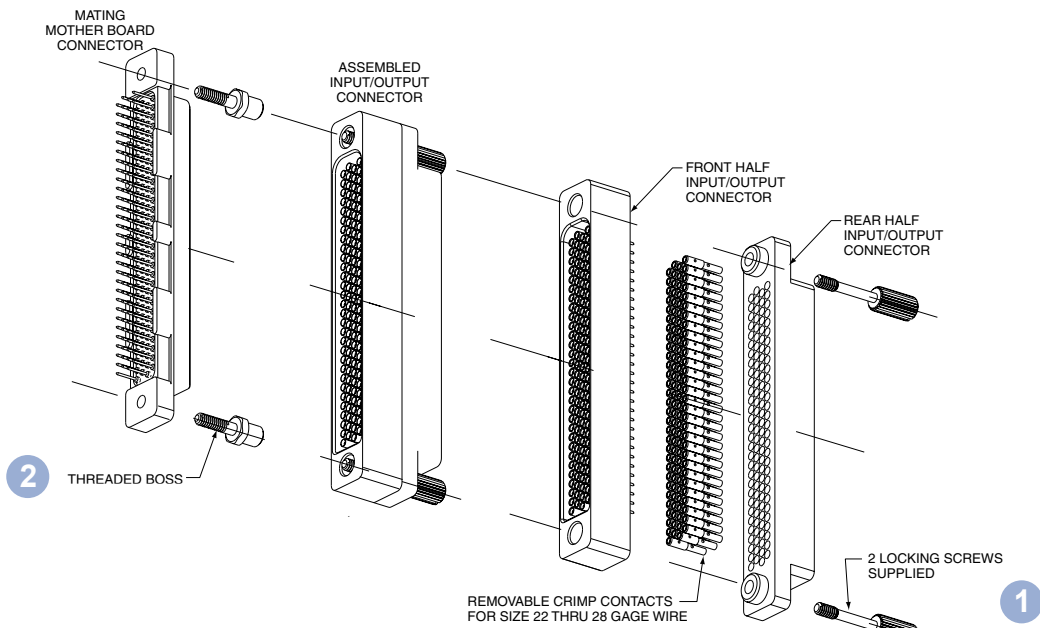
HDB-508808-020

HDB-508808-021

HDB-508808-022



I/O Connector locked to mother board connector



1

I/O side

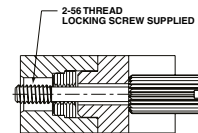
- 2 jackscrews per connector
- Mate to threaded boss for mother board
- Locking screws supplied with I/O connector

2

Mother board side

- 2 threaded boss per connector
- Required with mother board only when mating to I/O connector
- Mate to I/O jackscrews
- 3 sizes (6,35 [.25]; 12,7 [.50]; 19,05 [.75])
- Have to be ordered separately

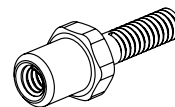
Supplied with I/O connector



HDB-508808-001

HDB-508808-002

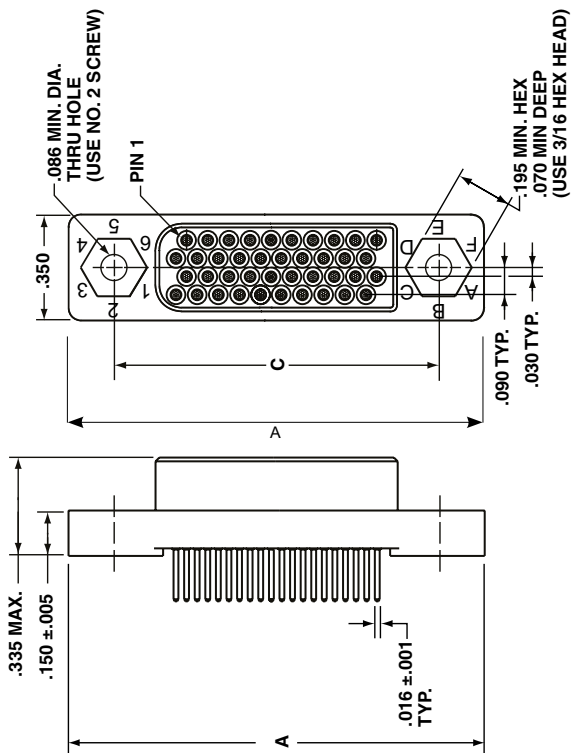
HDB-508808-003



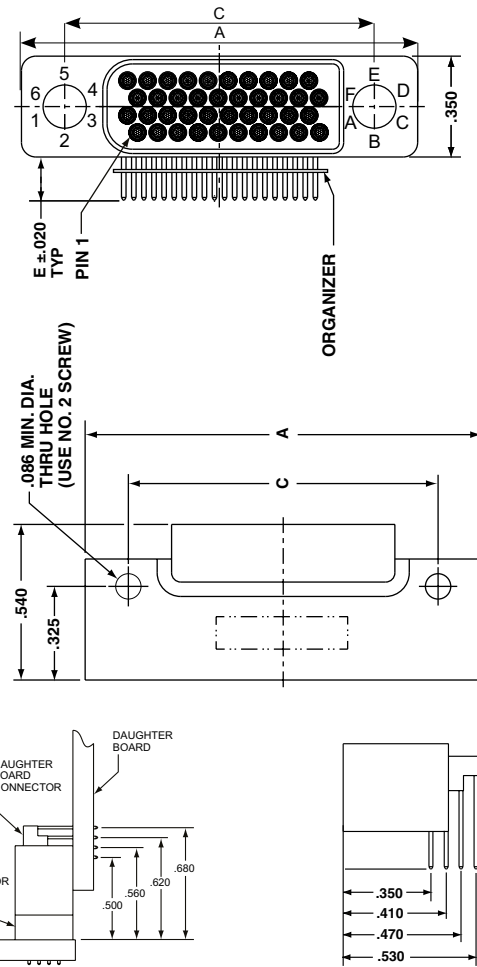
All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

TYPICAL ARRANGEMENTS

Mother board
Straight PC tail

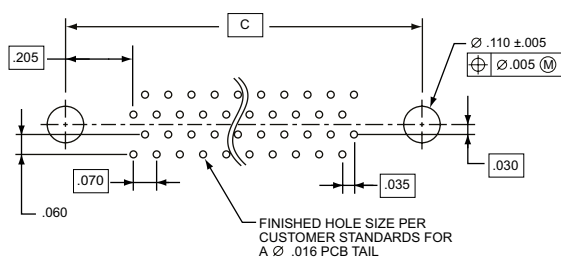


Daughter board
Right angle PC tail

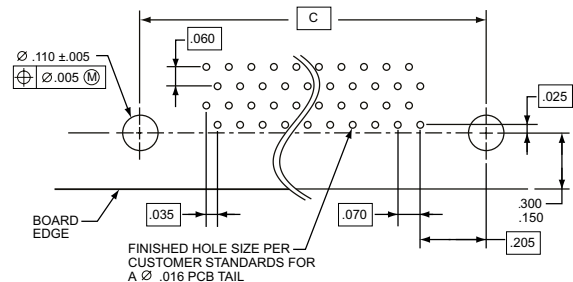


LAYOUTS

Mother board
Straight PC tail



Daughter board
Right angle PC tail

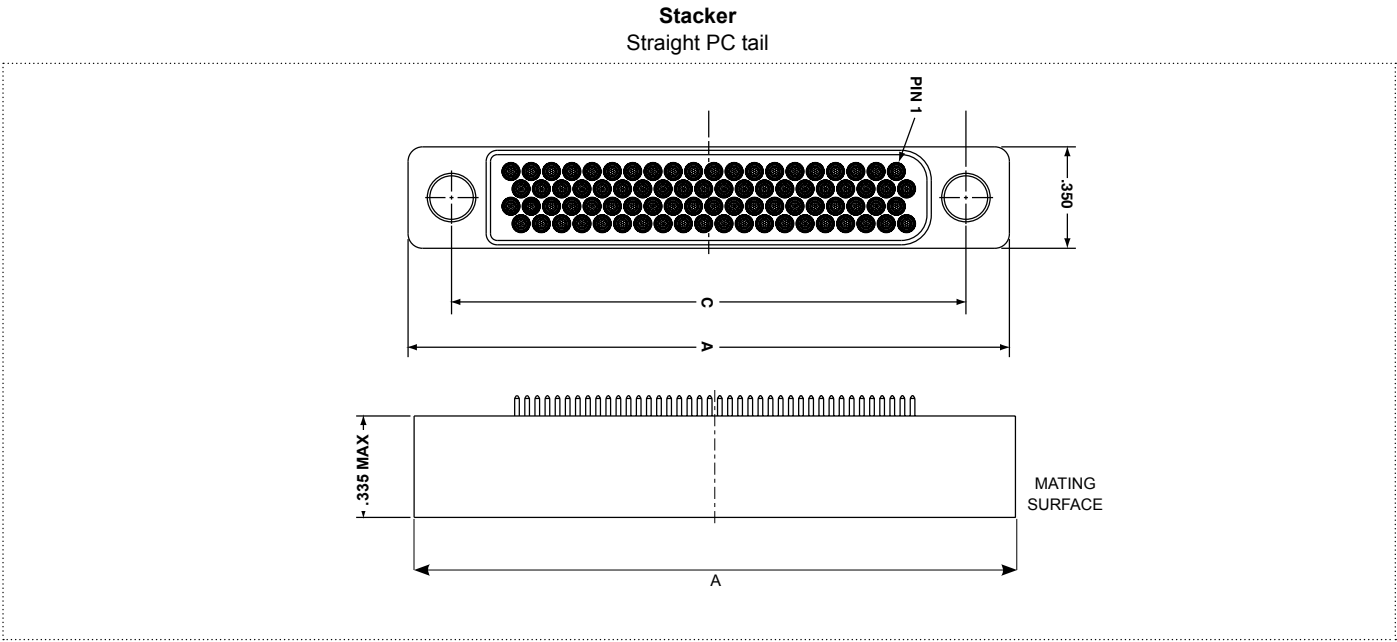
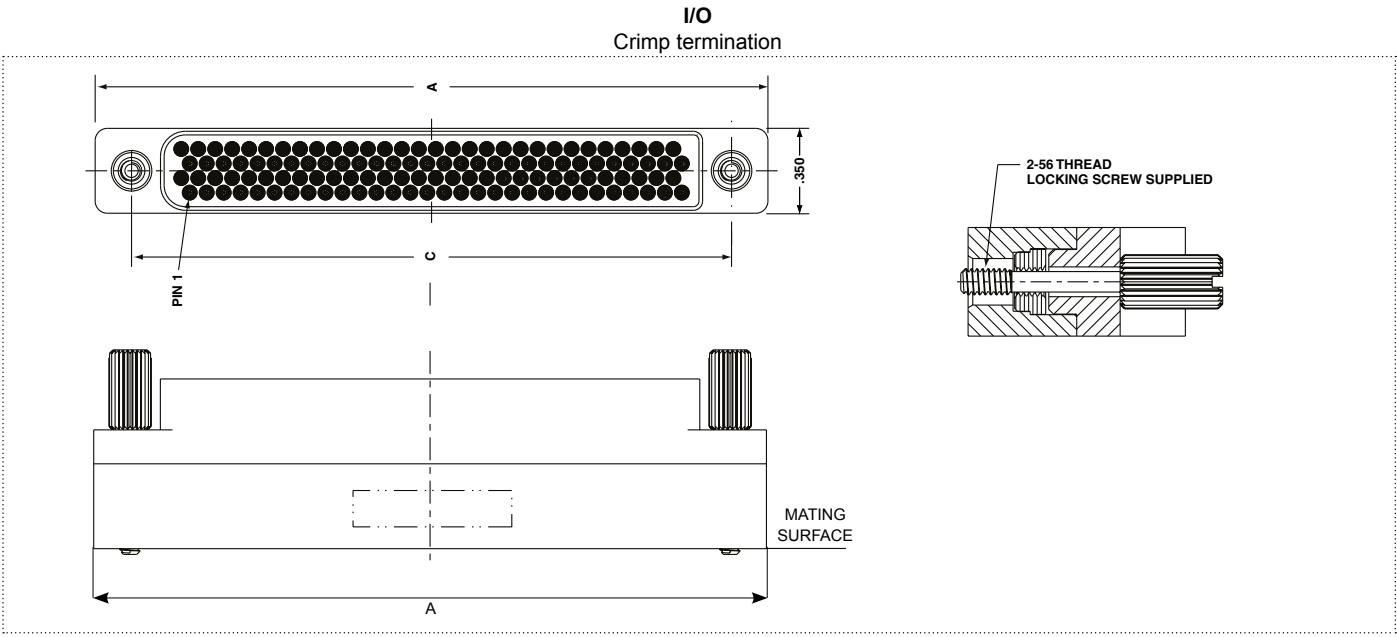


Number of contacts	40	60	80	120	160
A	34,93[1.38]	43,82[1.73]	52,71[2.08]	70,49[2.78]	88,27[3.48]
C	27,31[1.08]	36,2[1.43]	45,09[1.78]	62,87[2.48]	80,65[3.18]

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

TYPICAL ARRANGEMENTS

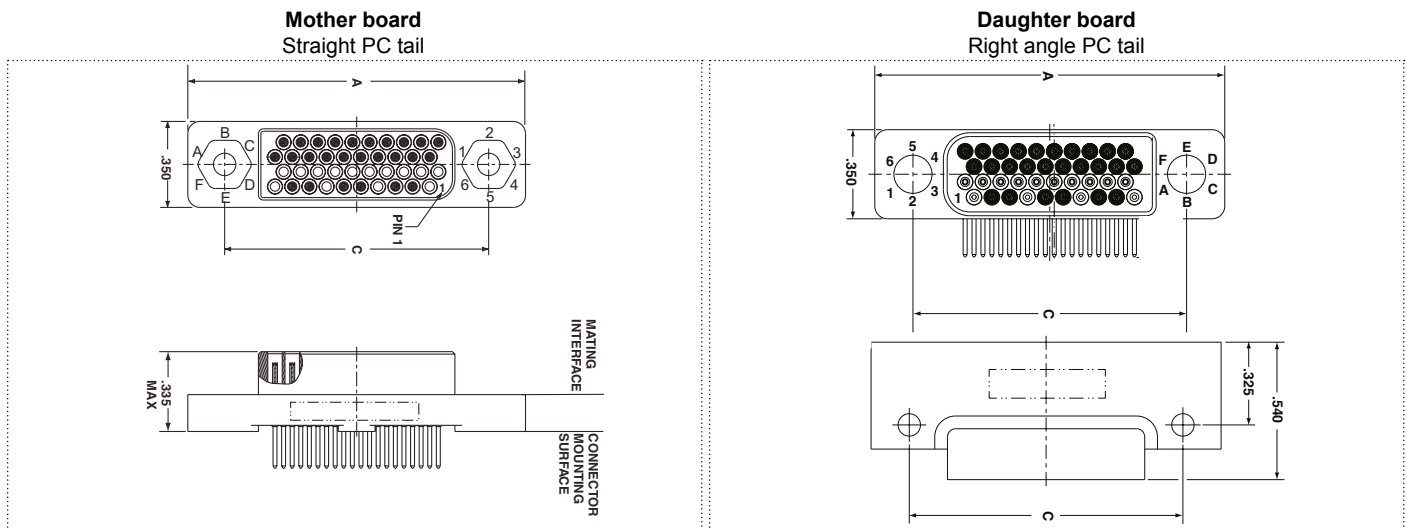
HDAS
SMASH
HDB³/HSB³
RVPX
R-SATA
127/HE8



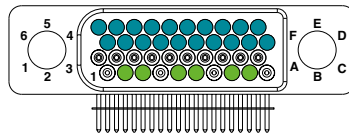
Number of contacts	40	60	80	120	160
A	34,93[1.38]	43,82[1.73]	52,71[2.08]	70,49[2.78]	88,27[3.48]
C	27,31[1.08]	36,2[1.43]	45,09[1.78]	62,87[2.48]	80,65[3.18]

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

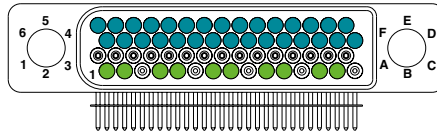
TYPICAL ARRANGEMENTS - HSB³



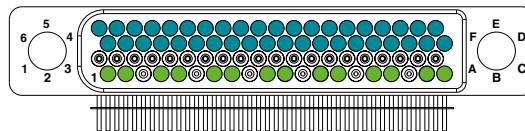
40 Pin Body with 3 Differential Pairs
20 Contacts



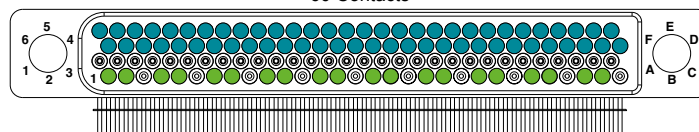
60 Pin Body with 5 Differential Pairs
30 Contacts



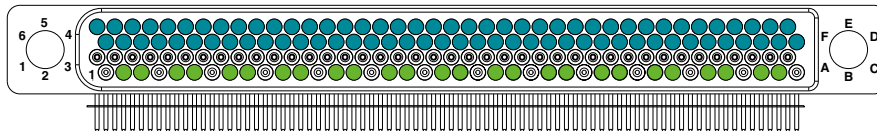
80 Pin Body with 7 Differential Pairs
40 Contacts



120 Pin Body with 10 Differential Pairs
60 Contacts



160 Pin Body with 13 Differential Pairs
80 Contacts



Number of contacts	40	60	80	120	160
A	34,93[1.38]	43,82[1.73]	52,71[2.08]	70,49[2.78]	88,27[3.48]
C	27,31[1.08]	36,2[1.43]	45,09[1.78]	62,87[2.48]	80,65[3.18]

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

127/HE8	R-SATA	R-VPX	HDB ³ /HSB ³	SMASH	HDAS
---------	--------	-------	------------------------------------	-------	------

HOW TO ORDER - HIGH DENSITY HDB³

MOTHER BOARD CONNECTOR

1.	2.	3.	4.	5.	6.
Series	Number of contacts	Brush wire plating	Termination style	Tail finish	Less hardware
HDB-M4	-040	M	24	2	X

2. Number of contacts

040
060
080
120
160

3. Brush wire plating

M	0.000050 Au Min. thick over Nickel
C	0.000020 Au Min. thick over Nickel

4. Termination style

22	PCB, Straight, .016 Dia, 0.120 stickout
23	PCB, Straight, .016 Dia, 0.150 stickout
24	PCB, Straight, .016 Dia, 0.180 stickout
26	PCB, Straight, .016 Dia, 0.240 stickout
28	PCB, Straight, .016 Dia, 0.300 stickout

5. Tail finish

2	Gold over Nickel ✓
5	Matte Tin over Nickel ✓
6	Tin-Lead over Copper

6. Hardware

X	Less Hardware, hardware is purchased separately
---	---

DAUGHTER BOARD CONNECTOR

1.	2.	3.	4.	5.	6.
Series	Number of contacts	Brush wire plating	Termination	Tail finish	Less hardware
HDB-D4	-040	M	01	2	X

2. Number of contacts

040
060
080
120
160

3. Brush wire plating

M	0.000050 Au Min. thick over Nickel
C	0.000020 Au Min. thick over Nickel

4. Termination style

01	PCB, Straight, .016 Dia, 0.090 stickout
02	PCB, Straight, .016 Dia, 0.120 stickout
03	PCB, Straight, .016 Dia, 0.150 stickout
04	PCB, Straight, .016 Dia, 0.180 stickout
06	PCB, Straight, .016 Dia, 0.300 stickout

5. Tail finish

2	Gold over Nickel ✓
5	Matte Tin over Nickel ✓
6	Tin-Lead over Copper

6. Hardware

X	Less Hardware, hardware is purchased separately
---	---

✓ : RoHS compliant

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

HOW TO ORDER - HIGH DENSITY HDB³

I/O CONNECTOR

1.	2.	3.	4.
Series	Number of contacts	Brush wire plating	Tail finish
HDB-D4C	-120	C	2

2. Number of contacts

040

060

080

120

160

4. Tail finish

2

Gold over Nickel ✓

3. Brush wire plating

M

0.000050 Au Min. thick over Nickel

C

0.000020 Au Min. thick over Nickel

STACKER CONNECTOR

1.	2.	3.	4.	5.	6.
Series	Number of contacts	Brush wire plating	Termination style	Tail finish	Less hardware
HDB-D4S	120	C	22	2	X

2. Number of contacts

040

060

080

120

160

4. Termination style

22

PCB, Straight, .016 Dia, 0.100 stickout

23

PCB, Straight, .016 Dia, 0.130 stickout

24

PCB, Straight, .016 Dia, 0.160 stickout

28

PCB, Straight, .016 Dia, 0.280 stickout

3. Brush wire plating

M

0.000050 Au Min. thick over Nickel

C

0.000020 Au Min. thick over Nickel

5. Tail finish

2

Gold over Nickel ✓

6. Hardware

X

Less Hardware, hardware is purchased separately

✓: RoHS compliant

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

HOW TO ORDER - HIGH DENSITY HSB³

HSB³ HIGH SPEED - MOTHER BOARD

1.	2.	3.	4.	5.	6.	7.
Series	Number of differential pairs	Differential signal	Brush wire plating	Termination style	Tail finish	Less hardware
HSB-M4	-03	D	M	24	2	X

2. Number of differential pairs

Number Diff Pairs	No. Low Speed Signals
03	20
05	30
07	40
10	60
13	80

3. Differential signal

D	Standard
---	----------

4. Brush wire plating

M	0.000050 Au Min. thick over Nickel
C	0.000020 Au Min. thick over Nickel

5. Termination style

22	PCB, Straight, .016 Dia, 0.120 stickout
23	PCB, Straight, .016 Dia, 0.150 stickout
24	PCB, Straight, .016 Dia, 0.180 stickout
26	PCB, Straight, .016 Dia, 0.240 stickout
28	PCB, Straight, .016 Dia, 0.300 stickout

6. Tail finish

2	Gold over Nickel ✓
5	Matte Tin over Nickel ✓
6	Tin-Lead over Copper

7. Hardware

X	Less Hardware, hardware is purchased separately
---	---

HSB³ HIGH SPEED - DAUGHTER BOARD

1.	2.	3.	4.	5.	6.	7.
Series	Number of differential pairs	Differential signal	Brush wire plating	Termination style	Tail finish	Less hardware
HSB-D4	-03	D	M	02	2	X

2. Number of differential pairs

Number Diff Pairs	No. Low Speed Signals
03	20
05	30
07	40
10	60
13	80

3. Differential signal

D	Standard
---	----------

4. Brush wire plating

M	0.000050 Au Min. thick over Nickel
C	0.000020 Au Min. thick over Nickel

5. Termination style

01	PCB, Straight, .016 Dia, 0.090 stickout
02	PCB, Straight, .016 Dia, 0.120 stickout
03	PCB, Straight, .016 Dia, 0.150 stickout
04	PCB, Straight, .016 Dia, 0.180 stickout
06	PCB, Straight, .016 Dia, 0.300 stickout

