



MMIC SURFACE MOUNT

Power Splitter/Combiner

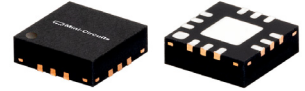
WP4G1+

Mini-Circuits

4 Way-0° 50Ω 1300 to 2000 MHz

FEATURES

- Excellent isolation, 26 dB typ.
- Excellent phase unbalance 1 deg. typ.
- Excellent amplitude unbalance, 0.25 dB typ.
- Small size, .118" x .118" x .035"
- High ESD level
- Aqueous washable



Generic photo used for illustration purposes only

CASE STYLE: DQ1225

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our website for methodologies and qualifications

APPLICATIONS

- GPS
- PCS
- DCS
- WCDMA

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		1300		2000	MHz
Insertion Loss* (above 6.0 dB)	1300-2000	—	0.8	1.9	dB
Isolation	1300-2000	14	26	—	dB
Amplitude Unbalance	1300-2000	—	—	0.5	dB
Phase Unbalance	1300-2000	—	—	5	deg.
VSWR (Port S)	1300-2000	—	1.5	—	:1
VSWR (Ports 1,2,3,4)	1300-2000	—	1.4	—	:1

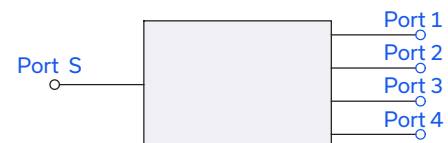
* Includes fixture loss, 0.12 dB typ.

MAXIMUM RATINGS

Parameter	Ratings
Operating temperature	-40°C to 85°C
Storage temperature	-65°C to 150°C
Power Input (as a splitter)	1.5W max.
Internal Dissipation	0.375W max.

Permanent damage may occur if any of these limits are exceeded.

ELECTRICAL SCHEMATIC



REV. D
ECO-015507
WP4G1+
MCL NY
221025





MMIC SURFACE MOUNT

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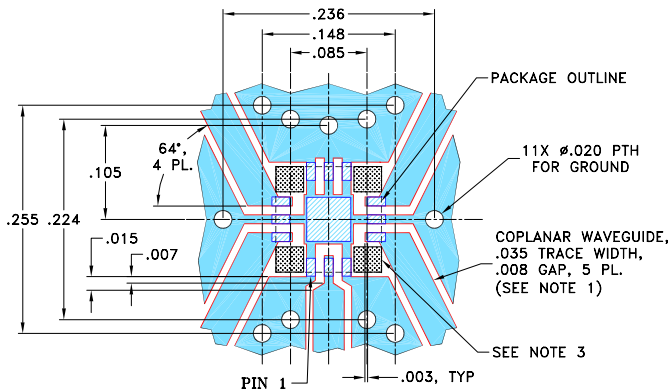
Mini-Circuits

4 Way-0° 50Ω 1300 to 2000 MHz

PAD CONNECTIONS

SUM PORT	2
PORT 1	12
PORT 2	10
PORT 3	6
PORT 4	4
GROUND	1,3,5,7,8,9,11, paddle

DEMO BOARD MCL P/N: TB-395+ SUGGESTED PCB LAYOUT (PL-259)

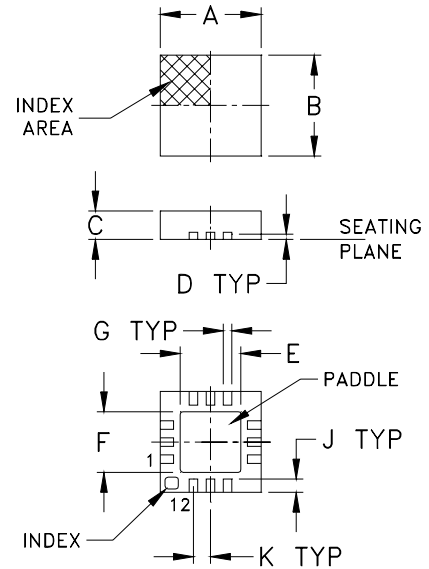


NOTES:

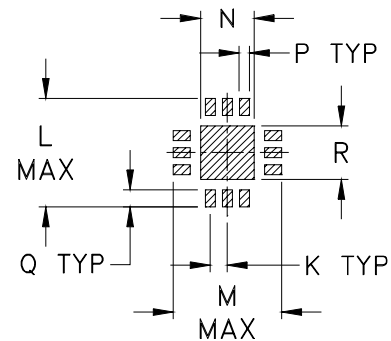
1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. SIGNAL TRACES ARE NOT ALLOWED INSIDE HATCHED AREAS (APPROX. .030 X .030) AT 4 PLACES AS SHOWN.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

OUTLINE DRAWING

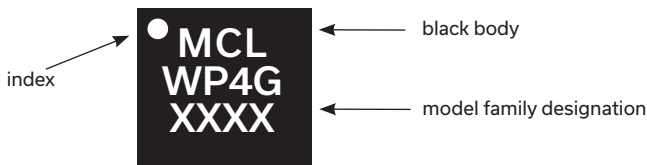


PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

PRODUCT MARKING



Marking may contain other features or characters for internal lot control

OUTLINE DIMENSIONS (Inch/mm)

A	B	C	D	E	F	G	H	J
.118	.118	.035	.008	.057	.057	.009	---	.016
3.00	3.00	0.89	0.20	1.45	1.45	0.23	---	0.41
K	L	M	N	P	Q	R		wt
.020	.127	.127	.049	.010	.020	.049		grams
0.51	3.23	3.23	1.24	0.25	0.51	1.24		0.02

