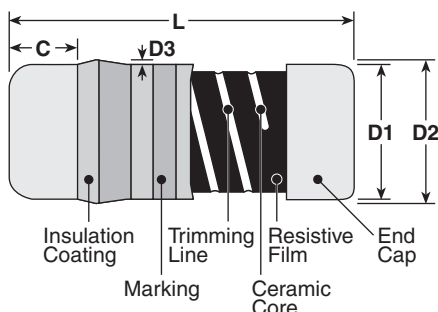


features

- Suitable for reflow and wave soldering
- Metal plate terminals
- Meets or exceeds IEC 60115-8, EIAJ RC-2131A
- Products with lead-free terminations meet EU RoHS and China RoHS requirements

dimensions and construction



Type (Inch/DIN Size Code)	Dimensions inches (mm)				
	L	C	D1	D2 (max.)	D3 (max.)
**2A (0805/0102)	.079±.004 (2.0±0.1)	.012 (0.3 min.)	.049±.002 (1.25±0.05)	.053 (1.35)	.003 (0.07)
**2D (1206/0203)	.126±.008 (3.2±0.2)	.02 (0.5 min.)	.061±.006 (1.55±0.15)	.069 (1.75)	.004 (0.1)
2ES (1406/0204)	.138±.008 (3.5±0.2)	.02 ~ .035 (0.5 ~ 0.9)	.055±.004 (1.40±0.1)	.061 (1.55)	
**2E (2309/0207)	.232±.008 (5.9±0.2)	.02 (0.5 min.)	.087±.004 (2.2±0.1)	.094 (2.4)	.006 (0.15)

***NOT RECOMMENDED FOR NEW DESIGN**

ordering information

RD41	2A	T	TE	103	J
Type	Size	Termination Material	Packaging	Nominal Resistance	Tolerance
	*2A *2D 2ES *2E	T: Sn	TE: 7" embossed plastic (2A, 2ES - 3,000 pieces/reel) (2D - 2,000 pieces/reel) (2E - 1,500 pieces/reel)	2 significant figures + 1 multiplier "R" indicates decimal on value <10Ω	G: ±2% J: ±5%

***NOT RECOMMENDED FOR NEW DESIGN**

For further information on packaging, please refer to Appendix A.

applications and ratings

Part Designation	Power Rating @ 70°C	Resistance Range E-24 (Ω)	T.C.R. (x10 ⁻⁶ /K)				Resistance Tolerance	Absolute Maximum Working Voltage	Absolute Maximum Overload Voltage	Rated Ambient Temperature
			+350 – -450	0 – -700	0 – -1000	0 – -1300				
**RD412A	0.125W	2.2 - 1.0M	2.2 - 47k	51k - 220k	240k - 470k	510k - 1.0M	G: ±2% J: ±5%	150V	200V	+70°C
**RD412D	0.2W	1.0 - 1.0M	1.0 - 47k	51k - 220k	240k - 470k	510k - 1.0M		200V	400V	
RD412ES	0.25W	2.2 - 1.0M	2.2 - 47k	51k - 100k	110k - 330k	360k - 1.0M		200V	400V	
**RD412E	0.25W	1.0 - 2.2M	1.0* - 100k	110k - 330k	360k - 1.0M	1.1M - 2.2M		300V	600V	

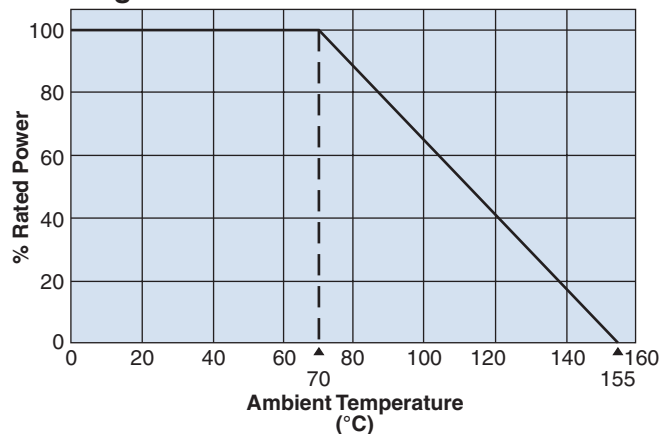
* 1 – 2Ω: +650 – 0 x 10⁻⁶/K Operating Temperature: -55°C to +155°C

Rated voltage = $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$ or Max. working voltage, whichever is lower

****NOT RECOMMENDED FOR NEW DESIGN**

environmental applications

Derating Curve



For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the derating curve.

Performance Characteristics

Parameter	Requirement $\Delta R \pm(\% \pm 0.05\Omega)$		Test Method
	Limit	Typical	
Resistance	Within specified tolerance	—	25°C
T.C.R.	Within specified T.C.R.	—	+25°C/-55°C, +25°C/+125°C
Overload (Short time)	±1.0%	±0.5%	Rated voltage x 2.5 for 5 seconds
Intermittent Overload	±1.0%	—	Rated voltage x 4 (2Ax3) or Max. intermittent overload voltage, whichever is lower, 10,000 cycles. Max. intermittent overload voltage: 2A: 300V, 2ES: 400V, 2D: 500V, 2E: 600V
Resistance to Solder Heat	±1.0%	±0.5%	260°C ± 5°C, 10 seconds ± 1 second
Rapid Change of Temperature	±1.0%	±0.75%	-55°C (30 minutes), +125°C (30 minutes), 5 cycles
Moisture Resistance	±5.0%	±2.5%	40°C ± 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 70°C	±2.0%	±1.0%	70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Low Temperature Exposure	±1.0%	±0.75%	-55°C, 1 hour
High Temperature Exposure	±2.0%	±1.0%	+155°C, 2 hours

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