6. Tail finish

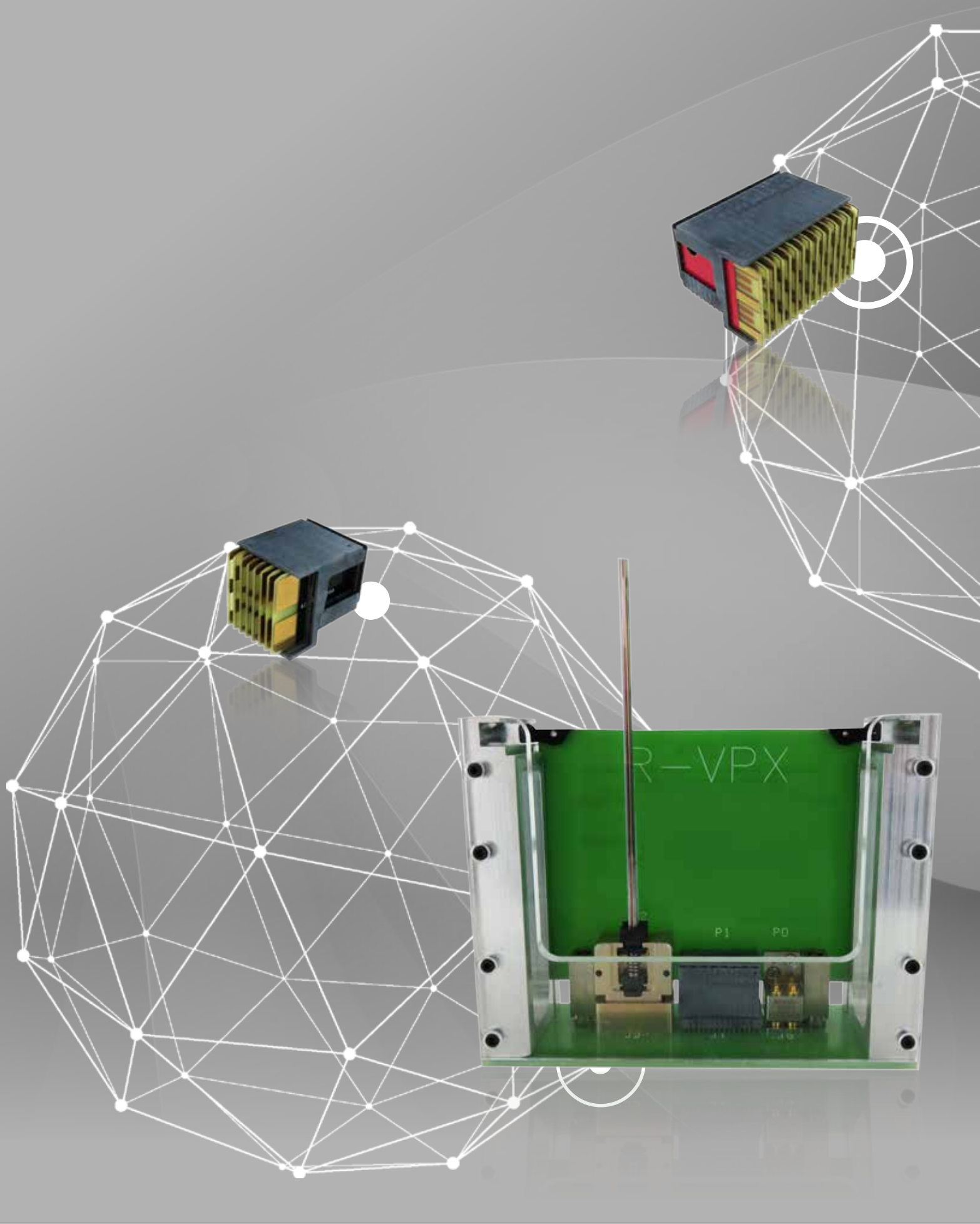
2	Gold over Nickel ✓
5	Matte Tin over Nickel ✓
6	Tin-Lead over Copper

7. Hardware

X	Less Hardware, hardware is purchased separately
---	---

✓: RoHS compliant

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch



R-VPX: Ruggedized VITA 46

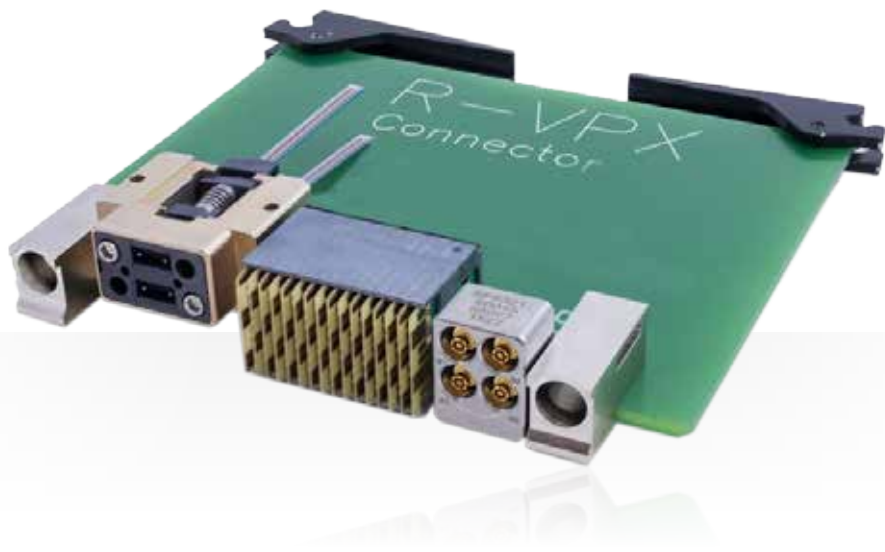


Table of contents

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Typical arrangements daughter card	85
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R-VPX SERIES SERVES VARIOUS MARKETS, INCLUDING:



Military Aerospace



Commercial Aerospace



C4ISR



Space



Missile

All dimensions are given for information only and are in inch, except as otherwise specified | *in mm: 1mm=0.03937 inch

GENERAL CHARACTERISTICS - R-VPX

Ruggedized VITA 46

- Ruggedized high-speed board-to-board interconnect system
- Data rates exceeding 10 Gb/s*
- Meeting and exceeding VITA 46 standard
- Modularity and flexibility
- To be utilized in open architecture embedded computing systems
- 3U and 6U VPX slot profiles
- 16 Gb/s* evolution module

COMING
SOON

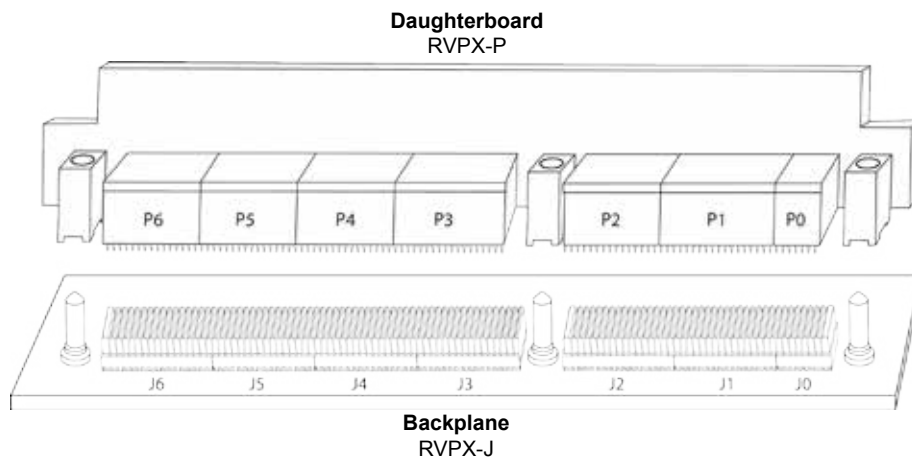
Main features

- Cost-effective series
- Modular COTS lightweight system (Commercial Off-The-Shelf)
- Low mating force
- Pin-less backplane
- Can be combined with high power modules, RF Modules (VITA 67) and optical modules (VITA 66)

Daughterboard to backplane connection



Concept



GENERAL CHARACTERISTICS - R-VPX

STANDARD / APPROVALS

- Qualified to VITA 46 for Open VPX applications
- Fully intermountable & intermateable to existing VITA 46 connectors
- Meets and exceeds VITA 47 performance requirements
- Supports Ethernet, Fiber Channel, InfiniBand and other protocols

PCB WAFER

- Multiple contact interfaces
- PCB wafer construction with customized wafer-loading patterns

INSERT TYPES

- Differential
- Single-ended
- Power
- Standard VITA 46 P0

CONTACT DENSITY

- Up to 140 signals per inch
- Supports .8 inch card slot pitches
- 1,8 [.039] square grid

MATERIALS

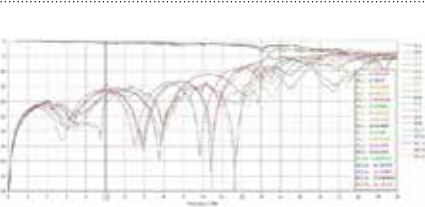
- Contacts: copper alloy
- Housings: thermoplastic
- Guide Hardware: aluminum or passivated stainless steel

PLATING

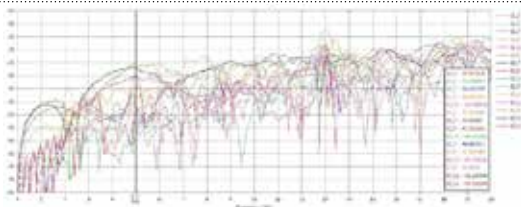
- Contacts: 50µin Au over 50 µin Ni in mating area (M) or 30 µin Au (C)

R-VPX data rate

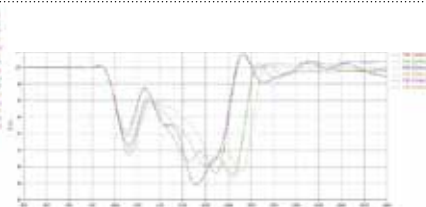
Differential insertion and return loss



Differential near-end crosstalk



Differential impedance



Technical specifications

Mechanical characteristics	ANSI VITA 46	
Shocks	MIL-STD-1344A, Method 2004.1 Test condition A	
Random vibration 1	1,5 hours/axis	MIL-STD-1344A, method 2005.1 Test condition V, letter D
Random vibration 2	0.125, 0.15, 0.175 g²/Hz for 15 min. each 0.2 g²/Hz for 45 min.	HALT / step stress
Bench Handling	MIL-STD-810F, method 516.5 Procedure VI	
Vibration / temperature	1,5 hours/axis with temperature cycle from -40°C to +100°C with 30 min. dwell and 15 min. ramps	MIL-STD-1344A, method 2005.1 Test condition V, letter D
Durability with misalignment	500 mate / unmate cycles	EIA-364-09
Insertion / Extraction force	MIL-STD-1344A, method 2013.1	
Environmental characteristics		
Temperature (°C)	-55 / +105	
Salt Spray + S02 (hours)	48	ASTM G85, Annex A4
Humidity	240 hours	MIL-STD-1344A, method 1002.2, type III
Dust	MIL-STD-810F, method 510.4, procedure I	
Sand	MIL-STD-810F, method 510.4, procedure II	
Electrical characteristics		
Current rating per contact (A)	1,5	
Electrostatic discharge	EN61000-4-2	
Current overload	IEC 60512-3	

All dimensions are given for information only and are in inch, except as otherwise specified | *in mm: 1mm=0.03937 inch

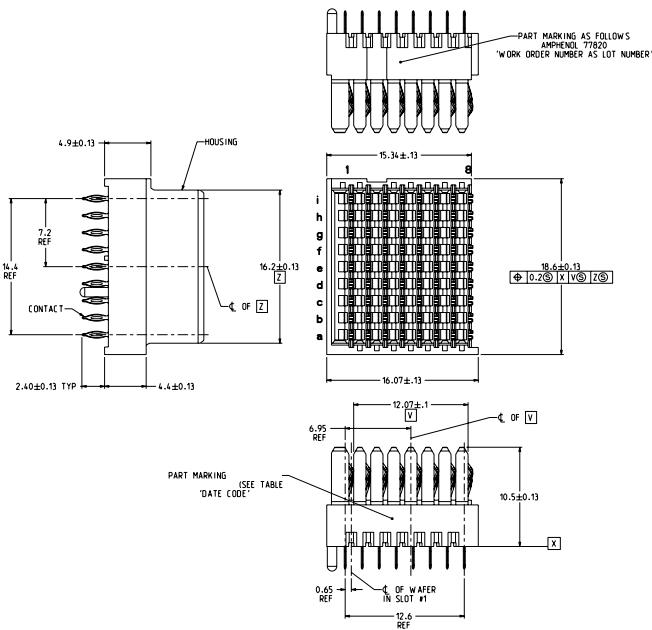
TYPICAL ARRANGEMENTS - BACKPLANE

8 position insert - End

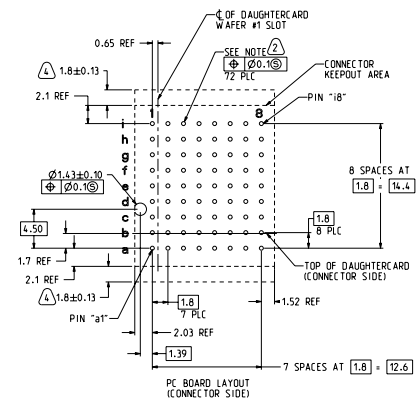
RVPX-J08E**

Plating thickness and material			
Part number	Gold in contact area	Compliant	Nickel overall
RVPX-J08EM1	50 µ inch min	50 µ inch tin	50 µ inch tin
RVPX-J08EM2	50 µ inch min	50 µ inch tin-lead	50 µ inch tin
RVPX-J08EC1	30 µ inch min	50 µ inch tin	50 µ inch tin
RVPX-J08EC2	30 µ inch min	50 µ inch tin-lead	50 µ inch tin

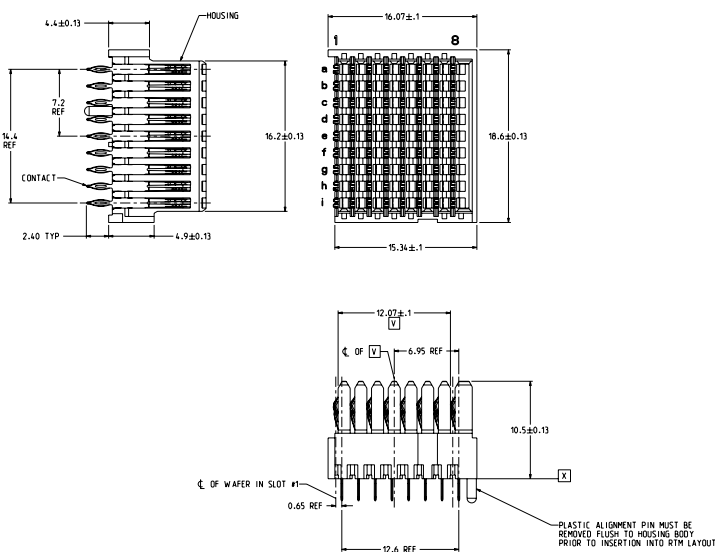
Arrangement



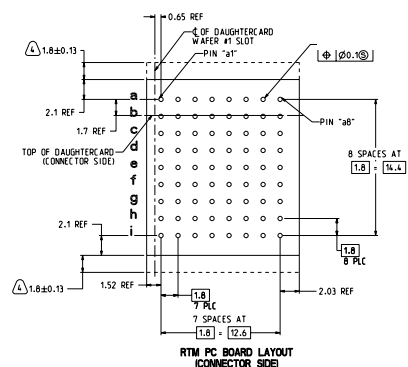
Layout



Arrangement



Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

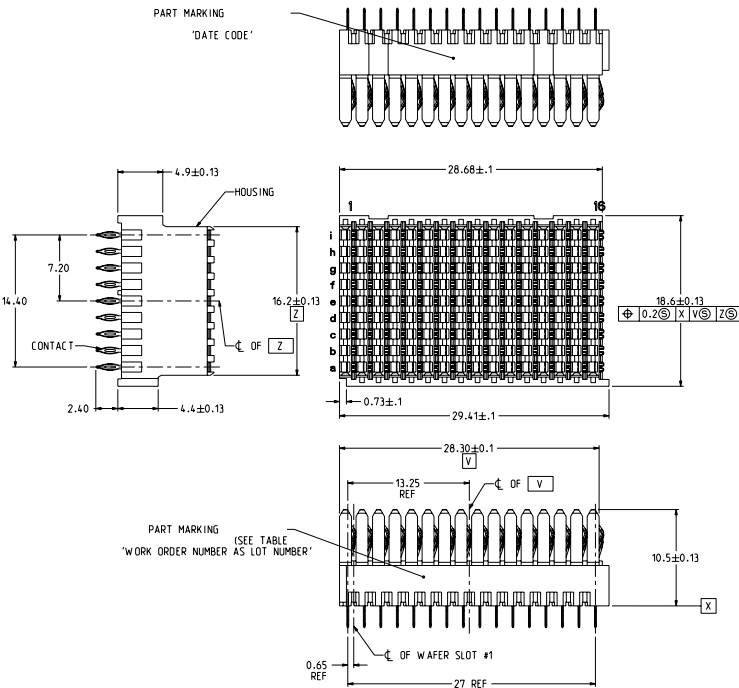
TYPICAL ARRANGEMENTS - BACKPLANE

16 position insert - Middle

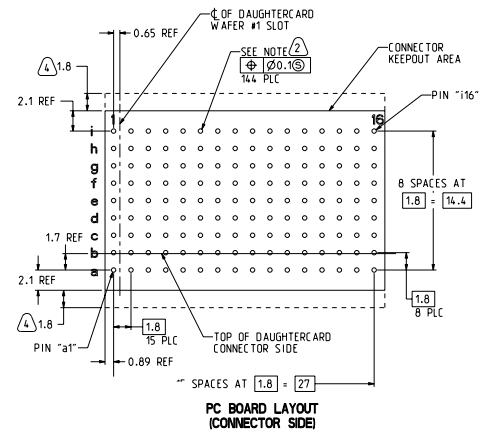
RVPX-J16M**

Plating thickness and material			
Part number	Gold in contact area	Compliant	Nickel overall
RVPX-J16MM1	50 µ inch min	50 µ inch min tin	50 µ inch min
RVPX-J16MM2	50 µ inch min	50 µ inch min tin-lead	50 µ inch min
RVPX-J16MC1	30 µ inch min	50 µ inch min tin	50 µ inch min
RVPX-J16MC2	30 µ inch min	50 µ inch min tin-lead	50 µ inch min

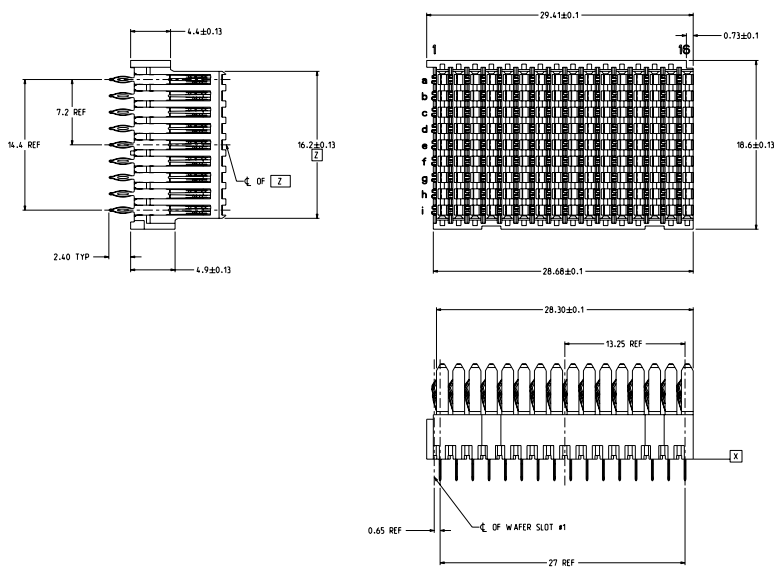
Arrangement



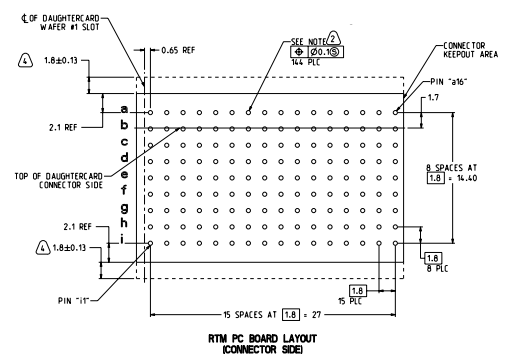
Layout



Arrangement

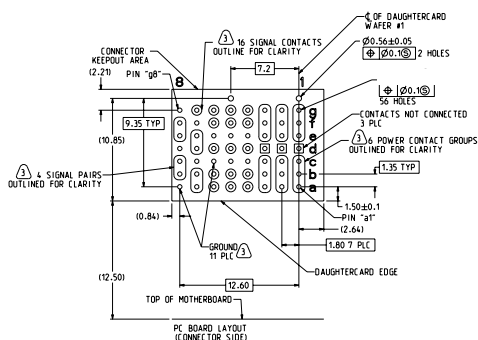


Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

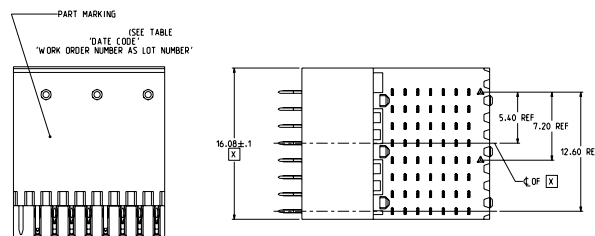
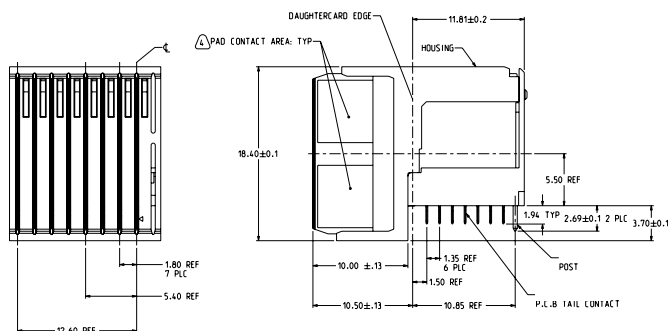
RVPX-P08V*



Typical interconnections for column (wafer): 1, 2, 3		
Contact usage	Daughtercard connector pin	Backplane connector pin
Power	ax. bx. cx.	ax. bx. cx. dx
Power	ex. fx. gx.	fx. gx. hx. ix.
Not connected	dx	ex

Note: "x" designates the column number

Layout

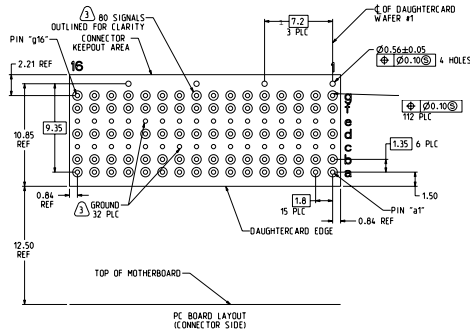


All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

TYPICAL ARRANGEMENTS - DAUGHTER CARD

Single - ended

RVPX-P16S*



Plating thickness and material

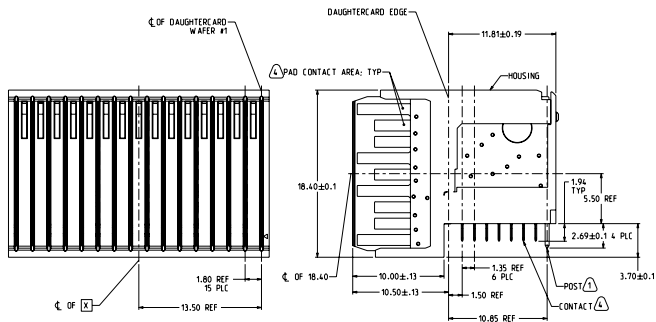
Part number	Gold in contact area	Compliant	Nickel overall
RVPX-P16SM1	50 µ inch min	50 µ inch min tin	50 µ inch min
RVPX-P16SM2	50 µ inch min	50 µ inch min tin-lead	50 µ inch min
RVPX-P16SC1	30 µ inch min	50 µ inch min tin	50 µ inch min
RVPX-P16SC2	30 µ inch min	50 µ inch min tin-lead	50 µ inch min

Typical interconnections for column (wafer): 1-16

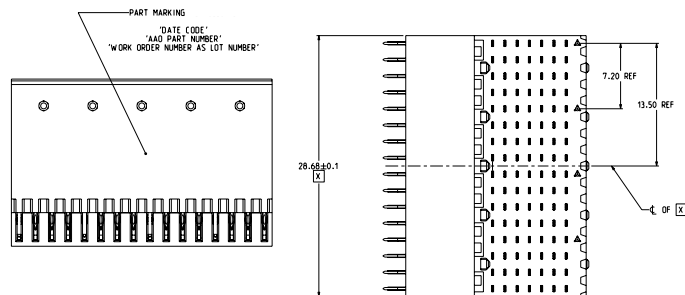
Contact usage	Daughtercard connector pin	Backplane connector pin
Signal	ax	bx
Signal	bx	cx
Signal	dx	ex
Signal	fx	gx
Signal	gx	hx
Grounds	cx, ex (all commoned)	ax, dx, fx, ix

Note: "x" designates the column number

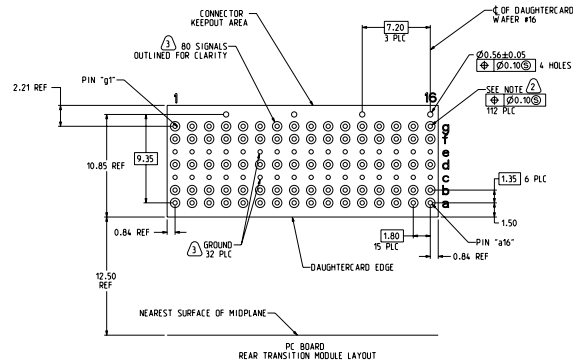
Arrangement



Layout



Rear transition module application

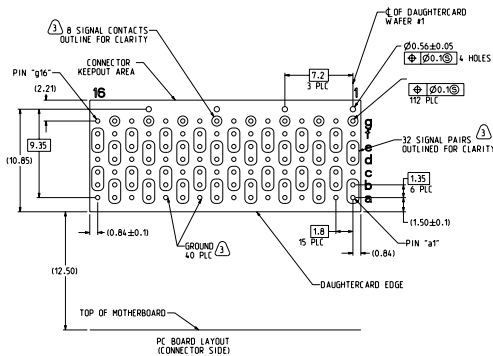


All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

TYPICAL ARRANGEMENTS - DAUGHTER CARD

Differential

RVPX-P16D**



Plating thickness and material			
Part number	Gold in contact area	Compliant	Nickel overall
RVPX-P16DM1	50 μ inch min	50 μ inch min tin	50 μ inch min
RVPX-P16DM2	50 μ inch min	50 μ inch min tin-lead	50 μ inch min
RVPX-P16DC1	30 μ inch min	50 μ inch min tin	50 μ inch min
RVPX-P16DC2	30 μ inch min	50 μ inch min tin-lead	50 μ inch min

Typical interconnections for column (wafer): 2, 4, 6, 8, 10, 12, 14, 16

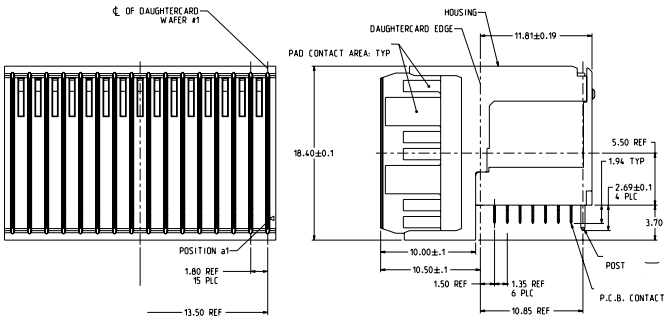
Contact usage	Daughtercard connector pin	Backplane connector pin
Signal pair	bx	cx
	cx	dx
Signal pair	ex	gx
	fx	hx
Grounds	ax. dx. gx. (all commoned)	ax. bx. ex. fx. ix.