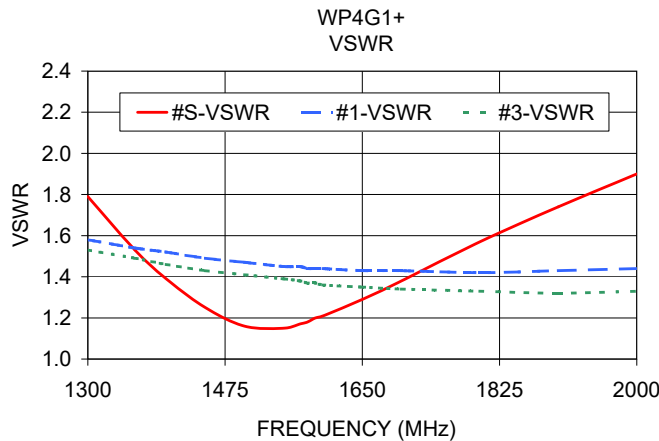
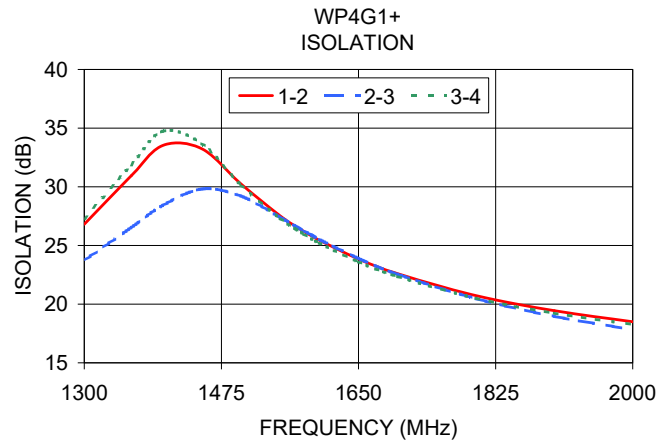
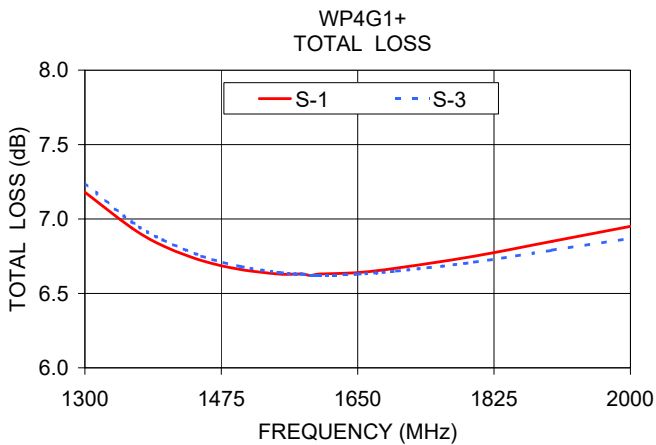
TAPE & REEL INFORMATION: F66



TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Total Loss ¹ (dB)				Amplitude Unbalance (dB)	Isolation (dB)			Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1	S-2	S-3	S-4		1-2	2-3	3-4						
1300.00	7.18	7.31	7.24	7.11	0.20	26.81	23.73	27.28	1.41	1.79	1.58	1.55	1.53	1.54
1360.00	6.94	7.05	6.98	6.86	0.19	30.94	26.53	31.87	1.19	1.53	1.54	1.51	1.49	1.50
1400.00	6.82	6.93	6.86	6.75	0.18	33.52	28.41	34.73	1.03	1.39	1.52	1.48	1.46	1.48
1450.00	6.72	6.82	6.75	6.65	0.17	33.24	29.81	33.68	0.88	1.25	1.49	1.45	1.43	1.45
1500.00	6.66	6.75	6.68	6.59	0.16	30.25	29.21	30.14	0.87	1.16	1.47	1.43	1.41	1.43
1550.00	6.63	6.71	6.64	6.56	0.15	27.52	27.41	27.30	0.92	1.15	1.45	1.41	1.39	1.41
1570.00	6.63	6.70	6.63	6.55	0.15	26.62	26.63	26.39	0.92	1.17	1.45	1.40	1.38	1.41
1580.00	6.63	6.70	6.63	6.55	0.14	26.21	26.25	25.97	0.93	1.18	1.44	1.39	1.37	1.41
1590.00	6.62	6.69	6.62	6.55	0.14	25.82	25.89	25.57	0.93	1.20	1.44	1.39	1.37	1.40
1600.00	6.63	6.69	6.62	6.55	0.14	25.45	25.52	25.20	0.95	1.21	1.44	1.39	1.36	1.40
1650.00	6.64	6.70	6.63	6.57	0.13	23.85	23.90	23.60	1.14	1.29	1.43	1.37	1.35	1.39
1700.00	6.67	6.71	6.65	6.60	0.12	22.59	22.54	22.35	1.36	1.38	1.43	1.36	1.34	1.39
1800.00	6.75	6.77	6.71	6.68	0.09	20.73	20.47	20.50	1.73	1.57	1.42	1.35	1.33	1.39
1900.00	6.85	6.85	6.79	6.78	0.07	19.44	18.96	19.22	2.09	1.74	1.43	1.35	1.32	1.39
2000.00	6.95	6.94	6.87	6.89	0.08	18.50	17.82	18.27	2.40	1.90	1.44	1.35	1.33	1.40