Typical interconnections for column (wafer): 1, 3, 5, 7, 9, 11, 13, 15

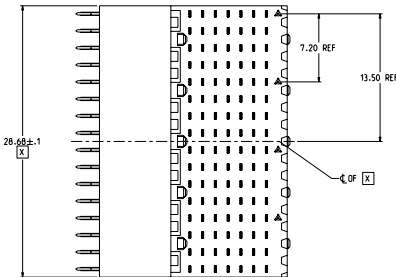
Contact usage	Daughtercard connector pin	Backplane connector pin
Signal pair	ax	ax
	bx	bx
Signal pair	dx	ex
	ex	fx
Signal	gx	ix
Grounds	cx. fx. (all commoned)	cx. dx. gx. hx.

Note: "x" designates the column number

Arrangement



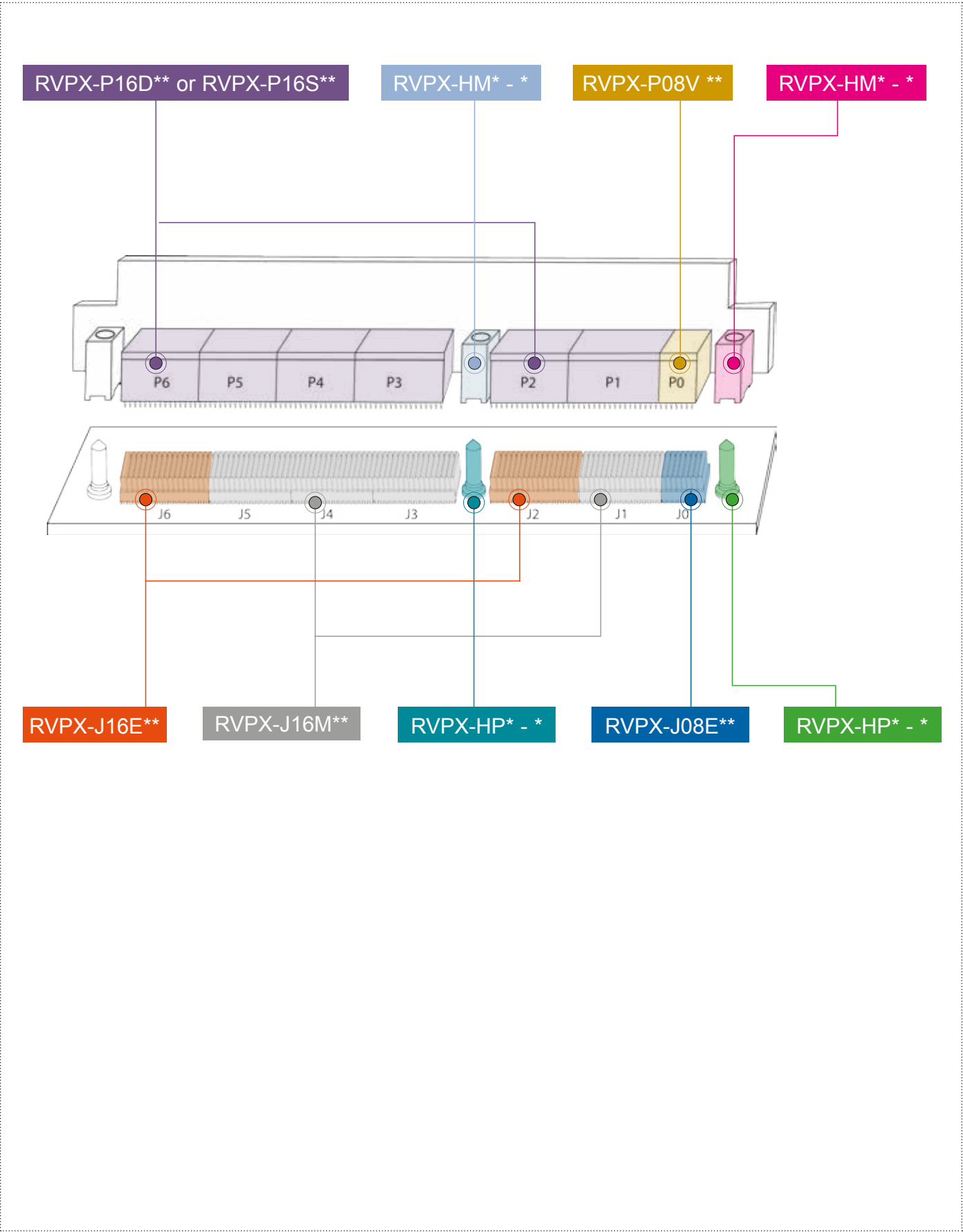
Layout



All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

HOW TO ORDER - R-VPX

HDAS
SMASH
HDB/HSB
R-VPX
R-SATA
127/HE8



HOW TO ORDER - R-VPX

BACKPLANE

1.	2.	3.	4.	5.	6.
Series	Connector type	Insert size	Insert type	Gold plating/Active area	Tail finish
RVPX	J	16	E	M	1

2. Connector type

J	Backplane
---	-----------

5. Gold plating/Active area

M	50 Micro-Inches Gold
C	30 Micro-Inches Gold

3. Insert size

08	8 Position Insert
16	16 Position Insert

6. Tail finish

1	Tin ✓
2	Tin-Lead

4. Insert type

M	Middle
E	End

DAUGHTER CARD

1.	2.	3.	4.	5.	6.
Series	Connector type	Insert size	Insert type	Gold plating/Active area	Tail finish
RVPX	P	16	D	M	1

2. Connector type

P	Module
PE	16Gb/s+ 

5. Gold plating/Active area

M	50 Micro-Inches
C	30 Micro-Inches

3. Insert size

08	8 position Insert
16	16 position Insert

6. Tail finish

1	Tin ✓
2	Tin-Lead

4. Insert type

D	Differential
S	Single-Ended
P	Power
V	Standard VITA 46 PO

✓: RoHS compliant

All dimensions are given for information only and are in inch, except as otherwise specified | *in mm: 1mm=0.03937 inch



R-SATA: Speeds to 6,25 Gb/s+

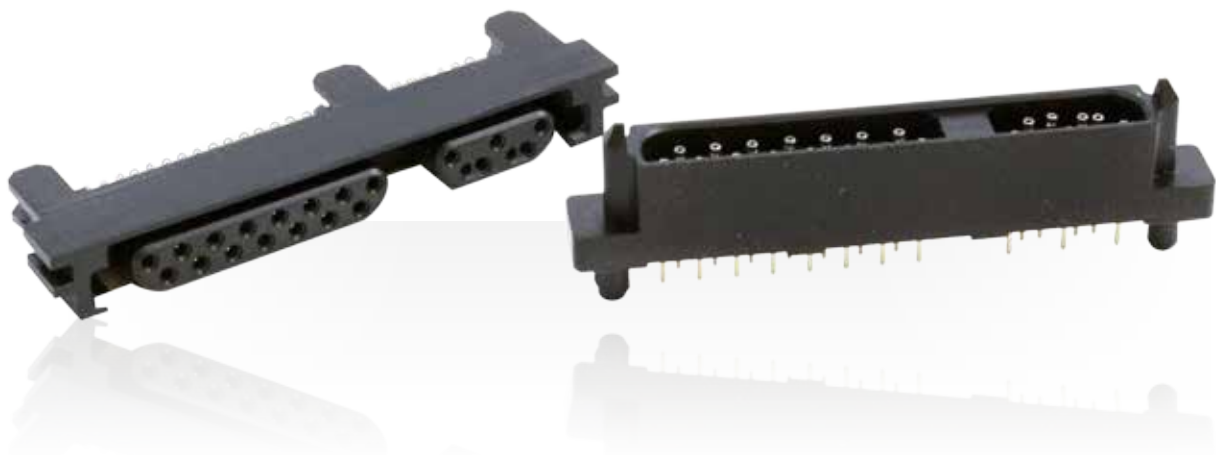


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Typical arrangements 7 pins	96
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R-SATA SERIES SERVES VARIOUS MARKETS, INCLUDING:



Commercial Aerospace



C4ISR



Industrial

GENERAL CHARACTERISTICS - R-SATA

Speeds to 6,25 Gb/s+

- Ruggedized R-SATA style
- Next generation of data storage connectors
- Designed to meet rugged data storage performance



Main features

- Primary internal storage interconnect for desktop and mobile PC's
- Designed for harsh environment and rugged storage applications
- Allows to ruggedize standard commercial off the shelf drives
- Connecting the system to peripherals (hard drives, solid state drives, optical drives, and removable magnetic media drives)

PC Tail configurations

7 & 22 PIN

End to End Boards



Right angle receptacle to right angle plug

Boards at Right Angle



Right angle plug to straight receptacle

Boards at Right Angle



Right angle receptacle to straight plug

Parallel Boards

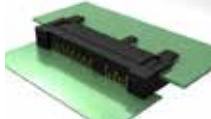


Straight receptacle to straight plug

Surface mount configurations

22 PIN

End to End Boards



Right angle receptacle to right angle plug card edge

End to End Boards



Right angle plug to right angle receptacle surface mount

End to End Boards



Right angle receptacle surface mount to right angle plug card edge

End to End Boards



Right angle plug surface mount to right angle receptacle surface mount

End to End Boards



Right angle plug surface mount to right angle receptacle

Boards at Right Angle



Right angle plug to surface mount to straight receptacle

Boards at Right Angle



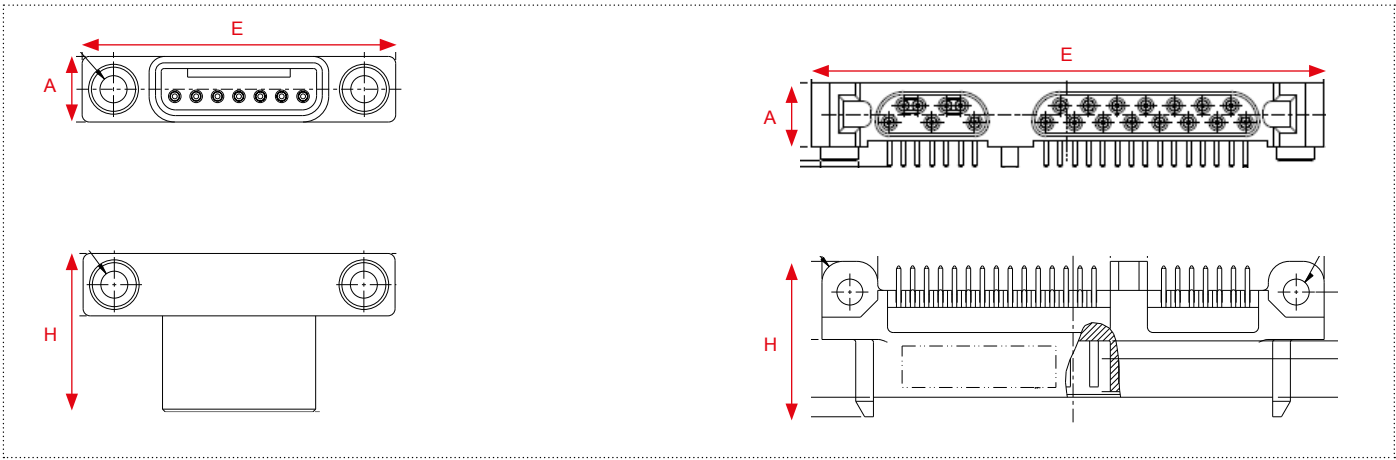
Straight receptacle to right angle plug card edge

Boards at Right Angle



Straight plug to right angle receptacle surface mount

Overall dimensions



	7 pin	22 pins
E	28,19 [1.110] MAX	45,72 [1.800] MAX
A	6,477 [.255] MAX	6,477 [.255] MAX
H	14,33 [.564] MAX	14,15 [.557] MAX

All dimensions are given for information only and are in [inch], except as otherwise specified | 1mm=0.03937 inch

GENERAL CHARACTERISTICS - R-SATA

STANDARD / APPROVALS

- Supports SATA 3.0 speed protocol (6.25 Gb/s)
- Intermountable with standard SATA connectors
- Footprint compatible with 3M SATA

TYPE OF CONTACTS

- Thru hole soldering
- Surface mount

CONNECTOR TYPES

- Right angle plug for daughter board
- Straight receptacle for motherboard
- Right angle receptacle for PC
- Straight plug for mezzanine

NUMBER OF ROWS / ARRANGEMENTS

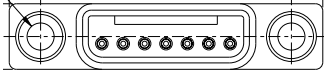
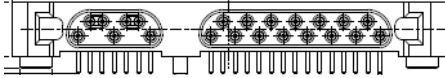
- 2 rows: 7 pins
- 3 rows: 22 pins combo (power / signal)

CONTACT TECHNOLOGY

- Micro-hyperboloid socket contact
- Low insertion and extraction forces
- High durability: 20 000 mating cycles
- Resistant to shock, vibration and fretting corrosion



High speed protocol guide

	R-SATA
Ethernet 10Base-T	7 Pin 
USB 2.0	
SATA 1.0	
SATA 2.0	
SATA 3.0	
Gigabit Ethernet (1000Base-T)	22 pin 
10 Gigabit Ethernet (10GBase-T)	
USB 3.0	Not suitable
DVI	
Display port 1.0	
Display port 1.2	
HDMI	

All dimensions are given for information only and are in [inch], except as otherwise specified | 1mm=0.03937 inch

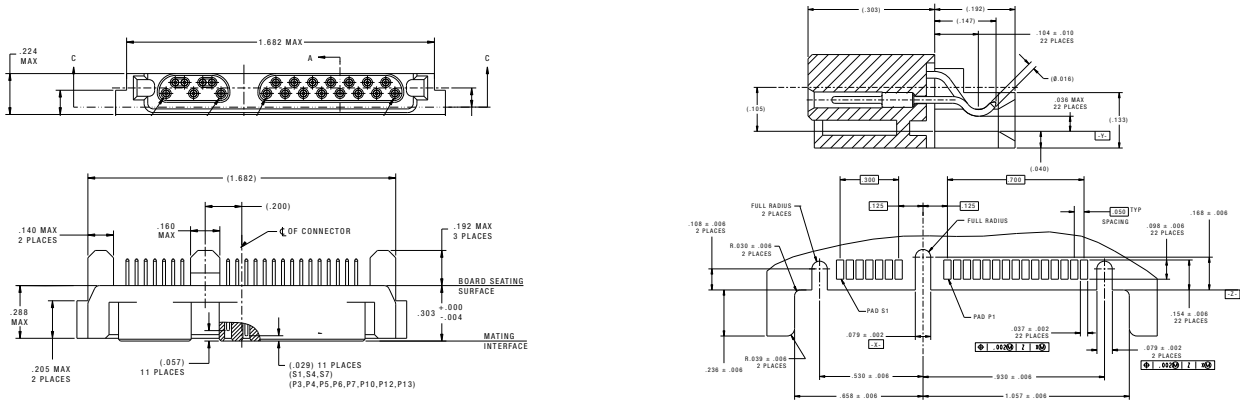
TYPICAL ARRANGEMENTS – COMBO 22 PIN – SMT TERMINATION

Plug

Surface mount right angle, card edge

Footprint compatible with 3M part # 5622-6309-ML

RS2-PRCE22-*

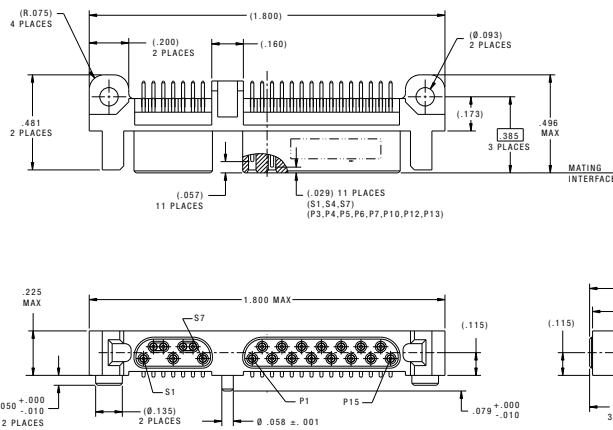


Plug

Surface mount right angle

Footprint compatible with 3M part # 5622-1200-ML

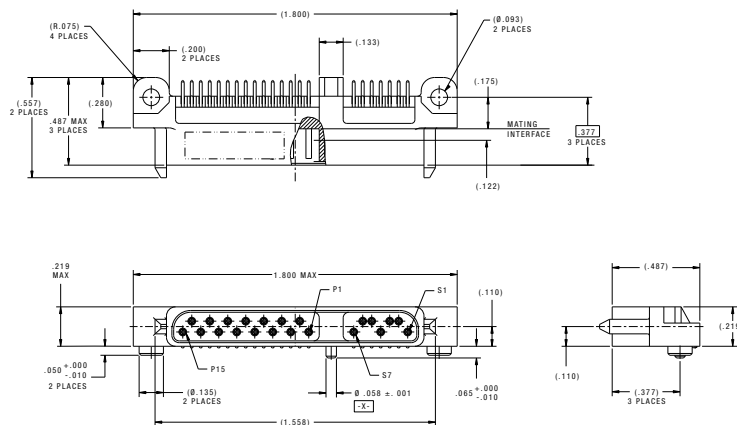
RS2-PRSM22-*



Receptacle

Surface mount right angle

RS2-RRSM22-****

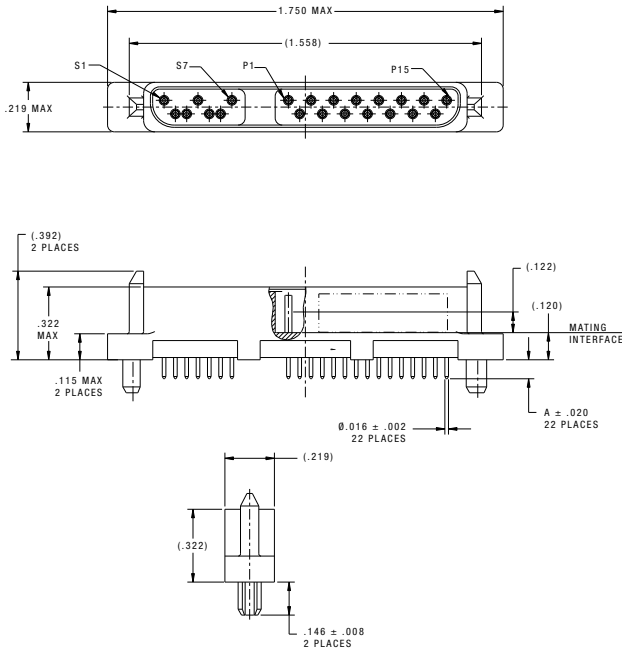


All dimensions are given for information only and are in [inch], except as otherwise specified | 1mm=0.03937 inch