1. Total Loss = Insertion Loss + 6dB splitter loss.



4 Way-0° Power Splitter/Combiner

WP4G1+

Typical Performance Data

TEST CONDITIONS: INPUT POWER = -10dBm @Temperature = +25°C

FREQ. (MHz)	TOTAL LOSS ¹ (dB)				AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION (dB)			VSWR (:1)				
	S-1	S-2	S-3	S-4			1-2	2-3	3-4	S	1	2	3	4
1000	10.16	10.37	10.30	10.30	0.22	3.48	16.30	15.06	16.22	5.12	1.74	1.68	1.67	1.70
1100	8.79	8.99	8.93	8.92	0.20	2.97	18.48	16.90	18.41	3.50	1.68	1.63	1.63	1.64
1200	7.81	8.00	7.93	7.92	0.19	2.57	21.65	19.50	21.64	2.48	1.60	1.57	1.57	1.57
1300	7.17	7.34	7.27	7.27	0.17	2.19	26.29	23.01	26.41	1.82	1.53	1.50	1.50	1.51
1320	7.08	7.25	7.18	7.17	0.17	2.12	27.41	23.79	27.59	1.73	1.52	1.49	1.49	1.49
1340	7.00	7.16	7.10	7.09	0.16	2.06	28.56	24.58	28.81	1.64	1.50	1.48	1.48	1.48
1360	6.93	7.09	7.02	7.01	0.16	1.99	29.77	25.36	30.01	1.56	1.49	1.46	1.46	1.46
1380	6.87	7.02	6.95	6.94	0.15	1.91	30.82	26.17	31.05	1.48	1.48	1.45	1.45	1.45
1400	6.81	6.96	6.89	6.88	0.15	1.86	31.49	26.83	31.74	1.41	1.47	1.44	1.44	1.45
1420	6.76	6.91	6.84	6.83	0.15	1.90	31.65	27.33	31.89	1.35	1.46	1.43	1.43	1.44
1440	6.72	6.86	6.79	6.78	0.14	1.92	31.35	27.59	31.55	1.30	1.45	1.42	1.42	1.42
1460	6.69	6.82	6.76	6.75	0.13	1.97	30.73	27.68	30.78	1.25	1.44	1.41	1.41	1.41
1480	6.66	6.79	6.73	6.72	0.13	1.97	29.88	27.63	29.79	1.21	1.43	1.40	1.40	1.41
1500	6.64	6.77	6.70	6.69	0.13	1.99	28.92	27.32	28.81	1.18	1.43	1.39	1.40	1.40
1520	6.62	6.75	6.68	6.67	0.13	2.02	27.95	26.82	27.87	1.16	1.42	1.38	1.39	1.40
1540	6.61	6.73	6.66	6.65	0.12	2.04	27.09	26.29	26.98	1.15	1.42	1.37	1.38	1.39
1560	6.60	6.72	6.65	6.64	0.12	2.09	26.33	25.78	26.18	1.16	1.41	1.37	1.37	1.38
1580	6.59	6.71	6.64	6.63	0.12	2.11	25.62	25.22	25.46	1.17	1.41	1.36	1.37	1.38
1600	6.59	6.70	6.64	6.62	0.11	2.14	24.93	24.66	24.78	1.19	1.40	1.35	1.36	1.38
1620	6.60	6.70	6.64	6.62	0.10	2.15	24.27	24.07	24.18	1.22	1.40	1.35	1.36	1.38
1640	6.60	6.70	6.64	6.62	0.10	2.15	23.74	23.52	23.63	1.25	1.40	1.34	1.35	1.37
1660	6.61	6.70	6.64	6.63	0.09	2.19	23.24	23.05	23.11	1.29	1.39	1.34	1.34	1.36
1680	6.62	6.71	6.65	6.63	0.09	2.22	22.78	22.58	22.64	1.32	1.39	1.33	1.34	1.36
1700	6.63	6.71	6.65	6.64	0.09	2.24	22.36	22.16	22.23	1.36	1.39	1.33	1.34	1.37
1720	6.65	6.72	6.66	6.65	0.08	2.27	21.94	21.73	21.84	1.39	1.39	1.33	1.34	1.37
1740	6.66	6.73	6.67	6.66	0.07	2.29	21.58	21.34	21.45	1.43	1.39	1.32	1.33	1.36
1760	6.67	6.75	6.69	6.67	0.08	2.32	21.24	21.00	21.13	1.47	1.39	1.32	1.33	1.36
1780	6.69	6.76	6.70	6.68	0.07	2.36	20.95	20.69	20.82	1.50	1.39	1.32	1.33	1.36
1800	6.71	6.77	6.71	6.69	0.08	2.35	20.65	20.37	20.54	1.54	1.39	1.32	1.33	1.37
1820	6.73	6.79	6.73	6.71	0.07	2.39	20.37	20.05	20.25	1.58	1.39	1.32	1.33	1.37
1840	6.75	6.80	6.74	6.73	0.07	2.40	20.12	19.75	20.00	1.62	1.39	1.32	1.32	1.37
1860	6.78	6.82	6.76	6.74	0.07	2.39	19.88	19.49	19.76	1.65	1.40	1.31	1.32	1.37
1880	6.79	6.84	6.79	6.76	0.07	2.44	19.67	19.25	19.55	1.69	1.40	1.31	1.32	1.37
1900	6.81	6.85	6.80	6.78	0.07	2.46	19.45	19.00	19.34	1.72	1.40	1.32	1.33	1.37
1920	6.83	6.87	6.82	6.80	0.07	2.50	19.25	18.77	19.14	1.76	1.40	1.32	1.32	1.37
1940	6.86	6.89	6.84	6.82	0.07	2.52	19.06	18.56	18.96	1.80	1.40	1.31	1.32	1.37
1960	6.89	6.91	6.85	6.84	0.07	2.54	18.89	18.35	18.78	1.83	1.40	1.31	1.32	1.37
2000	6.93	6.95	6.90	6.88	0.07	2.58	18.59	17.97	18.47	1.90	1.41	1.32	1.33	1.39
2100	7.05	7.05	6.99	6.97	0.08	2.71	17.92	17.14	17.80	2.06	1.42	1.32	1.34	1.40
2200	7.17	7.15	7.10	7.07	0.09	2.86	17.42	16.47	17.28	2.22	1.43	1.33	1.34	1.41
2400	7.39	7.34	7.27	7.25	0.13	3.40	16.74	15.40	16.55	2.50	1.45	1.34	1.36	1.43
2600	7.60	7.54	7.43	7.42	0.18	4.05	16.33	14.55	16.05	2.74	1.47	1.36	1.36	1.44
2800	7.81	7.71	7.58	7.58	0.23	4.73	16.10	13.82	15.73	2.96	1.48	1.37	1.37	1.45
3000	7.98	7.84	7.71	7.71	0.27	5.27	15.88	13.17	15.47	3.13	1.48	1.38	1.36	1.44
3200	8.14	7.96	7.83	7.83	0.30	6.11	15.66	12.55	15.21	3.27	1.46	1.38	1.35	1.41
3400	8.28	8.08	7.94	7.94	0.34	6.82	15.36	11.93	14.90	3.38	1.45	1.38	1.32	1.37
3600	8.40	8.17	8.04	8.03	0.36	7.60	14.92	11.34	14.51	3.50	1.43	1.38	1.31	1.33
3800	8.48	8.25	8.14	8.12	0.36	8.33	14.33	10.82	14.00	3.63	1.42	1.39	1.31	1.30
4000	8.53	8.34	8.25	8.23	0.31	9.08	13.56	10.39	13.37	3.74	1.41	1.43	1.35	1.30
4200	8.61	8.45	8.37	8.34	0.28	9.89	12.71	10.02	12.58	3.86	1.42	1.48	1.43	1.34
4400	8.68	8.53	8.51	8.47	0.21	10.35	11.82	9.77	11.79	4.00	1.47	1.54	1.54	1.42
4600	8.75	8.63	8.64	8.59	0.16	10.84	10.91	9.61	10.99	4.17	1.52	1.64	1.67	1.54
4800	8.81	8.73	8.78	8.72	0.09	11.13	10.08	9.58	10.22	4.30	1.58	1.75	1.80	1.66
5000	8.86	8.82	8.89	8.83	0.06	11.43	9.35	9.66	9.52	4.38	1.65	1.88	1.93	1.78

¹ Total Loss = Insertion Loss+ 6dB Splitter Loss

REV. X2
WP4G1+
100627

Page 1 of 3



RF/MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED • RoHS compliant
P.O. Box 350166, Brooklyn, New York 11235-0006 (718) 934-4500 Fax (718) 332-4661



The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see



4 Way-0° Power Splitter/Combiner

WP4G1+

Typical Performance Data

TEST CONDITIONS: INPUT POWER = -10dBm @Temperature = -40°C

FREQ. (MHz)	TOTAL LOSS ¹ (dB)				AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION (dB)			VSWR (:1)				
	S-1	S-2	S-3	S-4			1-2	2-3	3-4	S	1	2	3	4
1000	10.11	10.33	10.26	10.27	0.22	3.72	16.13	14.89	16.04	5.46	1.75	1.68	1.67	1.71
1100	8.73	8.93	8.87	8.88	0.20	3.22	18.24	16.68	18.18	3.70	1.68	1.63	1.62	1.65
1200	7.73	7.91	7.85	7.86	0.19	2.88	21.32	19.22	21.32	2.59	1.59	1.57	1.57	1.57
1300	7.08	7.24	7.18	7.18	0.16	2.53	25.88	22.67	26.01	1.90	1.52	1.49	1.50	1.50
1320	6.98	7.14	7.08	7.08	0.16	2.47	27.01	23.47	27.17	1.79	1.51	1.48	1.49	1.49
1340	6.90	7.05	7.00	7.00	0.15	2.45	28.21	24.28	28.41	1.70	1.50	1.46	1.47	1.48
1360	6.83	6.98	6.92	6.92	0.15	2.36	29.46	25.09	29.64	1.61	1.49	1.45	1.46	1.46
1380	6.76	6.91	6.85	6.85	0.15	2.28	30.67	25.95	30.80	1.53	1.48	1.44	1.45	1.45
1400	6.70	6.85	6.78	6.78	0.15	2.24	31.55	26.67	31.66	1.45	1.47	1.43	1.44	1.44
1420	6.65	6.80	6.73	6.73	0.14	2.23	31.84	27.24	31.97	1.39	1.46	1.42	1.43	1.43
1440	6.61	6.75	6.69	6.68	0.14	2.19	31.65	27.60	31.76	1.33	1.45	1.41	1.41	1.42
1460	6.58	6.71	6.65	6.64	0.13	2.13	31.04	27.74	31.04	1.28	1.44	1.40	1.40	1.40
1480	6.55	6.68	6.62	6.61	0.13	2.04	30.21	27.73	30.11	1.24	1.43	1.39	1.39	1.40
1500	6.52	6.65	6.59	6.58	0.13	1.98	29.18	27.46	29.12	1.20	1.42	1.38	1.39	1.39
1520	6.50	6.63	6.57	6.56	0.12	1.91	28.21	26.98	28.14	1.18	1.42	1.37	1.38	1.38
1540	6.49	6.61	6.55	6.55	0.12	1.86	27.31	26.47	27.22	1.16	1.41	1.37	1.37	1.37
1560	6.48	6.60	6.54	6.53	0.12	1.76	26.54	25.95	26.37	1.16	1.40	1.36	1.36	1.37
1580	6.47	6.58	6.53	6.52	0.11	1.76	25.83	25.43	25.60	1.16	1.39	1.35	1.36	1.37
1600	6.47	6.58	6.52	6.52	0.11	1.69	25.09	24.86	24.92	1.18	1.39	1.34	1.35	1.37
1620	6.47	6.57	6.52	6.51	0.10	1.65	24.42	24.26	24.28	1.21	1.38	1.33	1.34	1.37
1640	6.47	6.57	6.52	6.51	0.10	1.61	23.84	23.67	23.70	1.24	1.38	1.33	1.34	1.36
1660	6.48	6.58	6.53	6.52	0.10	1.60	23.31	23.18	23.18	1.27	1.37	1.32	1.33	1.36
1680	6.49	6.58	6.53	6.52	0.09	1.62	22.84	22.71	22.70	1.30	1.37	1.32	1.33	1.36
1700	6.50	6.59	6.54	6.53	0.09	1.67	22.39	22.25	22.27	1.34	1.37	1.31	1.33	1.36