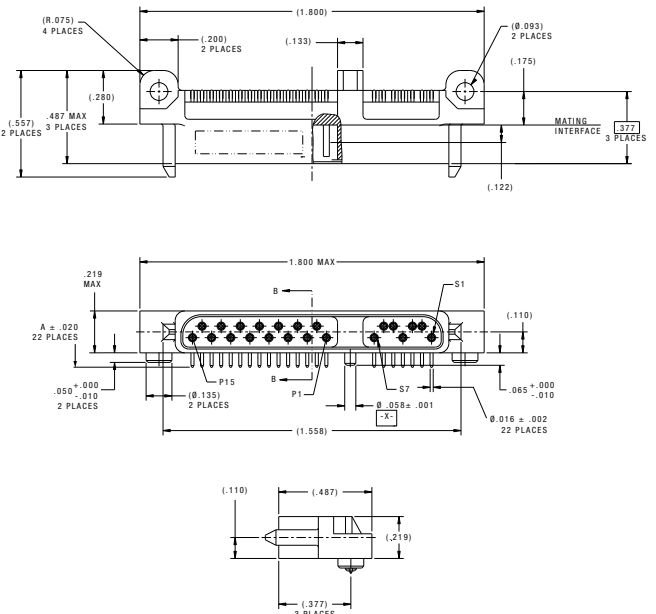
TYPICAL ARRANGEMENTS – COMBO 22 PIN – PCB TERMINATION

Receptacle
Straight PC tail

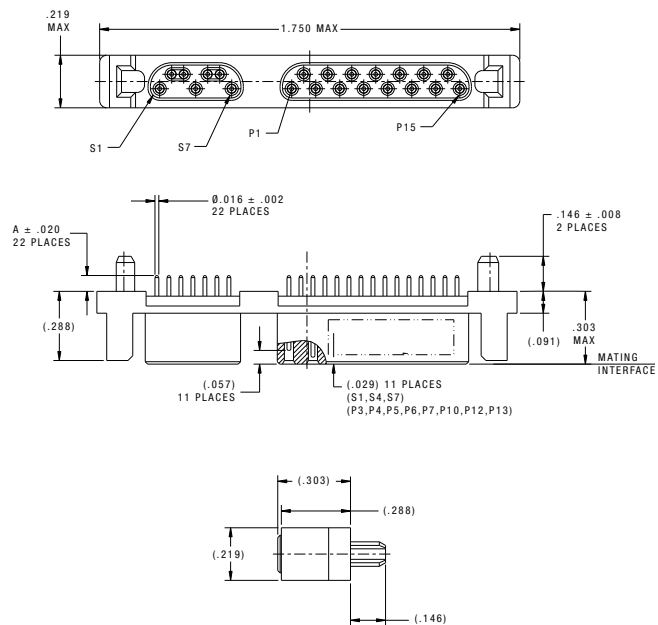
RS2-RST22-****

**Receptacle**
Right angle PC tail

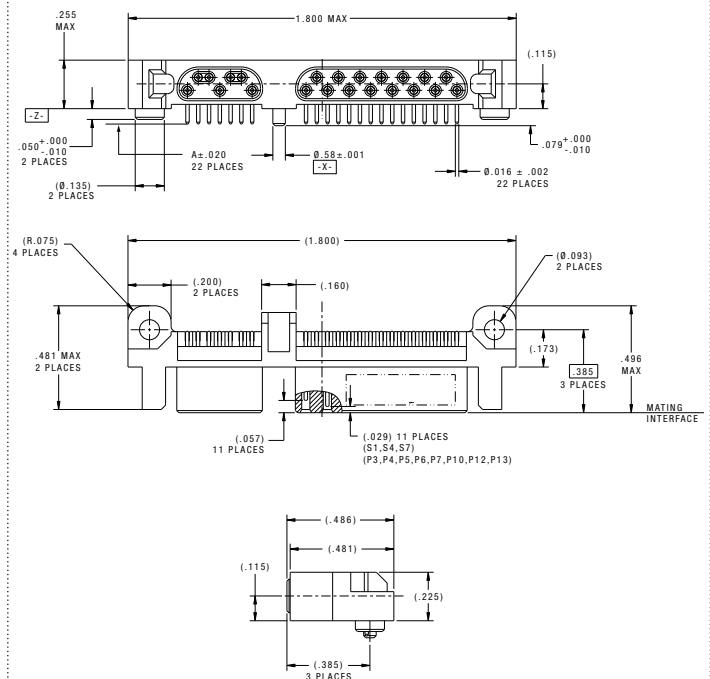
RS2-RR22-****

**Plug**
Straight PC tail

RS2-PST22-****

**Plug**
Right angle PC tail

RS2-PRA22-****

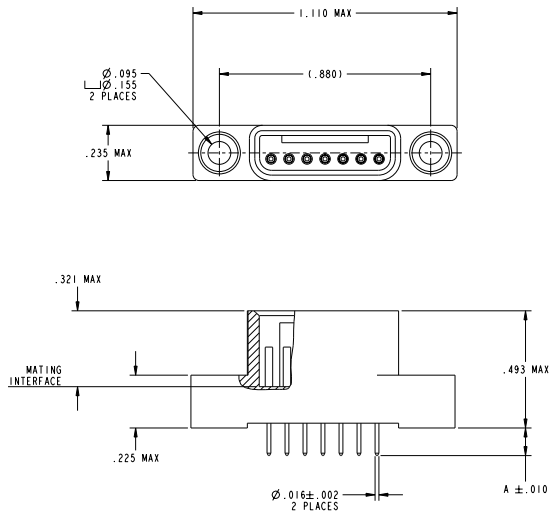


All dimensions are given for information only and are in [inch], except as otherwise specified | 1mm=0.03937 inch

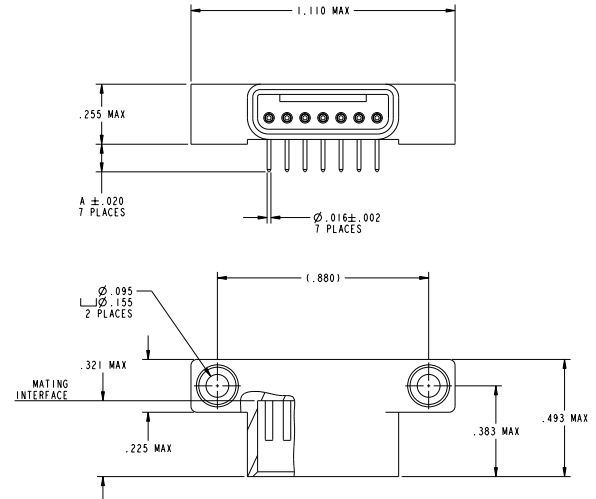
TYPICAL ARRANGEMENTS – 7 PIN

Receptacle
Straight PC tail

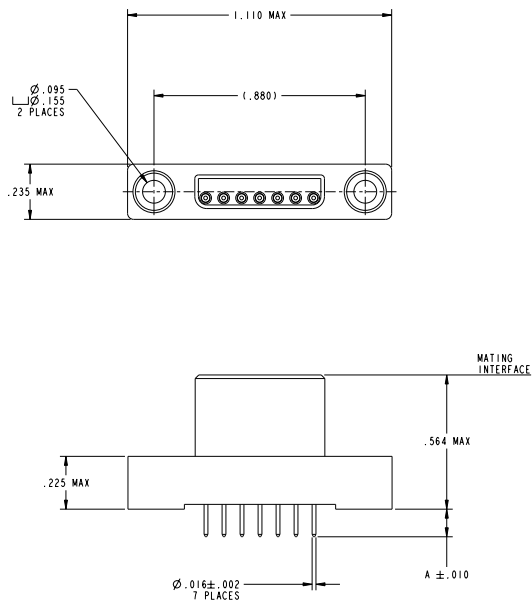
RS2-RST07-****

**Receptacle**
Right angle PC tail

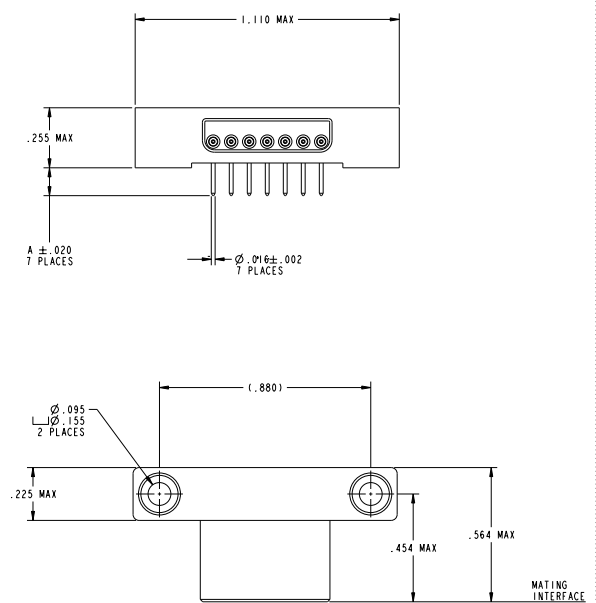
RS2-RRA07-****

**Plug**
Straight PC tail

RS2-PST07-****

**Plug**
Right angle PC tail

RS2-PRA07-****



All dimensions are given for information only and are in [inch], except as otherwise specified | 1mm=0.03937 inch

HOW TO ORDER - R-SATA

7 PIN & COMBO 22 PIN - THRU HOLE SOLDERING (PCB TERMINATION)

1.	2.	3.	4.
Series	Connector type	Total number of contacts	Termination style/Tail finish
RS2-	RRA	07	0702

1. Series

RS2	R-SATA
------------	--------

2. Connector type

PRA	Plug, Right Angle - not available
PST	Plug, Straight
RRA	Receptacle, Right angle
RST	Receptacle, Straight

3. Total number of contacts

07	7 Contacts - not available
22	22 Contacts

4. Termination style/Tail finish

0702	PCB .070" Stickout, AU/Ni
0706	PCB .070" Stickout, AU/Ni-Sn/Pb
0902	PCB .090" Stickout, AU/Ni
0906	PCB .090" Stickout, AU/Ni-Sn/Pb
1102	PCB .110" Stickout, AU/Ni
1106	PCB .110" Stickout, AU/Ni-Sn/Pb
1302	PCB .130" Stickout, AU/Ni
1306	PCB .130" Stickout, AU/Ni-Sn/Pb

Finish Key :
 Au/Ni Gold over Nickel
 Au/Ni-Sn/Pb Gold over Nickel with Tin Lead Dip

COMBO 22 PIN - SMT TERMINATION

1.	2.	3.	4.
Series	Connector type	Total number of contacts	Termination style/Tail finish
RS2-	RRSM	22-	2

1. Series

RS2	R-SATA
------------	--------

2. Connector type

PRSM	Plug, Right Angle, Surface Mount - not available
RRSM	Receptacle, Right Angle, Surface Mount
PRCE	Plug, Card Edge

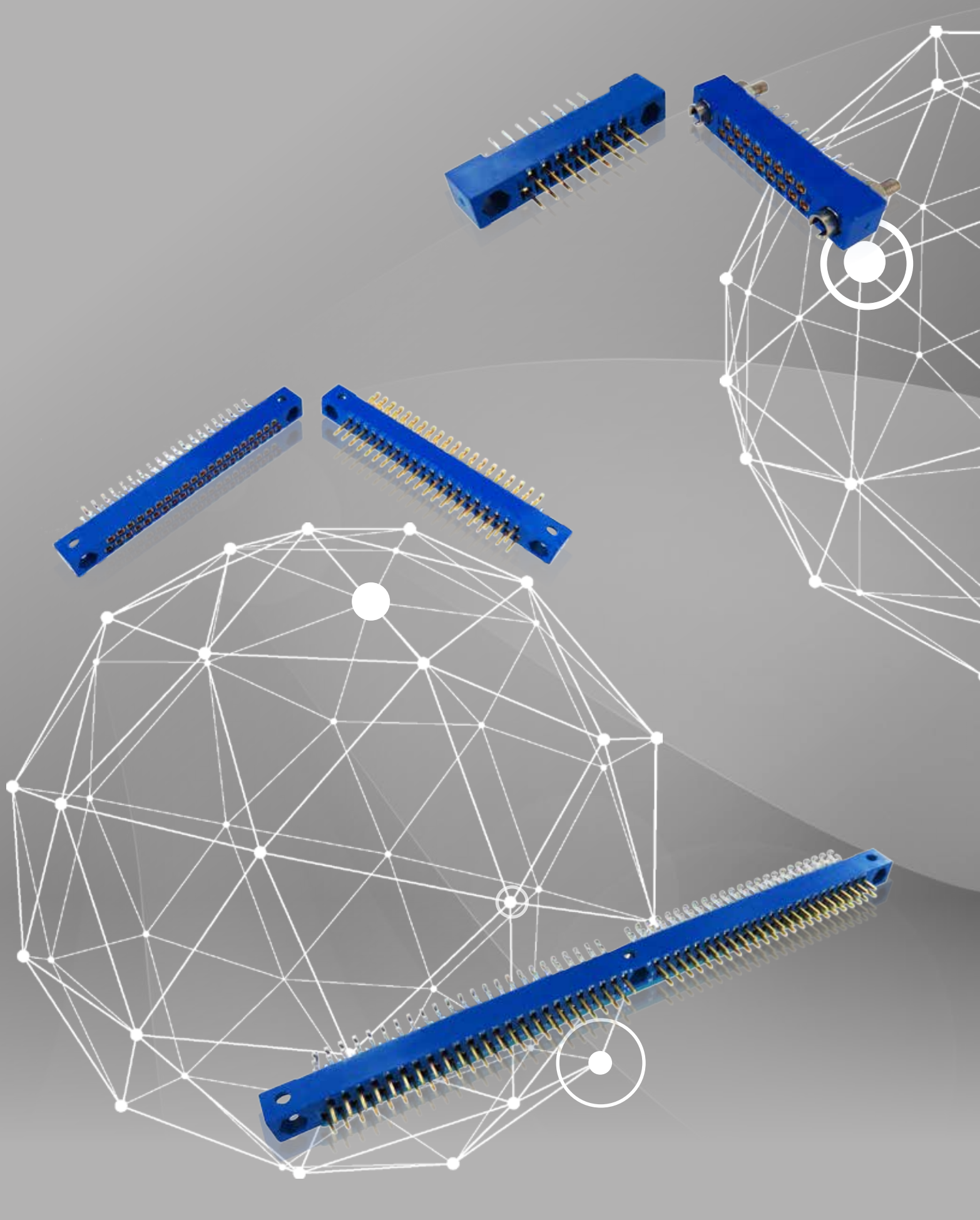
3. Total number of contacts

22	22 Contacts
-----------	-------------

4. Termination style/Tail finish

2	Gold/Nickel
6	Gold/Nickel with tin lead dip

All dimensions are given for information only and are in [inch], except as otherwise specified | 1mm=0.03937 inch



127/HE8: The well proven technology

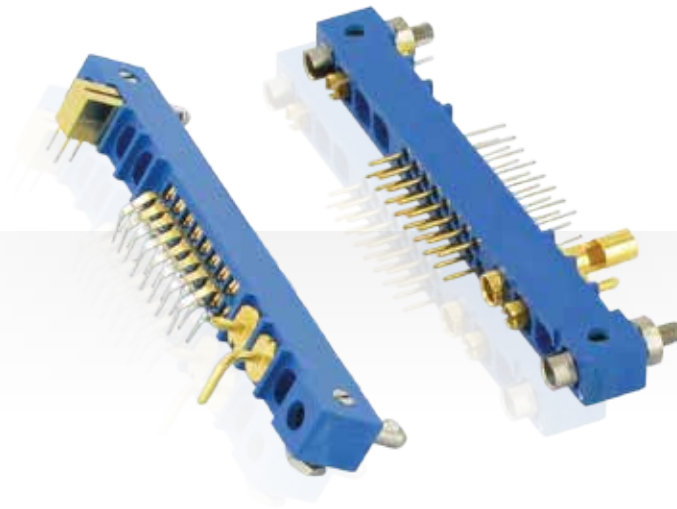


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THE 127/HE8 SERIES SERVES VARIOUS MARKETS, INCLUDING:



Military Aerospace



Commercial Aerospace



C4ISR



Ground Vehicles



Industrial

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

GENERAL CHARACTERISTICS - 127/HE8

The widest board to board or board to cable range

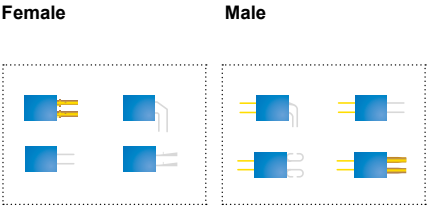


- Wide range of fittings, guiding and contact terminations
- Low-profile
- Cost competitive
- Reliable technology
- Board to board, board to cable or cable to cable versions
- Fully compatible with all the standard connectors on the market (HE801, HE804 & HE807)

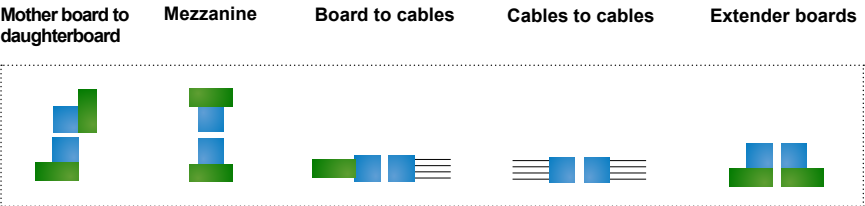
Main features

- Turning fork and blade concept
- Hybrid patterns: 3 to 10 special cavities
- 36 keying possibilities

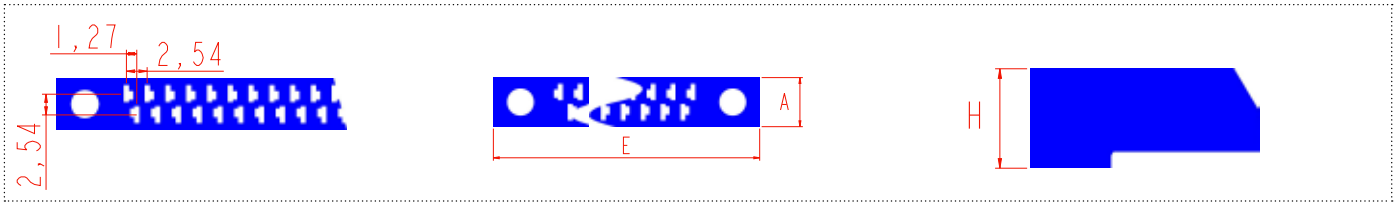
Contacts Terminations



Recommended configurations



Overall dimensions



	HE801	HE804	HE807
H	7,9 [.311]	6,9 [.272]	7,9 [.311]
A	6,3 [.248] for 2-rows 8,55 to 8,94 [.337 to .352] for 3 rows	6,3 [.248] for 2-rows 8,55 to 8,94 [.337 to .352] for 3 rows	6,3 [.248] for 2-rows 8,55 to 8,94 [.337 to .352] for 3 rows
E	37,5 to 144,2 [1.476 to 5.677]	37,5 to 144,2 [1.476 to 5.677]	37,5 to 144,2 [1.476 to 5.677]

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

GENERAL CHARACTERISTICS - 127/HE8

STANDARD / APPROVALS

- NFC UTE 93424
 - HE801
 - HE804
 - HE807
- BS9525
 - N0001
 - F0006
 - F0007
- MIL DTL 55302
 - /140 to /155

TYPE OF CONTACTS

- Low level signal contacts: 3A
- Power contacts: 10A & 20A
- Coaxial contacts

CONNECTOR TYPES

- HE801: cylindrical pin
- HE804: rectangular pin
- HE807 / 127H : hybrid version
- F = Female contact
- M = Male contact

CONTACT DENSITY

- Medium density: 2.54 [.100] staggered grid (1.27 [.050] offset), 2.54 [.100] between rows

NUMBER OF ROWS

- 2 rows
- 3 rows

ARRANGEMENTS

- From 17 to 144 low level signal contacts
- From 0 to 10 special contacts: power or coaxial

FEMALE CONTACT

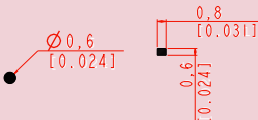
- Turning fork contact
- Selective plating
- Advanced copper alloys
- Optimized electrical conductivity
- Long-term mechanical reliability
- Selective plating



MALE CONTACT

Mating end diameter

- HE801 & HE807: cylindrical section Ø 0.6[.024]
- HE804: rectangular section: 0.8x0.6 [.031 x .024]



MATERIALS

Female contact

- CuSn9P, stamped and formed

Male contact

- CuZn, stamped and formed

Guiding devices

- Electroless nickel over brass or Passivated stainless steel 303

Plastic insert

- Thermoset DAP, 30% glass-fiber filled

PLATING

Contact terminations

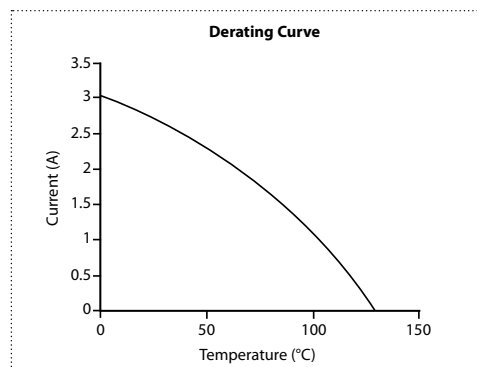
- Tin lead or lead free on YD, Y, Z, ZC, YC, contacts
- Gold on X, X1 contacts

Active contact area

- Gold over Nickel

Technical specifications

Mechanical characteristics	127/HE8
Backoff ¹ (mm)	1 _{MAX} [.039]
Mating force per contact (N)	1,60 _{MAX}
Unmating force per contact (N)	0,14 _{MIN}
Durability cycles	500
Vibrations (10 to 2000 Hz) micro discontinuity 1ns	10 g
Shocks micro discontinuity 1µs	100 g
Recommended tightening torques	
Nuts for Ø 2,5mm screws, brass (m.N)	0,25
Nuts for Ø 1,6mm screws, brass (m.N)	0,15
Environmental characteristics	
Thermal shocks (°C)	-55 / + 125
Salt Spray (hours)	96
Electrical characteristics	
Current rating per contacts (A)	3 (see derating curve)
Insulation resistance (GΩ)	5 _{MIN}
Contact resistance (mΩ)	12 _{MAX}
Dielectric Withstanding Voltage (Vrms)	1000 _{MIN}
Service Voltage (at 50Hz) (Vrms)	250



¹: When both connectors are fully mated, the backoff is the maximum distance the connectors can be unmated while functioning properly

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

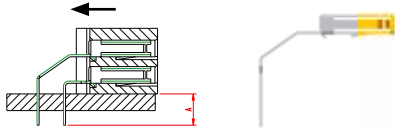
SIGNAL CONTACTS

Female contacts

The mention ← or → means the contact removal direction

Right angle PC tail

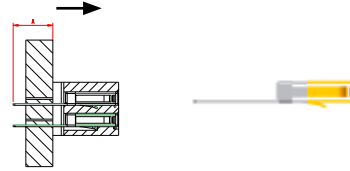
- Thru hole soldering
- Single or double sided daughter board



YC

Straight PC tail

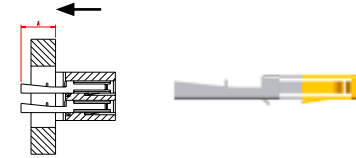
- Thru hole soldering
- Mother board



YD/Y

Solder cup

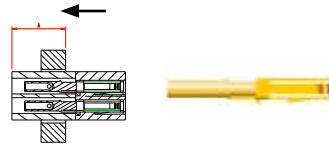
- Wire Ø 1_{MAX} [.039] on core section 0,78mm² [.0012in²]
- Hard soldering on wire



Z

Crimp barrel

- Crimping on wire
- AWG gauge 22 to 26
- Terminations protected by a casing cemented to the moulding



X1

Male contacts

Right angle PC tail

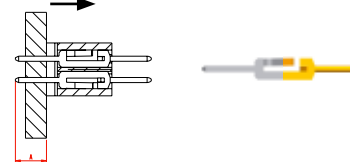
- Thru hole soldering
- Single or double sided daughter board



YC

Straight PC tail

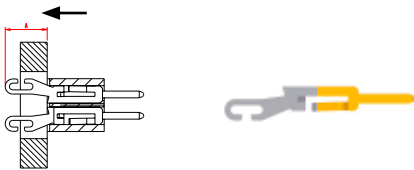
- Thru hole soldering
- Mother board



Y

Solder cup

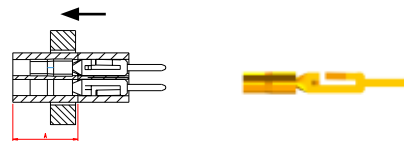
- Hard soldering on wire
- Wire Ø 1_{MAX} [.039] on core section 0,78mm² [.0012in²]



ZC

Crimp barrel

- Crimping on wire
- AWG gauge 22 to 26
- Termination protected by a casing cemented to the moulding
- Not available for HE801 & HE807 connectors



X

Contact type	Female					Male			
	YC	YD	Y	Z	X1	YC	Y	ZC	X
A HE801 / HE807	3[.118]	/	4,9[.193]	4,5[.177]	7[.276]	3,1[.122]	5,05[.199]	4,3[.169]	7[.276]
A HE804	3[.118]	4,7[.185]	/	5,5[.217]	8[.315]	3,1[.122]	5[.197]	5,3[.209]	8[.315]
PCB thickness	2[.079]	3,2[.126]	3,2[.126]	3,2[.126]	3,2[.126]	2,6[.102]	3,2[.126]	3,2[.126]	3,2[.126]
Termination section	0,2 x 0,5 [.020 x .007]	0,5 x 0,2 [.007 x .020]	0,5 x 0,2 [.007 x .020]	/	/	0,35 x 0,35 [.014 x .014]	0,35 x 0,35 [.014 x .014]	/	/

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SPECIAL CONTACTS

Power contacts

Straight PC tail 10A

- Thru hole soldering
- Mother board

M141/F141



Right angle PC tail 10A

- Thru hole soldering
- Daughter board

M132/F132



Solder cup 10A

- Hard soldering on wire

M121/F121



Solder cup 20A

- Hard soldering on wire

MH1/FH1



Right angle PC tail 20A

- Thru hole soldering
- Daughter board

MH3/FH3



Straight PC tail 20A

- Thru hole soldering
- Mother board

MH2/FH2



Coaxial contacts

Straight PC tail

- Thru hole soldering
- Mother board

M041/F041



Straight on flexible cable

- Hard soldering on flexible cable

M011/F011



Right angle PC tail

- Thru hole soldering
- Daughter board

M032/F032



M021/F021

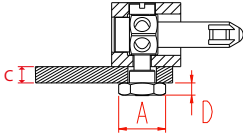
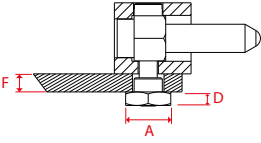
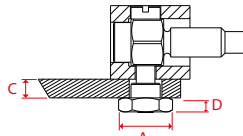
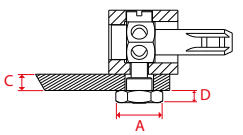
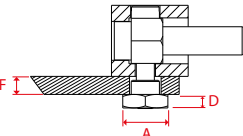
Contact type		A	Wire diameter	Termination section	PCB thickness
10A	M121/F121	8.2[.323]	2 _{MAX} [.079]	Ø 3.6[.142]	/
	M141/F141	3.8[.150]	/	Ø 1.2 [.047]	3.2 _{MAX} [.126]
	M132/F132	3.8[.150]	/	Ø 1.2 [.047]	1.6 to 2.4 [.063 to .095]
20A	MH1/FH1	6.3[.248]	1.83 _{MAX} [.072]	/	/
	MH2/FH2	4.2[.165]	/	1.4 [0.053]	3.2 _{MAX} [.126]
	MH3/FH3	3.8[.150]	/	1.2 [.047]	1.6 to 2.4 [.063 to .095]
Coaxial	M041/F041			3.8[.150]	
	M021/F021			9.2[.362]	
	M011/F011			2.5[.098]	
	M032/F032			6.2[.244] 2.54 [.100]	

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HE801 PLUG FITTINGS, STANDARD, DAUGHTERBOARD

To order the fitting alone HE8C1** for brass ; HE8C3** for stainless steel

For standard applications, mounting on chassis or daughter board

Contact	End Fittings							Central Fitting		Mating Receptacle Fittings		
	End Fitting	127 Ref.		Standard ref. HE 8 C	Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	Female ct.	Male ct.	Standart Reference HE 8 C
		Female ct.	Male ct.									
YC		A	J	101	Daughter board with plated thru holes	✓	X		102	K P KE	A B AE	201 203 209
YC		D	S	103	Daughter board Lockable on receptacle side	X	✓			S	D	220
YC		AS	JS	124	Daughter board with plated thru holes Lockable on receptacle side	✓	✓			KD KED	AD AED	221 223
YC		PA	PC	102	Daughter board or extension board with plated thru holes	X	X			K P KE	A B AE	201 203 209

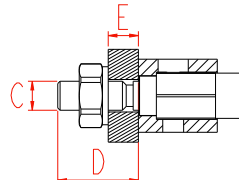
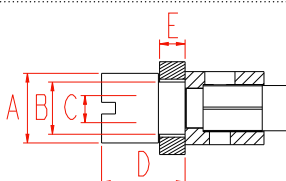
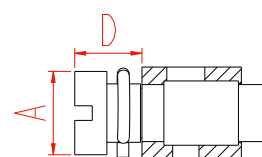
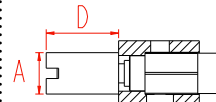
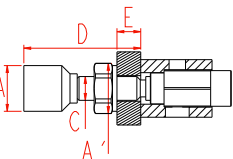
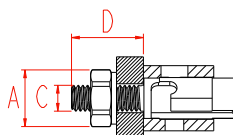
	HE8C101 A/J	HE8C103 D/S	HE8C124 AS/JS	HE8C102 PA/PC
A	Hex 4 [.157]	Hex 4 [.157]	Hex 4 [.157]	Hex 4 [.157]
C	1,6 to 2,4 [0.63 to 0.94]	1,6 to 2,4 [.063 to .094]	1,6 to 2,4 [.063 to .094]	1,6 to 2,4 [.063 to .094]
D	1,3 _{MAX} [.051]	1,3 _{MAX} [.051]	1,3 _{MAX} [.051]	1,3 _{MAX} [.051]

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

HE801 RECEPTACLE FITTINGS, STANDARD, MOTHERBOARD OR CHASSIS

To order the fitting alone HE8C2** for brass ; HE8C4** for stainless steel

For standard applications, mounting on chassis or mother board

Male contact	Female contact	End Fittings						Central Fittings		Mating Plug Fittings			
		End Fitting	127 Ref		Standard ref. HE 8 C	Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	Female ct.	Male ct.	Stantard Reference HE 8 C
			Female ct.	Male ct.									
ZC X Y	Z Y		K	A	212	Chassis or mother board	✓	X		229	A PA E	J PC R	101 102 110
ZC X Y YD	Z X1 Y YD		P	B	203	Chassis Lockable on receptacle side	✓	X		202	A PA E	J PC R	101 102 110
ZC X	Z		S	D	219	Chassis or mother board Board to board, board to chassis, parallel to one another, board to cable or chassis to cable Lockable on receptacle side	X	✓		229	D EF	S RF	103 112
ZC X Y	Z Y		KD	AD	221	Cable to board or cable to chassis Quarter turn locking Dimensions given in reset position	✓	✓			AS ES	JS RS	124 125
ZC X Y	Z Y		KT	AT	422	Chassis or mother board Fixed receptacle Quarter turn lock- ing on plug side	✓	✓		429	ET	RT	327

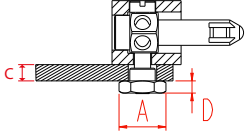
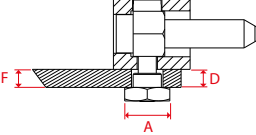
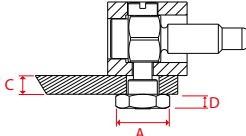
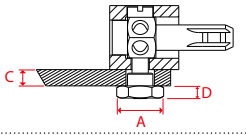
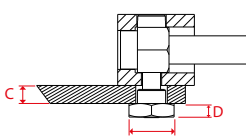
	HE8C212 K/A	HE8C203 P/B	HE8C219 S/D	HE8C221 KD/AD	HE8C422 KT/AT
A	/	Ø6[.236]	Ø5,8[.228]	Ø5[.197]	Hex5[.197]
B	/	Hex 4,5[.177]	/	/	/
C	M2,5[.098]	/	/	M2,5[.098]	M2,5[.098]
D	6 _{MAX} [.236]	5,9[.232]	6 _{MAX} [.236]	25,1 _{MAX} [.988]	6 _{MAX} [.236]
E	3,2 _{MAX} [.126]	2,1 _{MAX} [.083]	2,1 _{MAX} [.083]	3,2 _{MAX} [.126]	/
F	2,3[.091]	/	/	/	/
A'	/	/	/	Hex5[.197]	/

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HE807 PLUG FITTINGS, STANDARD, DAUGHTERBOARD

To order the fitting alone HE8C1** for brass ; HE8C3** for stainless steel

For standard applications, mounting on daughter board

Contact	End Fittings						Central Fitting		Mating Receptacle Fittings	
	End Fitting	127 Ref.	Standard ref. HE 8 C	Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	127 ref	Standard Reference HE 8 C
YC		A	101	Daughter board with plated the holes	✓	X		102	K PT KE	212 210 208
YC		D	103	Daughter board Lockable on receptacle side	X	✓			S	213
YC		AS	124	Daughter board with plated thru holes Lockable on receptacle side	✓	✓			KD KED	221 224
YC		PA	102	Daughter board or extension board with plated thru holes	X	X			K P KE IE	212 226 208

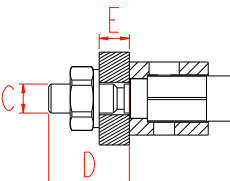
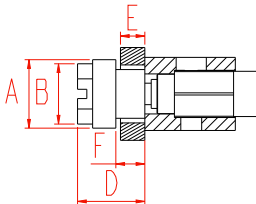
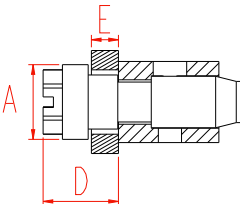
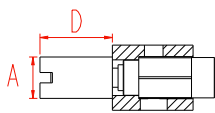
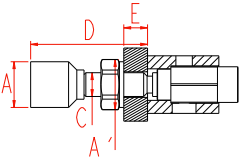
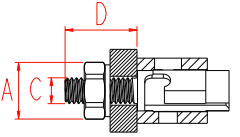
	HE8C101 A	HE8C103 D	HE8C124 AS	HE8C102 PA
A	Hex 4[.157]	Hex 4[.157]	Hex 4[.157]	Hex 4[.157]
C	1,3 to 2,4[.63 to .94]	1,3 to 2,4[.63 to .94]	1,3 to 2,4[.63 to .94]	1,3 to 2,4[.63 to .94]
D	1,3 _{MAX} [.051]	1,3 _{MAX} [.051]	1,3 _{MAX} [.051]	1,3 _{MAX} [.051]

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

HE807 RECEPTACLE FITTINGS, STANDARD, MOTHERBOARD OR CHASSIS

To order the fitting alone HE8C2** for brass ; HE8C4** for stainless steel

For standard applications, mounting on chassis or mother board

Male contact	Female contact	End Fittings					Central Fitting		Mating Plug Fittings		
		End Fitting	127 Ref.		Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	127 ref	Standart Reference HE 8 C
			Female ct.	Male ct.							
ZC X Y	Z YD		K	212	Chassis or mother board	✓	X		229	A PA E T	101 102 117 118
ZC X	Z		P	226	Chassis floating receptacle	✓	X		202	A PA E T	118101 102 117 118
ZC X	Z		S	213	Cables, free receptacle Locking device extractor Locking and unlocking shall be carried out simultaneously at both ends	X	✓		229	D EF	103 119
ZC X Y	Z YD		KD	221	Chassis or motherboard Fixed receptacle	✓	✓				AS ES
ZC X Y	Z YD		KT	422	Chassis or mother board Fixed receptacle Quarter turn locking on plug side	✓	✓		429	ET	327

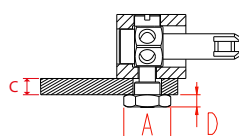
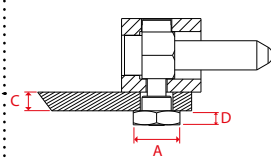
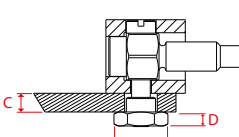
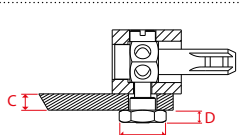
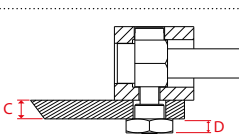
	HE8C212 K	HE8C226 P	HE8C213 S	HE8C221 KD	HE8C422 KT
A	/	Ø6[.236]	Ø5,8[.228]	Ø5[.197]	Hex5[.197]
B	/	Hex 4,5[.177]	/	/	/
C	M2,5[.098]	/	/	M 2,5[.098]	M 2,5[.098]
D	6 _{MAX} [.236]	5,9[.232]	6 _{MAX} [.236]	25,1 _{MAX} [.988]	6 _{MAX} [.236]
E	3,2 _{MAX} [.126]	2,1 _{MAX} [.083]	2,1 _{MAX} [.083]	3,2 _{MAX} [.126]	/
F	2,3[.091]	/	/	/	/
A'	/	/	/	Hex5[.197]	/

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HE804 PLUG FITTINGS, STANDARD, DAUGHTERBOARD

To order the fitting alone HE8C1** for brass ; HE8C3** for stainless steel

For standard application, mounting on daughterboard

Contact	End Fittings							Central Fitting		Mating Receptacle Fittings		
	End Fittings	127 ref.		Standard ref.	Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	Female contact	Male contact	Standart Reference HE 8 C
		Female contact	Male contact	HE 8 C								
YC		A	J	101	Daughter board with plated thru holes	✓	X		102	K L P KE PD	A B AE	201 203 209
YC		D	S	103	Daughter board Lockable on receptacle side	X	✓			S PD	D PB	220
YC		AS	JS	124	Daughter board with plated thru holes Lockable on receptacle side	✓	✓			KD KED PD	AD AED PB	221 223
YC		PA	PC	102	Daughter board with plated thru holes	X	X			K L P KE PD	A B AE PB	201 203 209

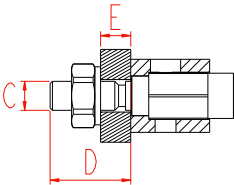
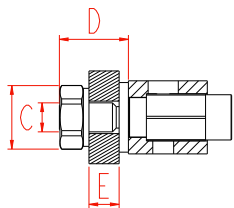
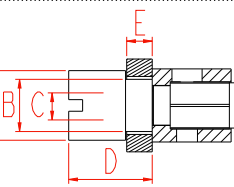
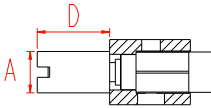
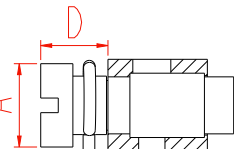
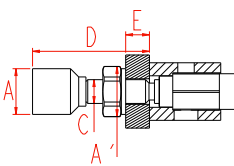
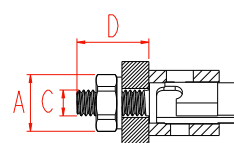
	HE8C101 A/J	HE8C103 D/S	HE8C124 AS/JS	HE8C102 PA/PC
A	Hex 4 [.157]	Hex 4 [.157]	Hex 4 [.157]	Hex 4 [.157]
C	1,6 to 2,4 [.063 to .094]	1,6 to 2,4 [.063 to .094]	1,6 to 2,4 [.063 to .094]	1,6 to 2,4 [.063 to .094]
D	1,3 MAX [.051]	1,3 MAX [.051]	1,3 MAX [.051]	1,3 MAX [.051]

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HE804 RECEPTACLE FITTINGS, STANDARD, MOTHERBOARD OR CHASSIS

To order the fitting alone HE8C2** for brass ; HE8C4** for stainless steel

For standard applications, mounting on chassis or mother board

Male contact Female contact		End Fittings						Central Fitting		Mating Plug Fittings			
		End Fitting	Amphenol Reference			Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	Female contact	Male contact	Standard Reference HE 8 C
Female contact	Male contact		HE 8 C										
ZC X Y	Z YD		K	A	201	Chassis or mother board	✓	X			A PA E	J PC R	101 102 110
	Z YD X1		L	/	228	Chassis or mother board With insulating washer	✓	X			A PA E	J PC R	101 102 110
ZC X	Z		P	B	203	Chassis Floating receptacle	✓	X		202	A PA E	J PC R	101 102 110
ZC X	Z		S	D	220	Cables, free receptacle Locking device extractor-Locking and unlocking shall be carried out simultaneously at both ends	X	✓			D EF	S RF	103 112
ZC X Y	Z YD		KD	AD	221	Chassis or mother board Fixed receptacle. Captive locking screw into the body of the fitting	✓	✓			AS ES	JS RS	124 125
ZC X Y	Z YD		KT	AT	422	Chassis or mother board Fixed receptacle Quarter turn locking on plug side	✓	✓		402	ET	RT	327

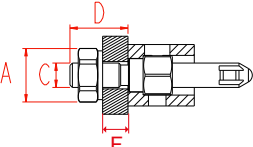
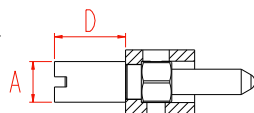
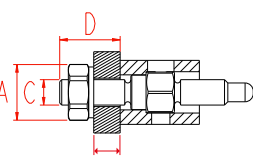
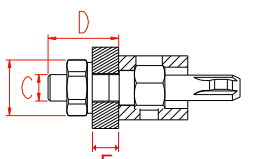
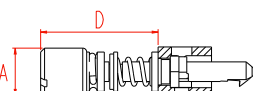
	HE8C201 K/A	HE8C228 L	HE8C203 P/B	HE8C220 S/D	HE8C221 KD/AD	HE8C422 KT/AT
A	/	Hex 5 [.197]	Ø 6 [.236]	Ø 5,7 [.224]	Ø 5 [.197]	Hex 5 [.197]
B	/	/	Ø 4,5 [.177]	/	/	/
C	M 2,5 [.098]	M 2,5 [.098]	M 2,5 [.098]	/	M 2,5 [.098]	M 2,5 [.098]
D	6 MAX [.236]	6 MAX [.236]	7,2 [.283]	4,7 MAX [.185]	26,1 MAX [1.028]	7 MAX [.276]
E	3,2 MAX [.126]	2,7 MAX [.106]	2,2 [.087]	/	3,2 MAX [.126]	/
A'	/	/	/	/	Hex 5 [.197]	/

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HE801 PLUG FITTINGS, SPECIAL APPLICATIONS

To order the fitting alone HE8C1** for brass ; HE8C3** for stainless steel

Plug fittings for special applications, mounting on chassis, mother board or wires

Male contact	Female contact	End Fittings	End Fittings		Standard ref. HE 8 C	Description	Keying	Locking	Central Fitting		Mating Receptacle Fittings		
			127 Ref.						Central Fitting	Standard Reference HE 8 C	Female ct.	Male ct.	Standart Reference HE 8 C
ZC X Y	Z YD		E	R	117	Chassis or mother board Board to board, board to chassis or mezzanine	✓	X		129	K P KE	A B AE	201 203 209
		T	T	118		✓	X						
ZC X Y	Z YD		EF	RF	119	Chassis or mother board Board to board, board to chassis, mezzanine board to cable or chassis to cable Lockable on receptacle side	X	✓			S	D	220
			ES	RS	125		✓	✓			KD KED	AD AED	221 223
ZC X	Z		ET	RT	327	Cable to board or cable to chassis Quarter turn locking	✓	✓			329	KT KET	AT AET

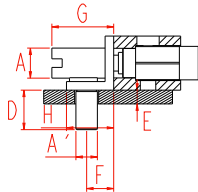
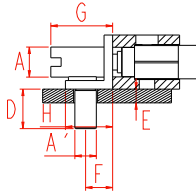
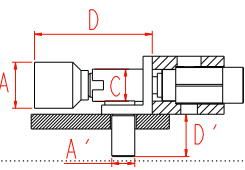
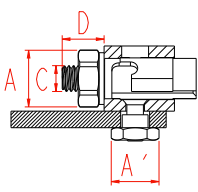
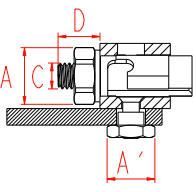
	HE8C117 E/R	HE8C118 T	HE8C119 EF/RF	HE8C125 ES/RS	HE8C327 ET/RT
A	Hex 5 [.197]				Ø 6 [.236]
C	M 2,5 [.098]				/
D	6 MAX [.236]				16 MAX [.630]
F	3,2 MAX [.126]	/	3,2 MAX [.126]	3,2 MAX [.126]	/

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HE801 RECEPTACLE FITTINGS, SPECIAL APPLICATIONS

To order the fitting alone HE8C2** for brass ; HE8C4** for stainless steel

Receptacle fittings for special applications, mounting on daughterboard

Contact	End Fittings						Central Fitting		Mating Plug Fittings			
	End Fittings	127 Ref.		Standard ref. HE 8 C	Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	Female ct.	Male ct.	Standard Reference HE 8 C
		Female ct.	Male ct.									
YC		KE	AE	208	Connection board to board aligned with each other With bracket	✓	✗		208	A PA E	J PC R	101 102 110
		KED	AED	224	Connection board to board aligned with each other. Captive locking screw into the body of the fitting With bracket	✓	✓			AS ES	JS RS	124 125
		KET	AET	425	Daughter board. Board to cable. Quarter turn locking on plug side	✓	✓		425	ET	RT	327

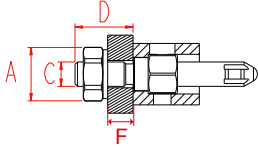
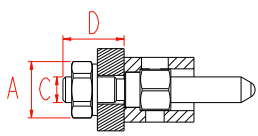
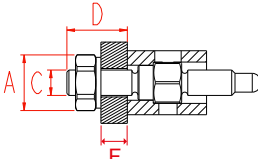
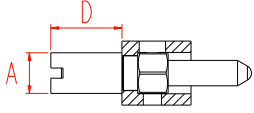
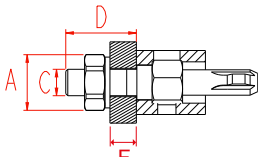
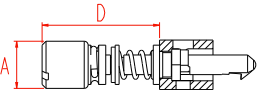
	HE8C208 KE/AE	HE8C224 KED/AED	HE8C425 KET/AET
A	Ø 3,5 [.138]	Ø 5 [.197]	Hex 5 [.197]
C	/	Ø 3,5 [.138]	M 2,5 [.098]
D	4,6 [.181]	13 ^{MAX} [.197]	4,1 ^{MAX} [.161]
E	1,6 to 2,4 [.063 to .094]	/	/
F	2,35 [.093]	/	/
G	7,2 ^{MAX} [.283]	/	/
A'	M 2,5 [.098]		Hex 4 [.157]
H	5,5 [.217]	4,6 [.181]	/
D'	/	/	/

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HE807 PLUG FITTINGS, SPECIAL APPLICATIONS

To order the fitting alone HE8C1** for brass ; HE8C3** for stainless steel

Plug fittings for special applications, mounting on chassis, mother board or wires

Male contact	Female contact	End Fittings					Central Fitting		Mating Receptacle Fittings	
		End Fittings	127 Ref.	Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	127 Ref.	Standard Ref. HE 8 C
			Female ct.	Male ct.						
ZC X Y	Z Y		E	117	Chassis or mother board Board to board, board to chassis or mezzanine	✓			K P	212 226 208 206
			T	118		X	X			
ZC X Y	Z Y		EF	119	Chassis or mother board Board to board, board to chassis, mezzanine, board to cable or chassis to cable Lockable on receptacle side	X	✓		S	213
			ES	125		✓	✓			
ZC X	Z		ET	327	Cable to board or cable to chassis Quarter turn locking	✓	✓	329	KT KET	422 425

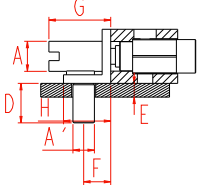
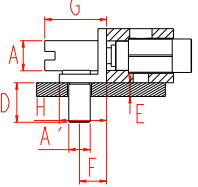
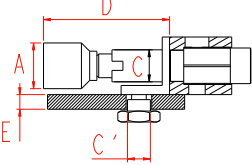
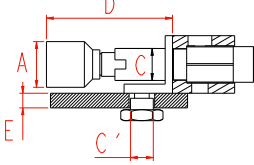
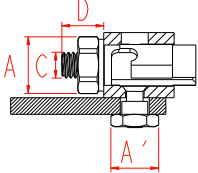
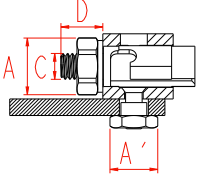
	HE8C117 E/R	HE8C118 T	HE8C119 EF/RF	HE8C125 ES/RS	HE8C327 ET/RT
A	Hex 5 [.197]				Ø 6 [.236]
C	M 2,5 [.098]				/
D	6 MAX [.236]				16 MAX [.630]
F	3,2 MAX [.126]	/	3,2 MAX [.126]	3,2 MAX [.126]	/

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

HE807 RECEPTACLE FITTINGS, SPECIAL APPLICATIONS

To order the fitting alone HE8C2** for brass ; HE8C4** for stainless steel

Receptacle fittings for special applications, mounting on daughter board

Contact	End Fittings						Central Fitting		Mating Plug Fittings	
	End Fittings	127 Ref.		Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	127 Ref	Standard Ref HE 8 C
		Female ct.	Male ct.							
YC		KE	208	Connection board to board aligned with each other With bracket	✓	X		208	A PA E T	101 102 117 118
		KED	224	Connection board to board aligned with each other Captive locking screw into the body of the fitting With bracket	✓	✓			AS	124
		KET	425	Daughter board Board to cable Quarter turn locking on plug side	✓	✓			ET	327