1720	6.52	6.60	6.55	6.54	0.08	1.65	21.95	21.78	21.86	1.37	1.37	1.31	1.32	1.36
1740	6.53	6.61	6.56	6.55	0.08	1.66	21.57	21.38	21.48	1.41	1.37	1.31	1.32	1.36
1760	6.55	6.62	6.57	6.56	0.07	1.70	21.23	21.04	21.14	1.45	1.37	1.31	1.31	1.35
1780	6.56	6.63	6.58	6.58	0.07	1.71	20.93	20.71	20.82	1.48	1.37	1.31	1.32	1.35
1800	6.58	6.64	6.59	6.59	0.07	1.75	20.63	20.39	20.52	1.52	1.37	1.31	1.32	1.35
1820	6.60	6.66	6.61	6.61	0.06	1.76	20.34	20.07	20.23	1.56	1.37	1.31	1.31	1.35
1840	6.62	6.67	6.63	6.62	0.05	1.76	20.09	19.76	19.98	1.59	1.38	1.30	1.31	1.35
1860	6.64	6.69	6.64	6.64	0.05	1.80	19.85	19.51	19.73	1.63	1.38	1.30	1.31	1.35
1880	6.66	6.71	6.66	6.65	0.05	1.84	19.64	19.27	19.51	1.66	1.38	1.30	1.31	1.35
1900	6.68	6.72	6.68	6.67	0.05	1.85	19.41	19.02	19.30	1.70	1.38	1.30	1.31	1.36
1920	6.70	6.74	6.70	6.69	0.05	1.84	19.20	18.77	19.09	1.74	1.38	1.30	1.31	1.36
1940	6.73	6.76	6.72	6.71	0.05	1.83	19.00	18.56	18.91	1.77	1.38	1.30	1.31	1.35
1960	6.76	6.78	6.73	6.73	0.05	1.89	18.83	18.34	18.73	1.81	1.39	1.30	1.31	1.36
2000	6.80	6.83	6.78	6.77	0.06	1.97	18.49	17.94	18.40	1.88	1.39	1.30	1.31	1.37
2100	6.92	6.92	6.88	6.87	0.05	2.06	17.80	17.08	17.71	2.05	1.40	1.31	1.32	1.38
2200	7.04	7.03	6.98	6.97	0.07	2.15	17.26	16.37	17.18	2.22	1.42	1.32	1.33	1.39
2400	7.27	7.23	7.16	7.15	0.12	2.26	16.54	15.26	16.43	2.52	1.44	1.34	1.34	1.42
2600	7.48	7.42	7.32	7.32	0.17	2.52	16.12	14.43	15.91	2.79	1.46	1.36	1.35	1.44
2800	7.68	7.58	7.47	7.47	0.22	3.19	15.94	13.72	15.59	3.01	1.49	1.37	1.37	1.46
3000	7.82	7.69	7.58	7.59	0.24	3.76	15.78	13.11	15.33	3.18	1.48	1.38	1.36	1.44
3200	7.96	7.80	7.69	7.70	0.27	4.28	15.53	12.48	15.08	3.33	1.45	1.37	1.34	1.40
3400	8.11	7.94	7.82	7.83	0.29	4.79	15.18	11.83	14.78	3.49	1.43	1.37	1.32	1.36
3600	8.24	8.03	7.93	7.92	0.32	5.09	14.76	11.23	14.39	3.62	1.42	1.38	1.31	1.32
3800	8.34	8.12	8.01	8.00	0.34	5.41	14.21	10.69	13.89	3.76	1.42	1.39	1.31	1.30
4000	8.39	8.20	8.10	8.09	0.29	5.78	13.47	10.26	13.30	3.87	1.42	1.44	1.35	1.30
4200	8.46	8.31	8.22	8.20	0.26	6.26	12.62	9.88	12.52	3.98	1.44	1.50	1.44	1.35
4400	8.51	8.38	8.33	8.33	0.18	6.76	11.74	9.64	11.75	4.09	1.49	1.58	1.56	1.43
4600	8.58	8.50	8.51	8.48	0.10	7.19	10.80	9.47	10.94	4.32	1.52	1.67	1.70	1.56
4800	8.65	8.60	8.66	8.63	0.07	7.57	9.97	9.40	10.15	4.48	1.59	1.76	1.83	1.67
5000	8.71	8.69	8.76	8.71	0.08	8.00	9.24	9.43	9.42	4.59	1.67	1.89	1.94	1.79

¹ Total Loss = Insertion Loss+ 6dB Splitter Loss

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4 Way-0° Power Splitter/Combiner