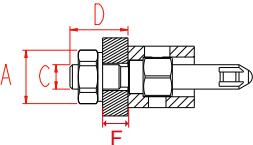
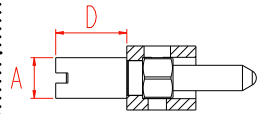
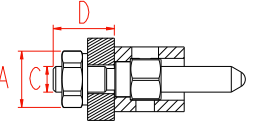
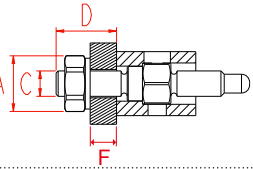
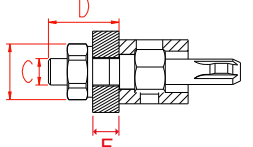
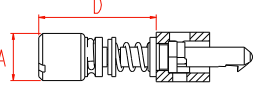
	HE8C208 KE/AE	HE8C224 KED/AED	HE8C425 KET/AET
A	Ø 3,5 [.138]	Ø 5 [.197]	Hex 5 [.197]
C	/	Ø 3,5 [.138]	M 2,5 [.098]
D	4,6 [.181]	13 _{MAX} [.197]	4,1 _{MAX} [.161]
E	1,6 to 2,4 [.063 to .094]	/	/
F	2,35 [.093]	/	/
G	7,2 _{MAX} [.283]	/	/
A'	M 2,5 [.098]		Hex 4 [.157]
H	5,5 [.217]	4,6 [.181]	/
D'	/	/	/

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HE804 PLUG FITTINGS, SPECIAL APPLICATIONS

To order the fitting alone HE8C1** for brass ; HE8C3** for stainless steel

Plug fittings for special applications, mounting on chassis, motherboard or wires

Male contact		Female contact	End Fittings						Central Fitting		Mating Receptacle Fittings			
			End Fittings	127 ref.		Standard ref. HE 8 C	Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	Female ct.	Male ct.	Standart Reference HE7 C
Female ct.	Male ct.													
ZC X Y	Z YD		E	R	110	Chassis or mother board Board to board, board to chassis or mezzanine	✓	X		113	K L P KE	A	201	
			T	T	111		✓	X				B AE	203 209	
ZC X Y	Z YD		EF	RF	112	Chassis or mother board Board to board, board to chassis, mezzanine, board to cable or chassis to cable Lockable on receptacle side	X	✓				S	D	220
			ES	RS	125		✓	✓				KD KED	AD AED	221 223
ZC X	Z		ET	RT	327	Cable to board or cable to chassis Quarter turn locking	✓	✓		313	KT KET	AT AET	422 425	

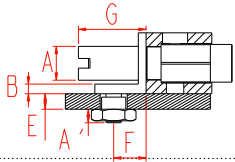
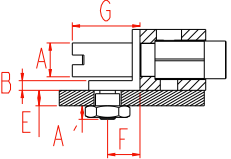
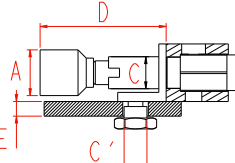
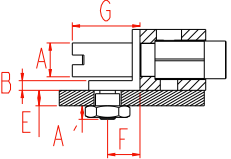
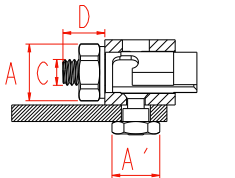
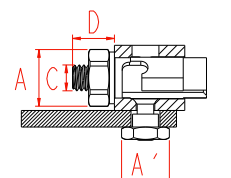
	HE8C110 E/R	HE8C111 T	HE8C112 EF/RF	HE8C125 ES/RS	HE8C327 ET/RT
A	Hex 5 [.197]		Hex 5 [.197]		Ø 6 [.236]
C			M 2.5 [.098]		/
D		6 MAX [.236]		7 MAX [.276]	16 MAX [.630]
F	3.2 MAX [.126]	/	/	/	/

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

HE804 RECEPTACLE FITTINGS, SPECIAL APPLICATIONS

To order the fitting alone HE8C2** for brass ; HE8C4** for stainless steel

Receptacle fittings for special applications, mounting on daughter board

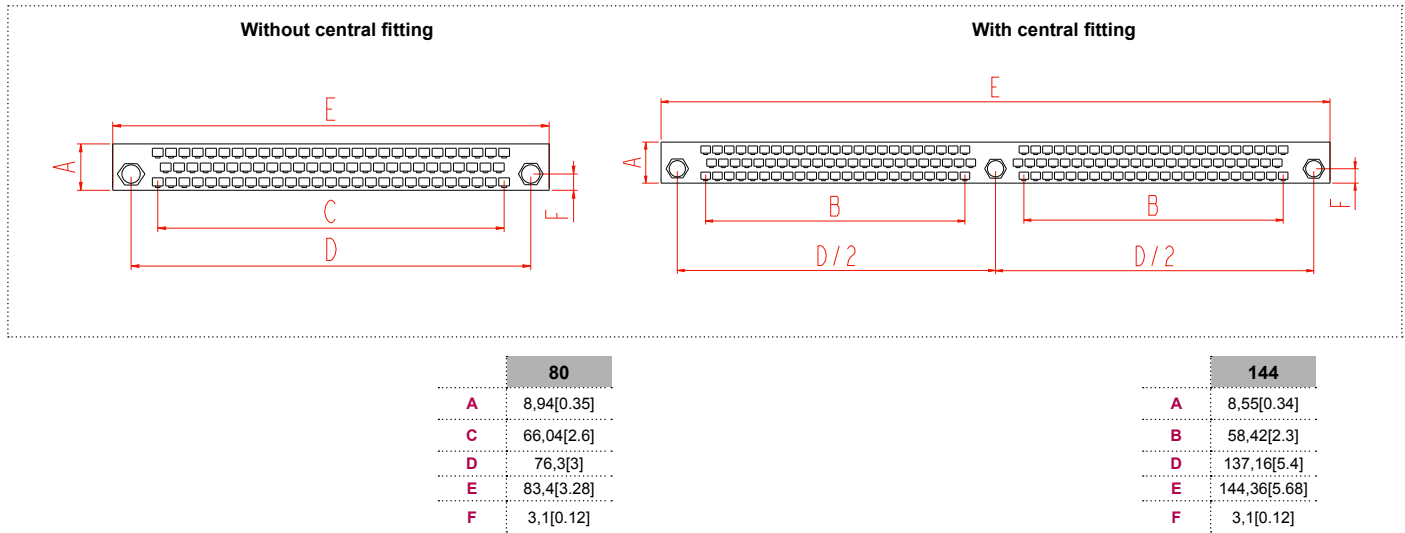
Contact	End Fittings						Central Fitting		Mating Plug Fittings			
	End Fittings	127 ref.		Standard ref. HE 8 C	Description	Keying	Locking	Central Fitting	Standard Reference HE 8 C	Female ct.	Male ct.	Standard Reference HE 7 C
		Female ct.	Male ct.									
YC		KE	AE	209	Connection board to board aligned with each other With bracket	✓	x		209	A PA E	J PC R	101 102 110
		KED	AED	223	Connection board to board aligned with each other. Captive locking screw into the body of the fitting With bracket	✓	✓		209	AS ES	JS RS	124 125
		KET	AET	425	Daughter board. Board to cable. Quarter turn locking on plug side	✓	✓		425	ET	RT	327

	HE8C209 KE/AE	HE8C223 KED/AED	HE8C425 KET/AET
A	Ø 3,5 [.138]	Ø 5 [.197]	Hex [0.197]
B	1 MAX [.039]	/	/
C	/	Ø 3,5 [.138]	M 2,5 [.098]
D	/	14 MAX [.551]	4,1 MAX [.161]
A'	Hex 4 [.157]	/	Hex 4 [.157]
E	1,6 to 2,4 [.063 to .094]	1,6 to 2,4 [.063 to .094]	/
F	3,35 [.132]	/	/
G	7,2 MAX [.283]	/	/

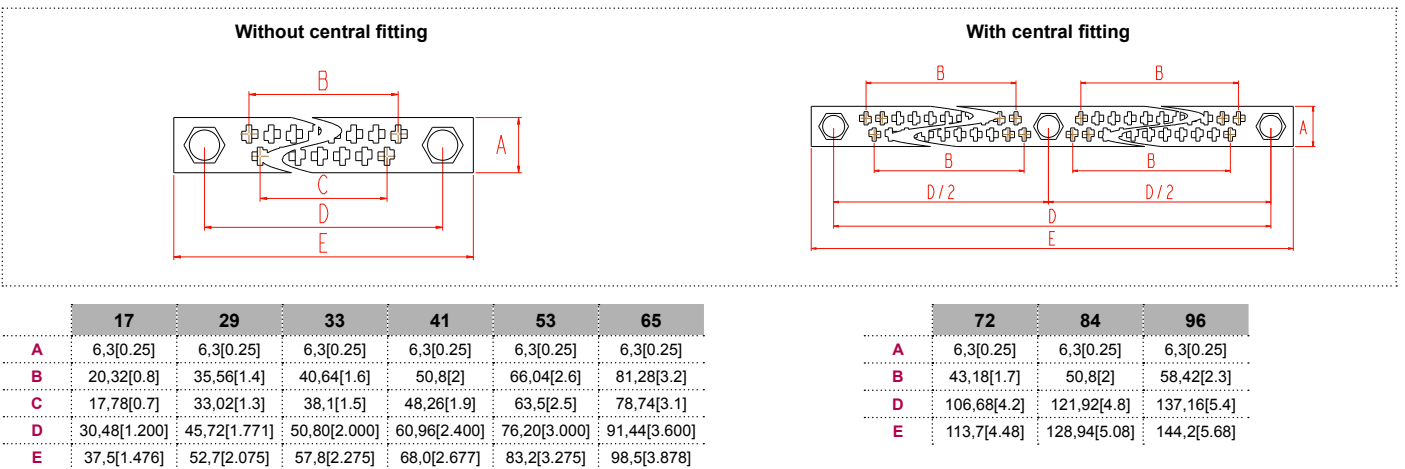
All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENTS & LAYOUTS

Arrangements - HE801 & HE804 - 3 rows



Arrangements - 2 rows

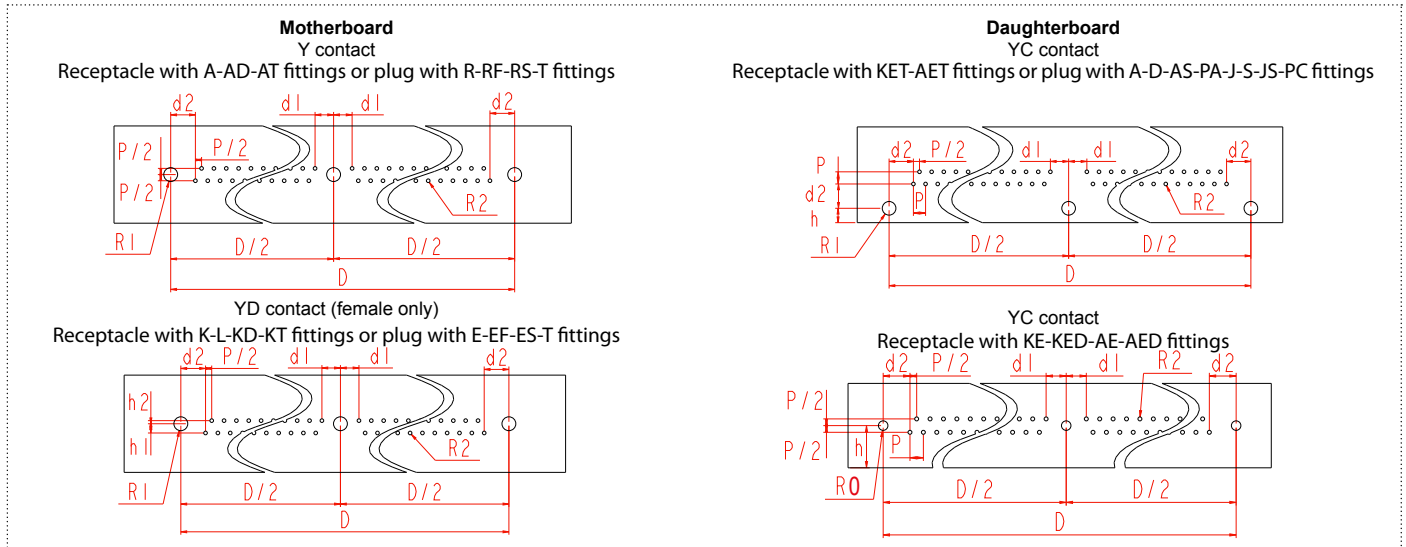


All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENTS & LAYOUTS

Layouts - 2 rows

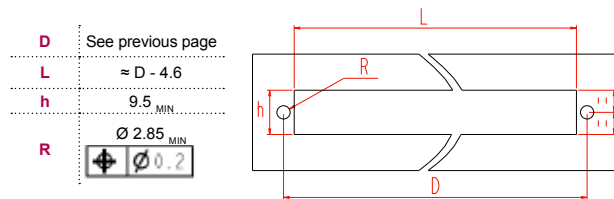
The boards are shown from the connector side. The drawings show connectors with central fitting.
For smaller connector, omit the center drilling. All contacts outputs are equidistant.



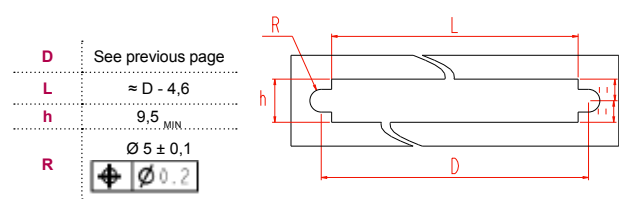
D	d ₁	d ₂	p	p ₂	h	h ₁	h ₂	h ₄	R ₀	R ₁	R ₂
See previous page	3,81 [.150]	5,08 [.200]	2,54 [.100]	1,27 [.050]	3 _{MAX} [.118]	1,9 [.075]	0,64 [.025]	8 _{MAX} [-315]	Ø 1,8 _{MIN} [.071]	Ø 2,85 _{MIN} [.112] ⊕ ⊖ Ø 0.2	Ø 0,75 _{MIN} [.030] ⊕ ⊖ Ø 0.2

Panel drilling - 2 rows

Receptacle with A-AD-AT fittings or plug with R-RF-RS-T fittings with male contact ZC-X
Receptacle with K-KD-KT-L fittings or plug with E-EF-ES-T fittings with female contact Z



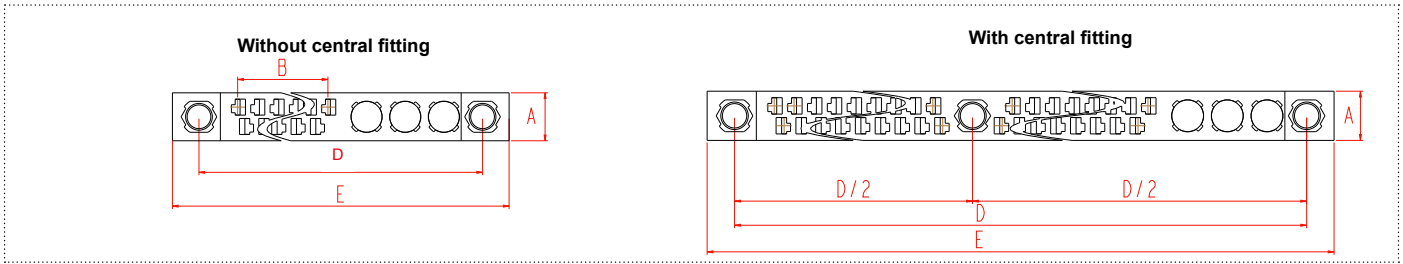
Receptacle with B fitting and male contact ZC-X
Receptacle with P fitting and female contact Z



All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENTS & LAYOUTS

Arrangements - signal + 3 cavities



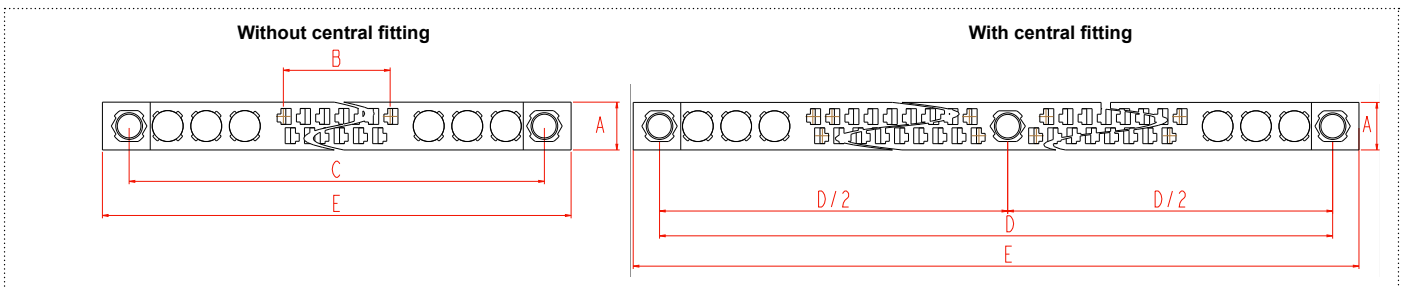
	5+3	17+3
A	6,3 ^{+0.1} [.25 ^{+.04}]	
B	5,08[0.2]	20,32[0.8]
D	30,48[1.2]	45,72[1.8]
E	37,48[1.48]	52,72[2.08]

Note:

- Asymmetrical arrangements with female contacts always have plug marking
- Asymmetrical arrangements with male contacts always have receptacle marking

	60+3	84+3
A	6,3[0.25]	6,3[0.25]
D	106,68[4.2]	137,16[5.4]
E	113,68[4.48]	144,16[5.68]

Arrangements - signal + 6 cavities

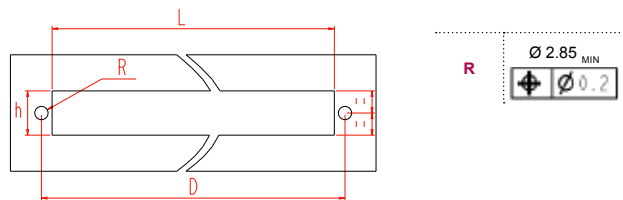


	5+6	17+6	29+6	41+6
A	6,3 ^{+0.1} [.25 ^{+.04}]			
B	5,08[0.2]	20,32[0.8]	35,56[1.4]	50,8[2]
C	45,72[1.8]	60,96[2.4]	76,2[3]	91,44[3.6]
D	52,72[2.08]	67,96[2.68]	83,2[3.28]	98,44[3.88]

	72+6
A	6,3[0.25]
D	137,16[5.4]
E	144,16[5.68]

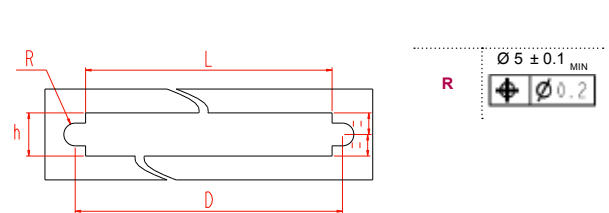
Panel drilling

F011 / M011-F021 / M021-F121 / M121-FH1 / MH1 contacts.



Receptacle with K-KD-KT fittings or plug with E-EF-ES fittings and male contacts ZC-X.
Receptacle with K-KD-KT fittings or plug with E-EF-ES fittings and female contacts ZC-X1.

F011 / M011-F021 / M021-F121 / M121-FH1 / MH1 contacts.



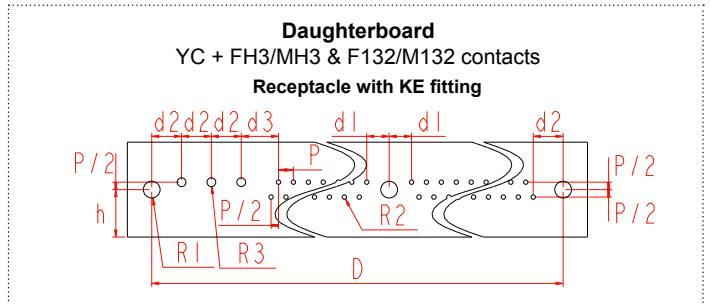
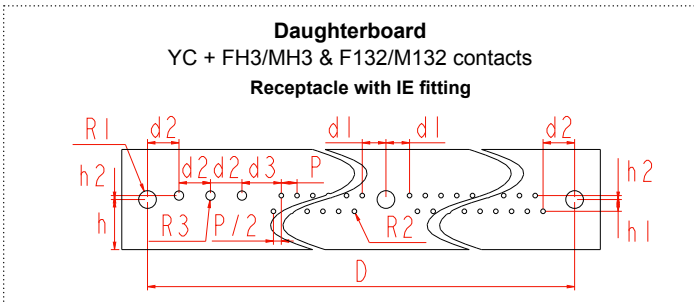
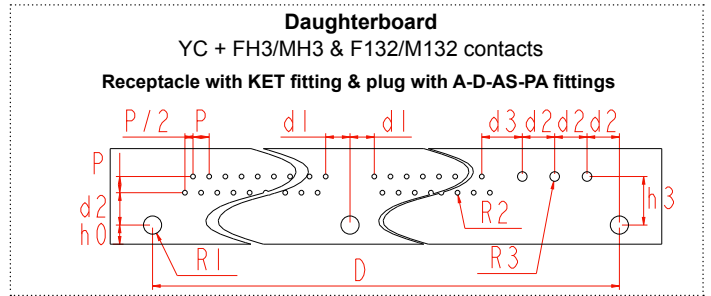
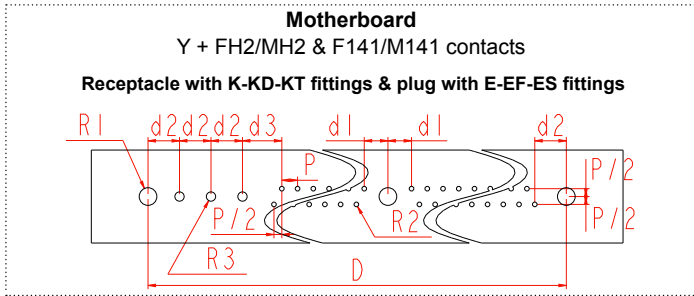
Receptacle with P fitting with male contacts ZC-X.
Receptacle with P fitting with female contact ZC-X1.

D	L	h	d ₁	d ₂	p	p ₂	h ₀	h ₁	h ₂	R ₁	R ₂
See above	D-4,6	9,5 _{MIN}	3,81 [.150]	5,08 [.200]	2,54 [.100]	1,27 [.050]	3 _{MAX} [.118]	1,9 [.075]	0,64 [.025]	Ø 2,85 _{MIN} [.112] ⊕ ⊖ 0.2	Ø 0,75 _{MIN} [.030] ⊕ ⊖ 0.2

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

ARRANGEMENTS & LAYOUTS

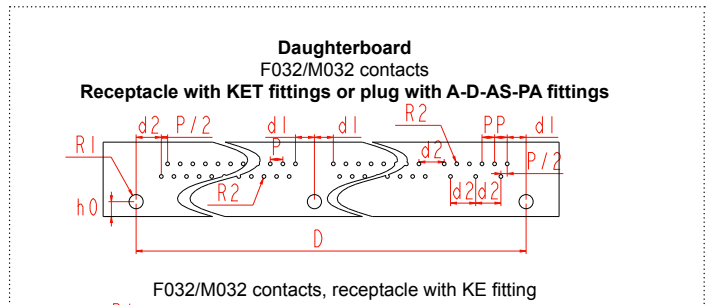
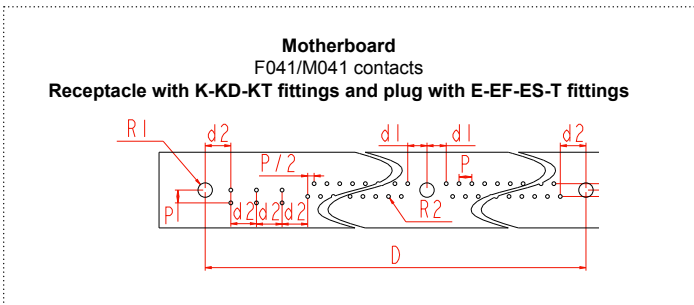
Layouts– Power



D	d ₁	d ₂	d ₃	p	p ₂	h ₀	h ₁	h ₂	h ₃	R ₁	R ₂	h
See previous page	3,81 [.150]	5,08 [.200]	6,35 [.250]	2,54 [.100]	1,27 [.050]	3 MAX [.118]	1,9 [.075]	0,64 [.025]	7,62 [.300]	Ø 2,85 MIN [.112]	Ø 0,75 MIN [.030]	9,35 [.368]

Layout - Coaxial

The boards are shown from the connector side. The drawings show connectors with a central fitting.
For smaller connector, omit the center drilling. All contacts outputs are equidistant.