WP4G1+

Typical Performance Data

TEST CONDITIONS: INPUT POWER = -10dBm @Temperature = +85°C

FREQ. (MHz)	TOTAL LOSS ¹ (dB)				AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION (dB)			VSWR (:1)				
	S-1	S-2	S-3	S-4			1-2	2-3	3-4	S	1	2	3	4
1000	10.18	10.40	10.33	10.32	0.22	2.72	16.49	15.23	16.41	4.84	1.75	1.69	1.68	1.71
1100	8.83	9.04	8.97	8.96	0.20	2.11	18.68	17.08	18.62	3.35	1.68	1.63	1.63	1.65
1200	7.88	8.06	7.99	7.98	0.18	2.08	21.83	19.67	21.88	2.40	1.61	1.57	1.57	1.58
1300	7.25	7.42	7.35	7.34	0.17	2.23	26.39	23.10	26.65	1.78	1.54	1.50	1.50	1.50
1320	7.16	7.32	7.26	7.24	0.16	2.26	27.48	23.86	27.81	1.69	1.52	1.49	1.49	1.49
1340	7.08	7.24	7.17	7.16	0.16	2.30	28.55	24.62	29.02	1.60	1.51	1.47	1.47	1.48
1360	7.01	7.16	7.10	7.09	0.15	2.34	29.65	25.35	30.13	1.53	1.50	1.46	1.46	1.46
1380	6.95	7.10	7.03	7.02	0.15	2.37	30.61	26.08	31.08	1.46	1.49	1.44	1.45	1.45
1400	6.90	7.04	6.97	6.96	0.15	2.38	31.21	26.73	31.63	1.39	1.48	1.43	1.44	1.45
1420	6.85	6.99	6.92	6.91	0.14	2.39	31.36	27.20	31.66	1.33	1.47	1.43	1.43	1.44
1440	6.81	6.94	6.88	6.86	0.14	2.41	31.08	27.45	31.23	1.28	1.45	1.41	1.42	1.43
1460	6.78	6.90	6.84	6.83	0.13	2.46	30.48	27.53	30.48	1.24	1.45	1.40	1.41	1.41
1480	6.75	6.88	6.81	6.80	0.13	2.50	29.76	27.49	29.58	1.20	1.44	1.39	1.40	1.41
1500	6.72	6.85	6.78	6.77	0.12	2.55	28.86	27.19	28.63	1.17	1.43	1.38	1.39	1.40
1520	6.71	6.83	6.76	6.75	0.12	2.56	27.94	26.74	27.72	1.16	1.43	1.38	1.39	1.40
1540	6.69	6.81	6.74	6.73	0.12	2.60	27.09	26.23	26.87	1.15	1.42	1.37	1.38	1.39
1560	6.68	6.79	6.73	6.71	0.11	2.62	26.36	25.73	26.08	1.16	1.41	1.36	1.37	1.38
1580	6.68	6.79	6.72	6.70	0.11	2.65	25.68	25.22	25.37	1.17	1.41	1.36	1.36	1.38
1600	6.67	6.78	6.71	6.70	0.11	2.71	25.01	24.66	24.74	1.20	1.41	1.35	1.36	1.38
1620	6.68	6.78	6.71	6.70	0.10	2.82	24.38	24.12	24.14	1.23	1.40	1.34	1.36	1.38
1640	6.68	6.78	6.72	6.70	0.09	2.91	23.83	23.58	23.60	1.26	1.40	1.34	1.35	1.37
1660	6.69	6.78	6.72	6.70	0.09	3.03	23.34	23.11	23.09	1.29	1.40	1.34	1.34	1.37
1680	6.70	6.78	6.72	6.71	0.09	3.13	22.89	22.67	22.66	1.32	1.40	1.33	1.34	1.37
1700	6.71	6.79	6.73	6.71	0.08	3.19	22.47	22.24	22.24	1.36	1.39	1.33	1.34	1.37
1720	6.72	6.80	6.74	6.72	0.08	3.29	22.04	21.82	21.85	1.40	1.39	1.32	1.34	1.37
1740	6.74	6.81	6.75	6.73	0.07	3.41	21.68	21.43	21.48	1.43	1.39	1.32	1.33	1.37
1760	6.75	6.82	6.76	6.74	0.07	3.46	21.35	21.08	21.15	1.47	1.39	1.32	1.33	1.36
1780	6.77	6.83	6.78	6.76	0.07	3.63	21.06	20.77	20.85	1.50	1.39	1.32	1.33	1.36
1800	6.78	6.84	6.79	6.76	0.08	3.67	20.75	20.45	20.57	1.54	1.39	1.32	1.33	1.37
1820	6.80	6.86	6.80	6.78	0.08	3.78	20.46	20.14	20.29	1.58	1.39	1.31	1.33	1.37
1840	6.83	6.87	6.82	6.80	0.07	3.87	20.20	19.83	20.05	1.61	1.39	1.31	1.32	1.37
1860	6.85	6.89	6.84	6.82	0.07	3.99	19.97	19.58	19.81	1.65	1.40	1.31	1.32	1.37
1880	6.87	6.91	6.86	6.83	0.07	4.12	19.76	19.33	19.60	1.68	1.40	1.31	1.32	1.37
1900	6.89	6.92	6.87	6.85	0.07	4.21	19.53	19.08	19.40	1.72	1.40	1.31	1.33	1.38
1920	6.91	6.94	6.90	6.87	0.07	4.32	19.33	18.85	19.20	1.76	1.40	1.31	1.32	1.38
1940	6.93	6.96	6.91	6.89	0.07	4.43	19.14	18.63	19.01	1.79	1.40	1.31	1.32	1.37
1960	6.96	6.97	6.93	6.91	0.07	4.51	18.98	18.43	18.84	1.82	1.40	1.31	1.32	1.38
2000	7.01	7.02	6.97	6.95	0.07	4.61	18.66	18.04	18.53	1.89	1.41	1.31	1.33	1.39
2100	7.12	7.12	7.07	7.05	0.07	5.00	17.99	17.20	17.86	2.05	1.42	1.31	1.34	1.40
2200	7.24	7.22	7.17	7.15	0.09	5.49	17.47	16.51	17.35	2.20	1.42	1.32	1.34	1.42
2400	7.47	7.43	7.35	7.33	0.13	6.21	16.78	15.42	16.62	2.48	1.44	1.34	1.35	1.43
2600	7.69	7.64	7.52	7.50	0.19	7.12	16.36	14.57	16.13	2.72	1.45	1.36	1.37	1.44
2800	7.91	7.81	7.68	7.66	0.25	7.96	16.13	13.83	15.80	2.92	1.47	1.37	1.37	1.45
3000	8.10	7.95	7.82	7.80	0.29	8.64	15.92	13.18	15.53	3.08	1.47	1.38	1.37	1.45
3200	8.27	8.08	7.94	7.92	0.35	9.72	15.71	12.57	15.28	3.21	1.46	1.39	1.36	1.42
3400	8.42	8.19	8.04	8.02	0.40	10.70	15.43	11.97	14.96	3.31	1.46	1.39	1.33	1.38
3600	8.53	8.27	8.12	8.11	0.42	11.83	15.02	11.39	14.57	3.42	1.45	1.38	1.30	1.34
3800	8.59	8.36	8.22	8.20	0.39	12.83	14.43	10.89	14.05	3.52	1.42	1.40	1.30	1.30
4000	8.64	8.43	8.33	8.30	0.33	13.91	13.63	10.48	13.41	3.63	1.41	1.43	1.34	1.28
4200	8.72	8.54	8.46	8.42	0.30	15.02	12.74	10.10	12.61	3.76	1.41	1.47	1.42	1.32
4400	8.76	8.60	8.61	8.56	0.21	15.58	11.84	9.87	11.82	3.90	1.45	1.53	1.55	1.41
4600	8.84	8.69	8.75	8.68	0.16	16.19	10.93	9.74	11.02	4.06	1.51	1.62	1.69	1.53
4800	8.90	8.79	8.90	8.82	0.12	16.65	10.12	9.72	10.26	4.20	1.58	1.74	1.84	1.66
5000	8.96	8.89	9.03	8.93	0.13	17.14	9.41	9.80	9.59	4.29	1.66	1.87	1.98	1.79

¹ Total Loss = Insertion Loss+ 6dB Splitter Loss

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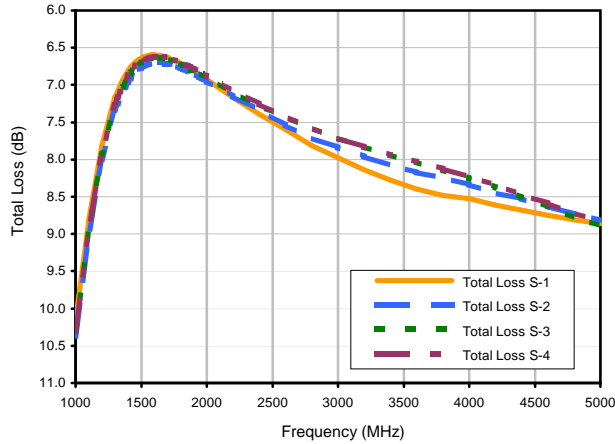


4 Way-0° Power Splitter/Combiner

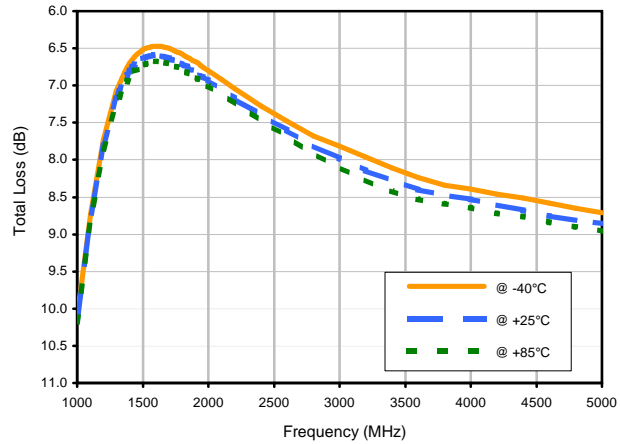
WP4G1+

Typical Performance Curves

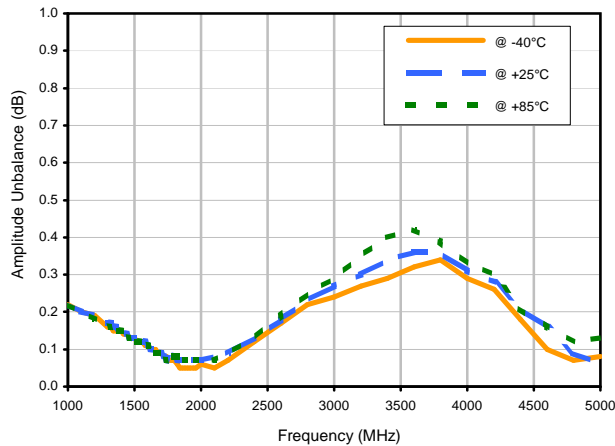
Total Loss



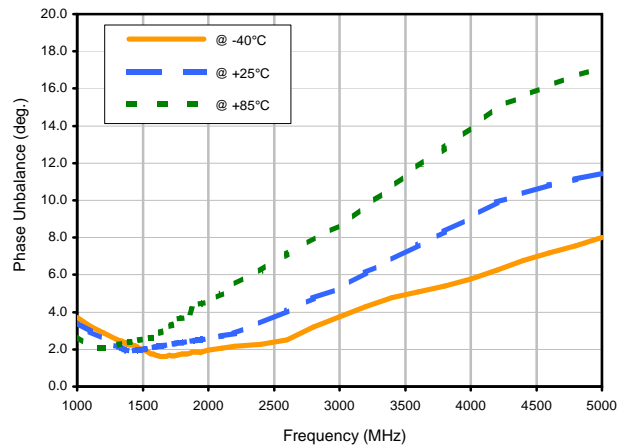
Total Loss S-1 vs. TEMPERATURE



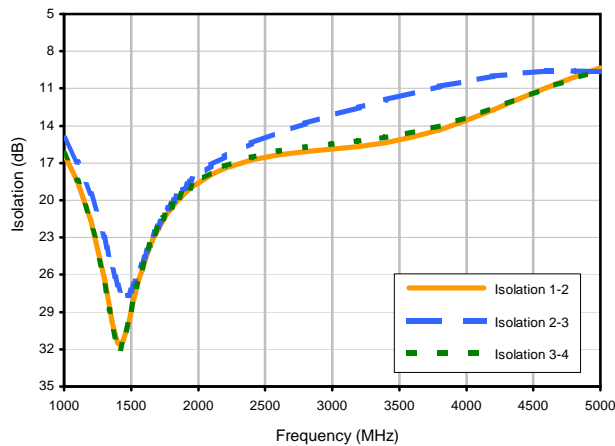
Amplitude Unbalance vs. TEMPERATURE



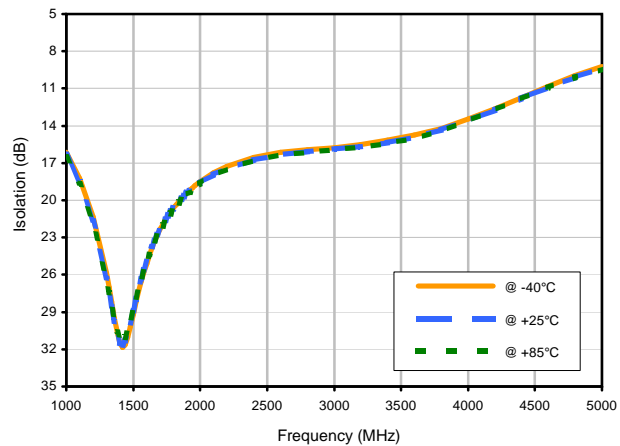
Phase Unbalance vs. TEMPERATURE



Isolation



Isolation 1-2 vs. TEMPERATURE



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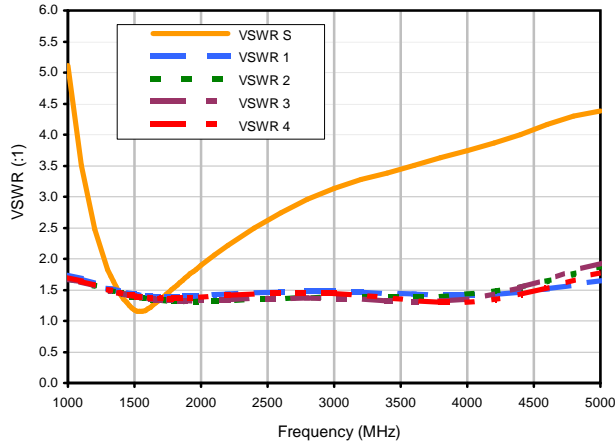


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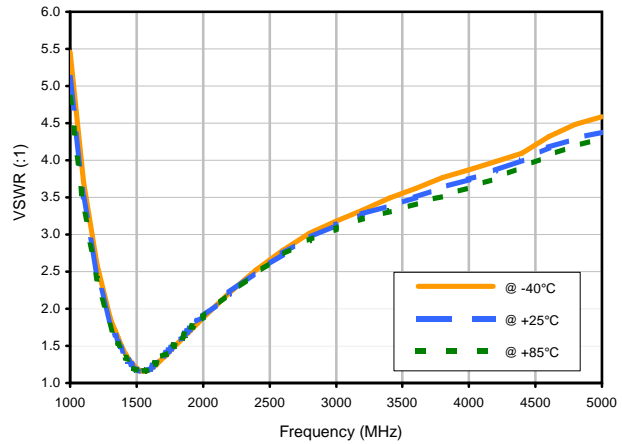


Typical Performance Curves

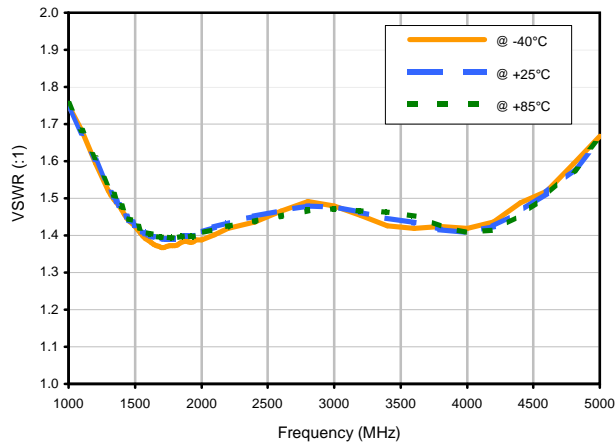
VSWR