F032/M032 contacts, receptacle with KE fitting

F032/M032 contacts, receptacle with IE fitting

D	d ₁	d ₂	p	p ₂	h ₀	h ₁	h ₂	R ₁	R ₂
See previous page	3,81 [.150]	5,08 [.200]	2,54 [.100]	1,27 [.050]	3 MAX [.118]	1,9 [.075]	0,64 [.025]	Ø 2,85 MIN [.112]	Ø 0,75 MIN [.030]

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TOOLING

Removal tools

Removal tool pin ZC/ X / YC

1272

- Rear release



Removal tool pin Y

24098

- Front release



Removal tool socket YC/Z/X1 (HE 801 & HE804)

1271

- Rear release



Removal tool socket YC/Z/X1 (HE 807)

24099

- Rear release



Removal tool socket Y/YD

20143

- Rear release



Removal tool socket particular contacts (HE 807)

23550

- Rear release



Insertion tools

Insertion tool pin X

1275

- Insertion on the same side as removal
- Eased contact insertion



Crimping tool pin X

HE 8 20 051

- AWG 26 to 22
- No additional turret



Crimping tool socket X1

809801

- AWG 26 to 22
- Additional turret: 127.800.030
- Military reference: M22520/2-01



All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

HOW TO ORDER - 127 SERIES

MILITARY PART NUMBER

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Series	Number of signal contacts	Fittings	Contact gender	Fitting material	Tail finish	Contact type	Connector type	Number of special contacts	Cavities marking
127	33	A	M	1	4	YC			

1. Series

127	2-row connector (HE801 & HE804)
127H	Hybrid connector (HE807)
127T	3-row connector

2. Number of signal contacts

127H	0	41
	5	60
	17	84
	29	
127	17	65
	29	84
	33	72
	41	96
127T	53	
	80	144

3. Fitting

For receptacle (X: no fitting)

Fitting	Keying	Locking
KD/AD/KED/AED/KT/AT/KET/AET	✓	✓
K/A/P/B/KE/EL	✓	X
S/D/SC/DC	X	✓

For plug (XL: no fitting)

Fitting	Keying	Locking
A/J/E/R	✓	X
PA/PC/T	X	X
D/S/EF/RF	X	✓
AS/JS/ES/RS/ET/RT	✓	✓

4. Contact gender

F	Female
M	Male

5. Fitting material

Blank	Nickel over brass
1	Passivated stainless steel

6. Tail finish

1	Tin lead on YC/Y/ZC/U/YL/YD & Gold on X/X1
4	Lead free ✓

7. Contact type

YC	Right angle PC tail
Y	Straight PC tail
YD	Straight PC tail (HE804 female only)
Z/ZC	Solder cup
X1/X	Crimp barrel

8. Connector type

Blank	HE804 connector
R	Male HE801 or HE807 connector
N	Female HE801 or HE807 connector

9. Number of special contacts (HE807 only)

3A	Special contacts
6A	
Blank	No special contact
10	Cavities marking
Blank	Standard
B	Reversed marking

10. Cavities marking

Blank	Standard
B	Reversed marking

HOW TO ORDER - HE8 SERIES

COMMERCIAL PART NUMBER

1.	2.	3.	4.	5.	6.	7.	8.
Series	Connector type	Number of contacts	Termination style	Stiffening bar	Special contacts	Fitting	Tail finish
HE 807	EN	17	Y0	A	3	212	3

1. Series

HE801	Signal only
HE804	
HE807	Hybrid (special contacts)

2. Connector type

FB	
FC	
FS	Female plug
FD	
FP	
FN	Male plug
EN	
EP	Male receptacle
ES	
EB	Female receptacle

3. Number of contacts

0	
5	
17	
29	HE807
41	
60	
84	
17	
29	
33	
41	
53	HE801 & HE804
65	
72	
84	
96	

4. Termination style

Y1	Right angle PC tail
Y0	Straight PC tail
Z1	Solder cup
S11	Crimp barrel
Blank	No signal contacts

5. Stiffening bar

A	Standard, without stiffening bar
B	With stiffening bar for connector with central fitting only

6. Special contacts

3 6	HE807 only
--------	------------

7. Fitting

	HE801	HE804	HE807	Keying	Locking	Comment
000				No fitting		
101	✓	✓	✓	✓	X	
102	✓	✓	✓	X	X	
103	✓	✓	✓	X	✓	Plug
110	X	✓	X	✓	X	Nickel over brass fitting
111	X	✓	X	✓	X	
112	X	✓	X	X	✓	
117	✓	✓	X	✓	X	For stainless steel fitting, replace the 1** by a 3** in the designation
118	✓	✓	X	✓	X	
119	✓	✓	X	X	✓	
124	✓	✓	✓	✓	✓	
125	✓	✓	✓	✓	✓	
327	✓	✓	✓	✓	✓	
201	X	✓	X	✓	X	
203	✓	✓	X	✓	X	
208	✓	X	✓	✓	X	
209	X	✓	X	✓	X	
212	✓	X	✓	✓	X	Receptacle
213	X	X	✓	X	✓	Nickel over brass fitting
219	✓	X	X	X	✓	
220	X	✓	X	X	✓	For stainless steel fitting, replace the 2** by a 4** in the designation
221	✓	✓	✓	✓	✓	
223	X	✓	X	✓	✓	
224	✓	X	✓	✓	✓	
226	X	X	✓	✓	X	
228	X	✓	X	✓	X	
422	✓	✓	✓	✓	✓	
425	✓	✓	✓	✓	✓	

8. Tail finish

3	Standard
2	S11 version

✓: RoHS compliant

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CROSS REF - HE8 SERIES - HE801

HE801 connectors with 2 fitting locations (17, 29, 33, 41, 53 and 65 contacts)				
Connectors delivered with fittings		Connectors delivered without fitting + 2 separate fittings to be order separately		
HE801 reference	127 reference	127 reference	and brass fittings	or stainless steel fittings
HE801 FB 17 Y1A 101 3	127 17 A F1YCN	127 17 XL F1YCN	HE8C101	HE8C301
HE801 FP 17 Y1A 101 3	127 17 J M1YCR	127 17 XL M1YCR	HE8C101	HE8C301
HE801 ES 17 Y0A 212 3	127 17 K F1YN	127 17 X F1YN	HE8C212	HE8C412
HE801 ES 17 Z1A 212 3	127 17 K F1ZN	127 17 X F1ZN	HE8C212	HE8C412
HE801 ES 17 S11A 212 2	127 17 K F1X1N	127 17 X F1X1N	HE8C212	HE8C412
HE801 EN 17 Y0A 212 3	127 17 A M1YR	127 17 X F1YR	HE8C212	HE8C412
HE801 EN 17 Z1A 212 3	127 17 A M1ZCR	127 17 X F1ZCR	HE8C212	HE8C412
HE801 ES 17 S11A 000 2	127 17 X F1X1N	127 17 XL F1X1N	NA	NA
HE801 FS 17 S11A 117 2	127 17 E F1X1N	127 17 XL F1X1N	HE8C117	HE8C317
HE801 FS 17 S11A 000 2	127 17 XL F1X1N	127 17 XL F1X1N	NA	NA
HE801 EN 17 Y0A 000 3	127 17 X M1YR	127 17 X M1YR	NA	NA
HE801 FN 17 Y0A 117 3	127 17 R M1YR	127 17 XL M1YR	HE8C117	HE8C317
HE801 FN 17 Y0A 119 3	127 17 RF M1YR	127 17 XL M1YR	HE8C119	HE8C319
HE801 FN 17 Y0A 125 3	127 17 RS M1YR	127 17 XL M1YR	HE8C125	HE8C325
HE801 EN 17 Y0A 203 3	127 17 B M1YR	127 17 X M1YR	HE8C203	HE8C403
HE801 FN 17 Y0A 000 3	127 17 XL M1YR	127 17 XL M1YR	NA	NA
HE801 FB 17 Y1A 000 3	127 17 XL F1YCN	127 17 XL F1YCN	NA	NA
HE801 FB 17 Y1A 102 3	127 17 PA F1YCN	127 17 XL F1YCN	HE8C102	HE8C302
HE801 FB 17 Y1A 103 3	127 17 D F1YCN	127 17 XL F1YCN	HE8C103	HE8C303
HE801 EB 17 Y1A 208 3	127 17 KE F1YCN	127 17 X F1YCN	HE8C208	HE8C408
HE801 EB 17 Y1A 000 3	127 17 X F1YCN	127 17 X F1YCN	NA	NA
HE801 FP 17 Y1A 000 3	127 17 XL M1YCR	127 17 XL M1YCR	NA	NA
HE801 FP 17 Y1A 102 3	127 17 PC M1YCR	127 17 XL M1YCR	HE8C102	HE8C302
HE801 FP 17 Y1A 103 3	127 17 S M1YCR	127 17 XL M1YCR	HE8C103	HE8C303
HE801 EP 17 Y1A 208 3	127 17 AE M1YCR	127 17 X M1YCR	HE8C208	HE8C408
HE801 EP 17 Y1A 000 3	127 17 X M1YCR	127 17 X M1YCR	NA	NA
HE801 ES 17 Y0A 000 3	127 17 X F1YN	127 17 X F1YN	NA	NA
HE801 FS 17 Y0A 117 3	127 17 E F1YN	127 17 XL F1YN	HE8C117	HE8C317
HE801 FS 17 Y0A 119 3	127 17 EF F1YN	127 17 XL F1YN	HE8C119	HE8C319
HE801 FS 17 Y0A 125 3	127 17 ES F1YN	127 17 XL F1YN	HE8C125	HE8C325
HE801 FS 17 Y0A 000 3	127 17 XL F1YN	127 17 XL F1YN	NA	NA
HE801 ES 17 Z1A 000 3	127 17 X F1ZN	127 17 X F1ZN	NA	NA
HE801 FS 17 Z1A 117 3	127 17 E F1ZN	127 17 XL F1ZN	HE8C117	HE8C317
HE801 FS 17 Z1A 119 3	127 17 EF F1ZN	127 17 XL F1ZN	HE8C119	HE8C319
HE801 FS 17 Z1A 125 3	127 17 ES F1ZN	127 17 XL F1ZN	HE8C125	HE8C325
HE801 FS 17 Z1A 000 3	127 17 XL F1ZN	127 17 XL F1ZN	NA	NA
HE801 EN 17 Z1A 000 3	127 17 X M1ZCR	127 17 X M1ZCR	NA	NA
HE801 FN 17 Z1A 117 3	127 17 R M1ZCR	127 17 XL M1ZCR	HE8C117	HE8C317
HE801 FN 17 Z1A 119 3	127 17 RF M1ZCR	127 17 XL M1ZCR	HE8C119	HE8C319
HE801 FN 17 Z1A 125 3	127 17 RS M1ZCR	127 17 XL M1ZCR	HE8C125	HE8C325
HE801 EN 17 Z1A 203 3	127 17 B M1ZCR	127 17 X M1ZCR	HE8C203	HE8C403
HE801 EN 17 Z1A 219 3	127 17 D M1ZCR	127 17 X M1ZCR	HE8C219	HE8C419
HE801 FN 17 Z1A 000 3	127 17 XL M1ZCR	127 17 XL M1ZCR	NA	NA

All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

CROSS REF - HE8 SERIES - HE801

HE801 connectors with 3 fitting locations (72, 84 and 96 contacts)						
Connectors delivered with fittings		Connectors delivered without fitting + 3 separate fittings to be order separately				
HE 801 references	127 reference	127 reference	and brass fittings		or stainless steel fittings	
			2 extremity fittings	1 central fitting	2 extremity fittings	1 central fitting
HE801 FB 72 Y1A 101 3	127 72 A F1YCN	127 72 XL F1YCN	HE8C101	HE8C102	HE8C301	HE8C302
HE801 FP 72 Y1A 101 3	127 72 J M1YCR	127 72 XL M1YCR	HE8C101	HE8C102	HE8C301	HE8C302
HE801 ES 72 Y0A 212 3	127 72 K F1YN	127 72 X F1YN	HE8C212	HE8C229	HE8C412	HE8C429
HE801 ES 72 Z1B 212 3	127 72 K F1ZN	127 72 X F1ZN	HE8C212	HE8C229	HE8C412	HE8C429
HE801 FS 72 S1A 212 2	127 72 K F1X1N	127 72 X F1X1N	HE8C212	HE8C229	HE8C412	HE8C429
HE801 EN 72 Y0A 212 3	127 72 A M1YR	127 72 X M1YR	HE8C212	HE8C229	HE8C412	HE8C429
HE801 EN 72 Z1B 212 3	127 72 A M1ZCR	127 72 X M1ZCR	HE8C212	HE8C229	HE8C412	HE8C429
HE801 ES 72 S1B 000 2	127 72 X F1X1N	127 72 X F1X1N	NA	NA	NA	NA
HE801 FS 72 S1B 117 2	127 72 E F1X1N	127 72 XL F1X1N	HE8C117	HE8C129	HE8C317	HE8C329
HE801 FS 72 S1B 000 2	127 72 XL F1X1N	127 72 XL F1X1N	NA	NA	NA	NA
HE801 EN 72 Y0A 000 3	127 72 X M1YR	127 72 X M1YR	NA	NA	NA	NA
HE801 FN 72 Y0A 117 3	127 72 R M1YR	127 72 XL M1YR	HE8C117	HE8C129	HE8C317	HE8C329
HE801 FN 72 Y0A 119 3	127 72 RF M1YR	127 72 XL M1YR	HE8C119	HE8C129	HE8C319	HE8C329
HE801 FN 72 Y0A 125 3	127 72 RS M1YR	127 72 XL M1YR	HE8C125	HE8C129	HE8C325	HE8C329
HE801 EN 72 Y0A 203 3	127 72 B M1YR	127 72 X M1YR	HE8C203	HE8C229	HE8C403	HE8C429
HE801 FN 72 Y0A 000 3	127 72 XL M1YR	127 72 XL M1YR	NA	NA	NA	NA
HE801 FB 72 Y1A 000 3	127 72 XL F1YCN	127 72 XL F1YCN	NA	NA	NA	NA
HE801 FB 72 Y1A 102 3	127 72 PA F1YCN	127 72 XL F1YCN	HE8C102	HE8C102	HE8C302	HE8C302
HE801 FB 72 Y1A 103 3	127 72 D F1YCN	127 72 XL F1YCN	HE8C103	HE8C102	HE8C303	HE8C302
HE801 EB 72 Y1A 208 3	127 72 KE F1YCN	127 72 X F1YCN	HE8C208	HE8C208	HE8C408	HE8C408
HE801 EB 72 Y1A 000 3	127 72 X F1YCN	127 72 X F1YCN	NA	NA	NA	NA
HE801 FP 72 Y1A 000 3	127 72 XL M1YCR	127 72 XL M1YCR	NA	NA	NA	NA
HE801 FP 72 Y1A 102 3	127 72 PC M1YCR	127 72 XL M1YCR	HE8C102	HE8C102	HE8C302	HE8C302
HE801 FP 72 Y1A 103 3	127 72 S M1YCR	127 72 XL M1YCR	HE8C103	HE8C102	HE8C303	HE8C302
HE801 EP 72 Y1A 208 3	127 72 AE M1YCR	127 72 X M1YCR	HE8C208	HE8C208	HE8C408	HE8C408
HE801 EP 72 Y1A 000 3	127 72 X M1YCR	127 72 X M1YCR	NA	NA	NA	NA
HE801 ES 72 Y0A 000 3	127 72 X F1YN	127 72 X F1YN	NA	NA	NA	NA
HE801 FS 72 Y0A 117 3	127 72 E F1YN	127 72 XL F1YN	HE8C117	HE8C129	HE8C317	HE8C329
HE801 FS 72 Y0A 119 3	127 72 EF F1YN	127 72 XL F1YN	HE8C119	HE8C129	HE8C319	HE8C329
HE801 FS 72 Y0A 125 3	127 72 ES F1YN	127 72 XL F1YN	HE8C125	HE8C129	HE8C325	HE8C329
HE801 FS 72 Y0A 000 3	127 72 XL F1YN	127 72 XL F1YN	NA	NA	NA	NA
HE801 ES 72 Z1B 000 3	127 72 X F1ZN	127 72 X F1ZN	NA	NA	NA	NA
HE801 FS 72 Z1B 117 3	127 72 E F1ZN	127 72 XL F1ZN	HE8C117	HE8C129	HE8C317	HE8C329
HE801 FS 72 Z1B 119 3	127 72 EF F1ZN	127 72 XL F1ZN	HE8C119	HE8C129	HE8C319	HE8C329
HE801 FS 72 Z1B 125 3	127 72 ES F1ZN	127 72 XL F1ZN	HE8C125	HE8C129	HE8C325	HE8C329
HE801 FS 72 Z1B 000 3	127 72 XL F1ZN	127 72 XL F1ZN	NA	NA	NA	NA
HE801 EN 72 Z1B 000 3	127 72 X M1ZCR	127 72 X M1ZCR	NA	NA	NA	NA
HE801 FN 72 Z1B 117 3	127 72 R M1ZCR	127 72 XL M1ZCR	HE8C117	HE8C129	HE8C317	HE8C329
HE801 FN 72 Z1B 119 3	127 72 RF M1ZCR	127 72 XL M1ZCR	HE8C119	HE8C129	HE8C319	HE8C329
HE801 FN 72 Z1B 125 3	127 72 RS M1ZCR	127 72 XL M1ZCR	HE8C125	HE8C129	HE8C325	HE8C329
HE801 EN 72 Z1B 203 3	127 72 B M1ZCR	127 72 X M1ZCR	HE8C203	HE8C229	HE8C403	HE8C429
HE801 EN 72 Z1B 219 3	127 72 D M1ZCR	127 72 X M1ZCR	NA	NA	NA	NA
HE801 FN 72 Z1B 000 3	127 72 XL M1ZCR	127 72 XL M1ZCR	NA	NA	NA	NA
HE801 ES 72 Z1A 000 3	127 72 X FA1ZN	127 72 X FA1ZN	NA	NA	NA	NA
HE801 ES 72 Z1A 212 3	127 72 K FA1ZN	127 72 X FA1ZN	HE8C212	HE8C229	HE8C412	HE8C429
HE801 FS 72 Z1A 117 3	127 72 E FA1ZN	127 72 XL FA1ZN	HE8C117	HE8C129	HE8C317	HE8C329
HE801 FS 72 Z1A 000 3	127 72 XL FA1ZN	127 72 XL FA1ZN	NA	NA	NA	NA
HE801 EN 72 Z1A 000 3	127 72 X MA1ZCR	127 72 X MA1ZCR	NA	NA	NA	NA
HE801 EN 72 Z1A 212 3	127 72 A MA1ZCR	127 72 X MA1ZCR	HE8C212	HE8C229	HE8C412	HE8C429
HE801 FN 72 Z1A 000 3	127 72 XL MA1ZCR	127 72 XL MA1ZCR	NA	NA	NA	NA

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CROSS REF - HE8 SERIES - HE804

HE804 connectors with 2 fitting locations (17, 29, 33, 41, 53 and 65 contacts)				
Connectors delivered with fittings		Connectors delivered without fitting + 2 separate fittings to be order separately		
HE804 reference	127 reference	127 reference	and brass fittings	or stainless steel fittings
HE804 ES 17 S11B 000 2	127 17 X F1X1	127 17 X F1X1	NA	NA
HE804 FS 17 S11B 110 2	127 17 E F1X1	127 17 XL F1X1	HE8C110	HE8C310
HE804 FS 17 S11B 112 2	127 17 EF F1X1	127 17 XL F1X1	HE8C112	HE8C312
HE804 FS 17 S11B 125 2	127 17 ES F1X1	127 17 XL F1X1	HE8C125	HE8C325
HE804 ES 17 S11B 201 2	127 17 K F1X1	127 17 X F1X1	HE8C201	HE8C401
HE804 EN 17 S21B 000 2	127 17 X M1X	127 17 X M1X	NA	NA
HE804 FN 17 S21B 110 2	127 17 R M1X	127 17 XL M1X	HE8C110	HE8C310
HE804 FN 17 S21B 112 2	127 17 RF M1X	127 17 XL M1X	HE8C112	HE8C312
HE804 FN 17 S21B 125 2	127 17 RS M1X	127 17 XL M1X	HE8C125	HE8C325
HE804 EN 17 S21B 201 2	127 17 A M1X	127 17 X M1X	HE8C201	HE8C401
HE804 EN 17 S21B 203 2	127 17 B M1X	127 17 X M1X	HE8C203	HE8C403
HE804 EN 17 S21B 220 2	127 17 D M1X	127 17 X M1X	HE8C220	HE8C420
HE804 EN 17 Y0A 000 3	127 17 X M1Y	127 17 X M1Y	NA	NA
HE804 FN 17 Y0A 110 3	127 17 R M1Y	127 17 XL M1Y	HE8C110	HE8C310
HE804 FN 17 Y0A 112 3	127 17 RF M1Y	127 17 XL M1Y	HE8C112	HE8C312
HE804 FN 17 Y0A 125 3	127 17 RS M1Y	127 17 XL M1Y	HE8C125	HE8C325
HE804 EN 17 Y0A 201 3	127 17 A M1Y	127 17 X M1Y	HE8C201	HE8C401
HE804 EN 17 Y0A 203 3	127 17 B M1Y	127 17 X M1Y	HE8C203	HE8C403
HE804 FB 17 Y1A 000 3	127 17 XL F1YC	127 17 XL F1YC	NA	NA
HE804 FB 17 Y1A 101 3	127 17 A F1YC	127 17 XL F1YC	HE8C101	HE8C301
HE804 FB 17 Y1A 102 3	127 17 PA F1YC	127 17 XL F1YC	HE8C102	HE8C302
HE804 FB 17 Y1A 103 3	127 17 D F1YC	127 17 XL F1YC	HE8C103	HE8C303
HE804 EB 17 Y1A 209 3	127 17 KE F1YC	127 17 X F1YC	HE8C209	HE8C409
HE804 FP 17 Y1A 000 3	127 17 XL M1YC	127 17 XL M1YC	NA	NA
HE804 FP 17 Y1A 101 3	127 17 J M1YC	127 17 XL M1YC	HE8C101	HE8C301
HE804 FP 17 Y1A 102 3	127 17 PC M1YC	127 17 XL M1YC	HE8C102	HE8C302
HE804 FP 17 Y1A 103 3	127 17 S M1YC	127 17 XL M1YC	HE8C103	HE8C303
HE804 EP 17 Y1A 209 3	127 17 AE M1YC	127 17 X M1YC	HE8C209	HE8C409
HE804 ES 17 Y0A 000 3	127 17 X F1YD	127 17 X F1YD	NA	NA
HE804 FS 17 Y0A 110 3	127 17 E F1YD	127 17 XL F1YD	HE8C110	HE8C310
HE804 FS 17 Y0A 112 3	127 17 EF F1YD	127 17 XL F1YD	HE8C112	HE8C312
HE804 FS 17 Y0A 125 3	127 17 ES F1YD	127 17 XL F1YD	HE8C125	HE8C325
HE804 ES 17 Y0A 201 3	127 17 K F1YD	127 17 X F1YD	HE8C201	HE8C401
HE804 ES 17 Z1A 000 3	127 17 X F1Z	127 17 X F1Z	NA	NA
HE804 FS 17 Z1A 110 3	127 17 E F1Z	127 17 XL F1Z	HE8C110	HE8C310
HE804 FS 17 Z1A 112 3	127 17 EF F1Z	127 17 XL F1Z	HE8C112	HE8C312
HE804 FS 17 Z1A 125 3	127 17 ES F1Z	127 17 XL F1Z	HE8C125	HE8C325
HE804 ES 17 Z1A 201 3	127 17 K F1Z	127 17 X F1Z	HE8C201	HE8C401
HE804 EN 17 Z1A 000 3	127 17 X M1ZC	127 17 X M1ZC	NA	NA
HE804 FN 17 Z1A 110 3	127 17 R M1ZC	127 17 XL M1ZC	HE8C110	HE8C310
HE804 FN 17 Z1A 112 3	127 17 RF M1ZC	127 17 XL M1ZC	HE8C112	HE8C312
HE804 FN 17 Z1A 125 3	127 17 RS M1ZC	127 17 XL M1ZC	HE8C125	HE8C325
HE804 EN 17 Z1A 201 3	127 17 A M1ZC	127 17 X M1ZC	HE8C201	HE8C401
HE804 EN 17 Z1A 203 3	127 17 B M1ZC	127 17 X M1ZC	HE8C203	HE8C403
HE804 EN 17 Z1A 220 3	127 17 D M1ZC	127 17 X M1ZC	HE8C220	HE8C420

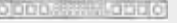
All dimensions are given for information only and are in mm [inch], except as otherwise specified | *in mm: 1mm=0.03937 inch

CROSS REF - HE8 SERIES - HE804

HE804 connectors with 3 fitting locations (72, 84 and 96 contacts)						
Connectors delivered with fittings		Connectors delivered without fitting + 3 separate fittings to be order separately				
HE 804 references	127 reference	127 reference	and brass fittings		or stainless steel fittings	
			2 extremity fittings	1 central fitting	2 extremity fittings	1 central fitting
HE804 ES 72 S11A 000 2	127 72 X F1X1	127 72 X F1X1	NA	NA	NA	NA
HE804 FS 72 S11A 110 2	127 72 E F1X1	127 72 XL F1X1	HE8C110	HE8C113	HE8C310	HE8C313
HE804 FS 72 S11A 112 2	127 72 EF F1X1	127 72 XL F1X1	HE8C112	HE8C113	HE8C312	HE8C313
HE804 FS 72 S11A 125 2	127 72 ES F1X1	127 72 XL F1X1	HE8C125	HE8C113	HE8C325	HE8C313
HE804 ES 72 S11A 201 2	127 72 K F1X1	127 72 X F1X1	HE8C201	HE8C202	HE8C401	HE8C402
HE804 EN 72 S21A 000 2	127 72 X M1X	127 72 X M1X	NA	NA	NA	NA
HE804 FN 72 S21A 110 2	127 72 R M1X	127 72 XL M1X	HE8C110	HE8C113	HE8C310	HE8C313
HE804 FN 72 S21A 112 2	127 72 RF M1X	127 72 XL M1X	HE8C112	HE8C113	HE8C312	HE8C313
HE804 FN 72 S21A 125 2	127 72 RS M1X	127 72 XL M1X	HE8C125	HE8C113	HE8C325	HE8C313
HE804 EN 72 S21A 201 2	127 72 A M1X	127 72 X M1X	HE8C201	HE8C202	HE8C401	HE8C402
HE804 EN 72 S21A 203 2	127 72 B M1X	127 72 X M1X	HE8C203	HE8C202	HE8C403	HE8C402
HE804 EN 72 S21A 220 2	127 72 D M1X	127 72 X M1X	HE8C220	HE8C202	HE8C420	HE8C402
HE804 EN 72 Y0A 000 3	127 72 X M1Y	127 72 X M1Y	NA	NA	NA	NA
HE804 FN 72 Y0A 110 3	127 72 R M1Y	127 72 XL M1Y	HE8C110	HE8C113	HE8C310	HE8C313
HE804 FN 72 Y0A 112 3	127 72 RF M1Y	127 72 XL M1Y	HE8C112	HE8C113	HE8C312	HE8C313
HE804 FN 72 Y0A 125 3	127 72 RS M1Y	127 72 XL M1Y	HE8C125	HE8C113	HE8C325	HE8C313
HE804 EN 72 Y0A 201 3	127 72 A M1Y	127 72 X M1Y	HE8C201	HE8C202	HE8C401	HE8C402
HE804 EN 72 Y0A 203 3	127 72 B M1Y	127 72 X M1Y	HE8C203	HE8C202	HE8C403	HE8C402
HE804 FB 72 Y1A 000 3	127 72 XL F1YC	127 72 XL F1YC	NA	NA	NA	NA
HE804 FB 72 Y1A 101 3	127 72 A F1YC	127 72 XL F1YC	HE8C101	HE8C102	HE8C301	HE8C302
HE804 FB 72 Y1A 102 3	127 72 PA F1YC	127 72 XL F1YC	HE8C102	HE8C102	HE8C302	HE8C302
HE804 FB 72 Y1A 103 3	127 72 D F1YC	127 72 XL F1YC	HE8C103	HE8C102	HE8C303	HE8C302
HE804 EB 72 Y1A 209 3	127 72 KE F1YC	127 72 X F1YC	HE8C209	HE8C209	HE8C409	HE8C409
HE804 FP 72 Y1A 000 3	127 72 XL M1YC	127 72 XL M1YC	NA	NA	NA	NA
HE804 FP 72 Y1A 101 3	127 72 J M1YC	127 72 XL M1YC	HE8C101	HE8C102	HE8C301	HE8C302
HE804 FP 72 Y1A 102 3	127 72 PC M1YC	127 72 XL M1YC	HE8C102	HE8C102	HE8C302	HE8C302
HE804 FP 72 Y1A 103 3	127 72 S M1YC	127 72 XL M1YC	HE8C103	HE8C102	HE8C303	HE8C302
HE804 EP 72 Y1A 209 3	127 72 AE M1YC	127 72 X M1YC	HE8C209	HE8C209	HE8C409	HE8C409
HE804 ES 72 Y0A 000 3	127 72 X F1YD	127 72 X F1YD	NA	NA	NA	NA
HE804 FS 72 Y0A 110 3	127 72 E F1YD	127 72 XL F1YD	HE8C110	HE8C113	HE8C310	HE8C313
HE804 FS 72 Y0A 112 3	127 72 F F1YD	127 72 XL F1YD	HE8C112	HE8C113	HE8C312	HE8C313
HE804 FS 72 Y0A 125 3	127 72 ES F1YD	127 72 XL F1YD	HE8C125	HE8C113	HE8C325	HE8C313
HE804 ES 72 Y0A 201 3	127 72 K F1YD	127 72 X F1YD	HE8C201	HE8C202	HE8C401	HE8C402
HE804 ES 72 Z1B 000 3	127 72 X F1Z	127 72 X F1Z	NA	NA	NA	NA
HE804 FS 72 Z1B 110 3	127 72 E F1Z	127 72 XL F1Z	HE8C110	HE8C113	HE8C310	HE8C313
HE804 FS 72 Z1B 112 3	127 72 EF F1Z	127 72 XL F1Z	HE8C112	HE8C113	HE8C312	HE8C313
HE804 FS 72 Z1B 125 3	127 72 ES F1Z	127 72 XL F1Z	HE8C125	HE8C113	HE8C325	HE8C313
HE804 ES 72 Z1B 201 3	127 72 K F1Z	127 72 X F1Z	HE8C201	HE8C202	HE8C401	HE8C402
HE804 EN 72 Z1B 000 3	127 72 X M1ZC	127 72 X M1ZC	NA	NA	NA	NA
HE804 FN 72 Z1B 110 3	127 72 R M1ZC	127 72 XL M1ZC	HE8C110	HE8C113	HE8C310	HE8C313
HE804 FN 72 Z1B 112 3	127 72 RF M1ZC	127 72 XL M1ZC	HE8C112	HE8C113	HE8C312	HE8C313
HE804 FN 72 Z1B 125 3	127 72 RS M1ZC	127 72 XL M1ZC	HE8C125	HE8C113	HE8C325	HE8C313
HE804 EN 72 Z1B 201 3	127 72 A M1ZC	127 72 X M1ZC	HE8C201	HE8C202	HE8C401	HE8C402
HE804 EN 72 Z1B 203 3	127 72 B M1ZC	127 72 X M1ZC	HE8C203	HE8C202	HE8C403	HE8C402
HE804 EN 72 Z1B 220 3	127 72 D M1ZC	127 72 X M1ZC	HE8C220	HE8C202	HE8C420	HE8C402
HE804 ES 72 Z1A 000 3	127 72 X FA1Z	127 72 X FA1Z	NA	NA	NA	NA
HE804 FS 72 Z1A 110 3	127 72 E FA1Z	127 72 XL FA1Z	HE8C110	HE8C113	HE8C310	HE8C313
HE804 FS 72 Z1A 112 3	127 72 F FA1Z	127 72 XL FA1Z	HE8C112	HE8C113	HE8C312	HE8C313
HE804 FS 72 Z1A 125 3	127 72 ES FA1Z	127 72 XL FA1Z	HE8C125	HE8C113	HE8C325	HE8C313
HE804 ES 72 Z1A 201 3	127 72 K FA1Z	127 72 X FA1Z	HE8C201	HE8C202	HE8C401	HE8C402
HE804 EN 72 Z1A 000 3	127 72 X MA1ZC	127 72 X MA1ZC	NA	NA	NA	NA
HE804 FN 72 Z1A 110 3	127 72 R MA1ZC	127 72 XL MA1ZC	HE8C110	HE8C113	HE8C310	HE8C313
HE804 FN 72 Z1A 112 3	127 72 RF MA1ZC	127 72 XL MA1ZC	HE8C112	HE8C113	HE8C312	HE8C313
HE804 FN 72 Z1A 125 3	127 72 RS MA1ZC	127 72 XL MA1ZC	HE8C125	HE8C113	HE8C325	HE8C313
HE804 EN 72 Z1A 201 3	127 72 A MA1ZC	127 72 X MA1ZC	HE8C201	HE8C202	HE8C401	HE8C402
HE804 EN 72 Z1A 203 3	127 72 B MA1ZC	127 72 X MA1ZC	HE8C203	HE8C202	HE8C403	HE8C402
HE804 EN 72 Z1A 220 3	127 72 D MA1ZC	127 72 X MA1ZC	HE8C220	HE8C202	HE8C420	HE8C402

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CROSS REF - HE8 SERIES - HE807

HE807 connectors with 2 fitting locations				
Connectors delivered with fittings		Connectors delivered without fitting + 2 separate fittings to be order separately		
HE807 reference	127 reference	127 reference	and brass fittings	or stainless steel fittings
Asymetrical arrangements 				
HE807 FB 17 Y1A 3 000 3	127H 17 XL F1YCN 3A	127H 17 XL F1YCN 3A	NA	NA
HE807 FB 17 Y1A 3 101 3	127H 17 A F1YCN 3A	127H 17 XL F1YCN 3A	HE8C101	HE8C301
HE807 FB 17 Y1A 3 102 3	127H 17 PA F1YCN 3A	127H 17 XL F1YCN 3A	HE8C102	HE8C302
HE807 FB 17 Y1A 3 103 3	127H 17 D F1YCN 3A	127H 17 XL F1YCN 3A	HE8C103	HE8C303
HE807 FB 17 Y1A 3 206 3	127H 17 IE F1YCN 3AB	127H 17 XL F1YCN 3A	HE8C206	HE8C406
HE807 FB 17 Y1A 3 208 3	127H 17 KE F1YCN 3AB	127H 17 XL F1YCN 3A	HE8C208	HE8C408
HE807 EP 17 Y1A 3 000 3	127H 17 X M1YCR 3A	127H 17 X M1YCR 3A	NA	NA
HE807 EP 17 Y1A 3 101 3	127H 17 A M1YCR 3AB	127H 17 X M1YCR 3A	HE8C101	HE8C301
HE807 EP 17 Y1A 3 102 3	127H 17 PA M1YCR 3AB	127H 17 X M1YCR 3A	HE8C102	HE8C302
HE807 EP 17 Y1A 3 103 3	127H 17 D M1YCR 3AB	127H 17 X M1YCR 3A	HE8C103	HE8C303
HE807 EP 17 Y1A 3 206 3	127H 17 IE M1YCR 3A	127H 17 X M1YCR 3A	HE8C206	HE8C406
HE807 EP 17 Y1A 3 208 3	127H 17 KE M1YCR 3A	127H 17 X M1YCR 3A	HE8C208	HE8C408
HE807 EN 17 Y0A 3 000 3	127H 17 X M1YR 3A	127H 17 X M1YR 3A	NA	NA
HE807 EN 17 Y0A 3 212 3	127H 17 K M1YR 3A	127H 17 X M1YR 3A	HE8C212	HE8C412
HE807 EN 17 Y0A 3 213 3	127H 17 S M1YR 3A	127H 17 X M1YR 3A	HE8C213	HE8C413
HE807 EN 17 Y0A 3 117 3	127H 17 E M1YR 3AB	127H 17 X M1YR 3A	HE8C117	HE8C317
HE807 FS 17 Y0A 3 000 3	127H 17 XL F1YN 3A	127H 17 XL F1YN 3A	NA	NA
HE807 FS 17 Y0A 3 117 3	127H 17 E F1YN 3A	127H 17 XL F1YN 3A	HE8C117	HE8C317
HE807 FS 17 Y0A 3 212 3	127H 17 K F1YN 3AB	127H 17 XL F1YN 3A	HE8C212	HE8C412
HE807 FS 17 Y0A 3 213 3	127H 17 S F1YN 3AB	127H 17 XL F1YN 3A	HE8C213	HE8C413
HE807 EN 17 Z1A 3 000 3	127H 17 X M1ZCR 3A	127H 17 X M1ZCR 3A	NA	NA
HE807 EN 17 Z1A 3 212 3	127H 17 K M1ZCR 3A	127H 17 X M1ZCR 3A	HE8C212	HE8C412
HE807 EN 17 Z1A 3 213 3	127H 17 S M1ZCR 3A	127H 17 X M1ZCR 3A	HE8C213	HE8C413
HE807 EN 17 Z1A 3 117 3	127H 17 E M1ZCR 3AB	127H 17 X M1ZCR 3A	HE8C117	HE8C317
HE807 FS 17 Z1A 3 000 3	127H 17 XL F1ZN 3A	127H 17 XL F1ZN 3A	NA	NA
HE807 FS 17 Z1A 3 117 3	127H 17 E F1ZN 3A	127H 17 XL F1ZN 3A	HE8C117	HE8C417
HE807 FS 17 Z1A 3 212 3	127H 17 K F1ZN 3AB	127H 17 XL F1ZN 3A	HE8C212	HE8C412
HE807 FS 17 Z1A 3 213 3	127H 17 S F1ZN 3AB	127H 17 XL F1ZN 3A	HE8C213	HE8C413
Symetrical arrangements 				
HE807 FB 17 Y1A 6 000 3	127H 17 XL F1YCN 6A	127H 17 XL F1YCN 6A	NA	NA
HE807 FB 17 Y1A 6 101 3	127H 17 A F1YCN 6A	127H 17 XL F1YCN 6A	HE8C101	HE8C301
HE807 FB 17 Y1A 6 102 3	127H 17 PA F1YCN 6A	127H 17 XL F1YCN 6A	HE8C102	HE8C302
HE807 FB 17 Y1A 6 103 3	127H 17 D F1YCN 6A	127H 17 XL F1YCN 6A	HE8C103	HE8C303
HE807 EB 17 Y1A 6 206 3	127H 17 IE F1YCN 6A	127H 17 X F1YCN 6A	HE8C206	HE8C406
HE807 EB 17 Y1A 6 208 3	127H 17 KE F1YCN 6A	127H 17 X F1YCN 6A	HE8C208	HE8C408
HE807 EP 17 Y1A 6 000 3	127H 17 X F1YCN 6A	127H 17 X F1YCN 6A	NA	NA
HE807 FP 17 Y1A 6 101 3	127H 17 A M1YCR 6A	127H 17 XL M1YCR 6A	HE8C101	HE8C301
HE807 FP 17 Y1A 6 000 3	127H 17 XL M1YCR 6A	127H 17 XL M1YCR 6A	NA	NA
HE807 EP 17 Y1A 6 208 3	127H 17 KE M1YCR 6A	127H 17 X M1YCR 6A	HE8C208	HE8C408
HE807 ES 17 Y0A 6 000 3	127H 17 X F1YN 6A	127H 17 X F1YN 6A	NA	NA
HE807 FS 17 Y0A 6 117 3	127H 17 E F1YN 6A	127H 17 XL F1YN 6A	HE8C117	HE8C317
HE807 FS 17 Y0A 6 000 3	127H 17 XL F1YN 6A	127H 17 XL F1YN 6A	NA	NA
HE807 FS 17 Y0A 6 119 3	127H 17 EF F1YN 6A	127H 17 XL F1YN 6A	HE8C119	HE8C319
HE807 ES 17 Y0A 6 212 3	127H 17 K F1YN 6A	127H 17 X F1YN 6A	HE8C212	HE8C412
HE807 EN 17 Y0A 6 000 3	127H 17 X M1YR 6A	127H 17 X M1YR 6A	NA	NA
HE807 FN 17 Y0A 6 117 3	127H 17 E M1YR 6A	127H 17 XL M1YR 6A	HE8C117	HE8C317
HE807 FN 17 Y0A 6 000 3	127H 17 XL M1YR 6A	127H 17 XL M1YR 6A	NA	NA
HE807 EN 17 Y0A 6 212 3	127H 17 K M1YR 6A	127H 17 X M1YR 6A	HE8C212	HE8C412
HE807 ES 17 Z1A 6 000 3	127H 17 X F1ZN 6A	127H 17 X F1ZN 6A	NA	NA
HE807 FS 17 Z1A 6 117 3	127H 17 E F1ZN 6A	127H 17 XL F1ZN 6A	HE8C117	HE8C317
HE807 FS 17 Z1A 6 000 3	127H 17 XL F1ZN 6A	127H 17 XL F1ZN 6A	NA	NA
HE807 ES 17 Z1A 6 212 3	127H 17 K F1ZN 6A	127H 17 X F1ZN 6A	HE8C212	HE8C412
HE807 ES 17 Z1A 6 213 3	127H 17 S F1ZN 6A	127H 17 X F1ZN 6A	HE8C213	HE8C413
HE807 EN 17 Z1A 6 000 3	127H 17 X M1ZCR 6A	127H 17 X M1ZCR 6A	NA	NA
HE807 FN 17 Z1A 6 117 3	127H 17 E M1ZCR 6A	127H 17 XL M1ZCR 6A	HE8C117	HE8C317
HE807 FN 17 Z1A 6 000 3	127H 17 XL M1ZCR 6A	127H 17 XL M1ZCR 6A	NA	NA
HE807 EN 17 Z1A 6 212 3	127H 17 K M1ZCR 6A	127H 17 X M1ZCR 6A	HE8C212	HE8C412
HE807 EN 17 Z1A 6 213 3	127H 17 S M1ZCR 6A	127H 17 X M1ZCR 6A	HE8C213	HE8C413
ES 17-29-41 ONLY ON S1				
HE807 ES 17 S11A 6 000 2	127H 17 X F1X1N 6A	127H 17 X F1X1N 6A	NA	NA
HE807 FS 17 S11A 6 117 2	127H 17 E F1X1N 6A	127H 17 XL F1X1N 6A	HE8C117	HE8C317
HE807 FS 17 S11A 6 000 2	127H 17 XL F1X1N 6A	127H 17 XL F1X1N 6A	NA	NA
HE807 ES 17 S11A 6 212 2	127H 17 K F1X1N 6A	127H 17 X F1X1N 6A	HE8C212	HE8C412
HE807 ES 17 S11A 6 213 2	127H 17 S F1X1N 6A	127H 17 X F1X1N 6A	HE8C213	HE8C413

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CROSS REF - HE8 SERIES - HE807

HE807 connectors with 3 fitting locations						
Connectors delivered without fitting + 3 separate fittings to be order separately						
HE 804 references	127 reference	127 reference	and brass fittings		or stainless steel fittings	
			2 extremity fittings	1 central fitting	2 extremity fittings	1 central fitting
Asymetrical arrangements 						
HE807 FB 84 Y1A 3 000 3	127H 84 XL F1YCN 3A	127H 84 XL F1YCN 3A	NA	NA	NA	NA
HE807 FB 84 Y1A 3 101 3	127H 84 A F1YCN 3A	127H 84 XL F1YCN 3A	HE8C101	HE8C102	HE8C301	HE8C302
HE807 FB 84 Y1A 3 102 3	127H 84 PA F1YCN 3A	127H 84 XL F1YCN 3A	HE8C102	HE8C102	HE8C302	HE8C302
HE807 FB 84 Y1A 3 103 3	127H 84 D F1YCN 3A	127H 84 XL F1YCN 3A	HE8C103	HE8C102	HE8C303	HE8C302
HE807 FB 84 Y1A 3 206 3	127H 84 IE F1YCN 3AB	127H 84 XL F1YCN 3AB	HE8C206	HE8C206	HE8C406	HE8C406
HE807 FB 84 Y1A 3 208 3	127H 84 KE F1YCN 3AB	127H 84 XL F1YCN 3AB	HE8C208	HE8C208	HE8C408	HE8C408
HE807 EP 84 Y1A 3 000 3	127H 84 X M1YCR 3A	127H 84 X M1YCR 3A	NA	NA	NA	NA
HE807 EP 84 Y1A 3 101 3	127H 84 A M1YCR 3AB	127H 84 X M1YCR 3A	HE8C101	HE8C102	HE8C301	HE8C302
HE807 EN 84 Y0A 3 000 3	127H 84 X M1YR 3A	127H 84 X M1YR 3A	NA	NA	NA	NA
HE807 EN 84 Y0A 3 212 3	127H 84 K M1YR 3A	127H 84 X M1YR 3A	HE8C212	HE8C229	HE8C412	HE8C429
HE807 EN 84 Y0A 3 117 3	127H 84 E M1YR 3AB	127H 84 X M1YR 3A	HE8C117	HE8C129	HE8C317	HE8C329
HE807 FS 84 Y0A 3 000 3	127H 84 XL F1YN 3A	127H 84 XL F1YN 3A	NA	NA	NA	NA
HE807 FS 84 Y0A 3 212 3	127H 84 K F1YN 3AB	127H 84 XL F1YN 3A	HE8C212	HE8C229	HE8C412	HE8C429
HE807 EN 84 Z1B 3 000 3	127H 84 X M1ZCR 3A	127H 84 X M1ZCR 3A	NA	NA	NA	NA
HE807 EN 84 Z1B 3 212 3	127H 84 K M1ZCR 3A	127H 84 X M1ZCR 3A	HE8C212	HE8C229	HE8C412	HE8C429
HE807 EN 84 Z1B 3 119 3	127H 84 EF M1ZCR 3AB	127H 84 X M1ZCR 3A	HE8C119	HE8C129	HE8C319	HE8C329
HE807 FS 84 Z1B 3 000 3	127H 84 XL F1ZN 3A	127H 84 XL F1ZN 3A	NA	NA	NA	NA
HE807 FS 84 Z1B 3 212 3	127H 84 K F1ZN 3AB	127H 84 XL F1ZN 3A	HE8C212	HE8C229	HE8C412	HE8C429
Symetrical arrangements 						
72 + 6A ONLY ON S1						
HE807 ES 72 S11A 6 000 2	127H 72 X F1X1N 6A	127H 72 X F1X1N 6A				
HE807 FS 72 S11A 6 000 2	127H 72 XL F1X1N 6A	127H 72 XL F1X1N 6A				

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127/HE8	R-SATA	R-VPX	HDB3/HSB3	SMASH	HDAS
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