VSWR SUM vs. TEMPERATURE



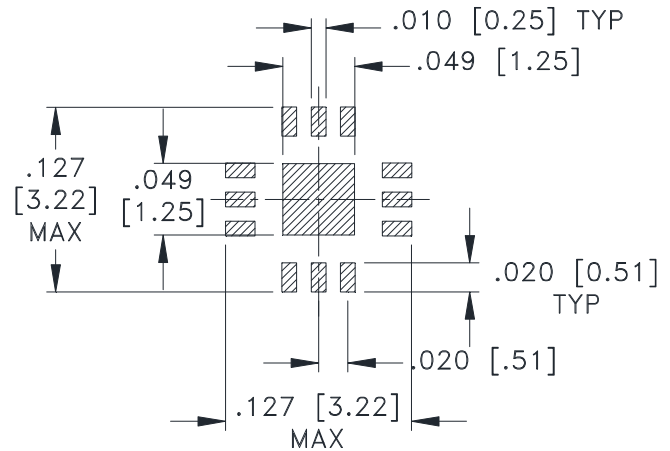
VSWR OUT1 vs. TEMPERATURE



Outline Dimensions



PCB Land Pattern



SUGGESTED LAYOUT,
TOLERANCE TO BE WITHIN $\pm .002$

Weight: .02 Grams

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .01$; 3 Pl. $\pm .004$

Notes:

1. Case material: Plastic.
2. Termination finish:
 - For RoHS Case Styles: Tin-Silver alloy plate over Nickel barrier or Matte-Tin. All models, (+) suffix. See Data sheet.
 - For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
8	4	7	Small quantity standard	20
				50
				100
				200
				500
		7	Standard	1000, 2000, 3000

Note: Please consult individual model data sheet to determine device per reel availability.

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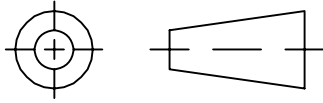
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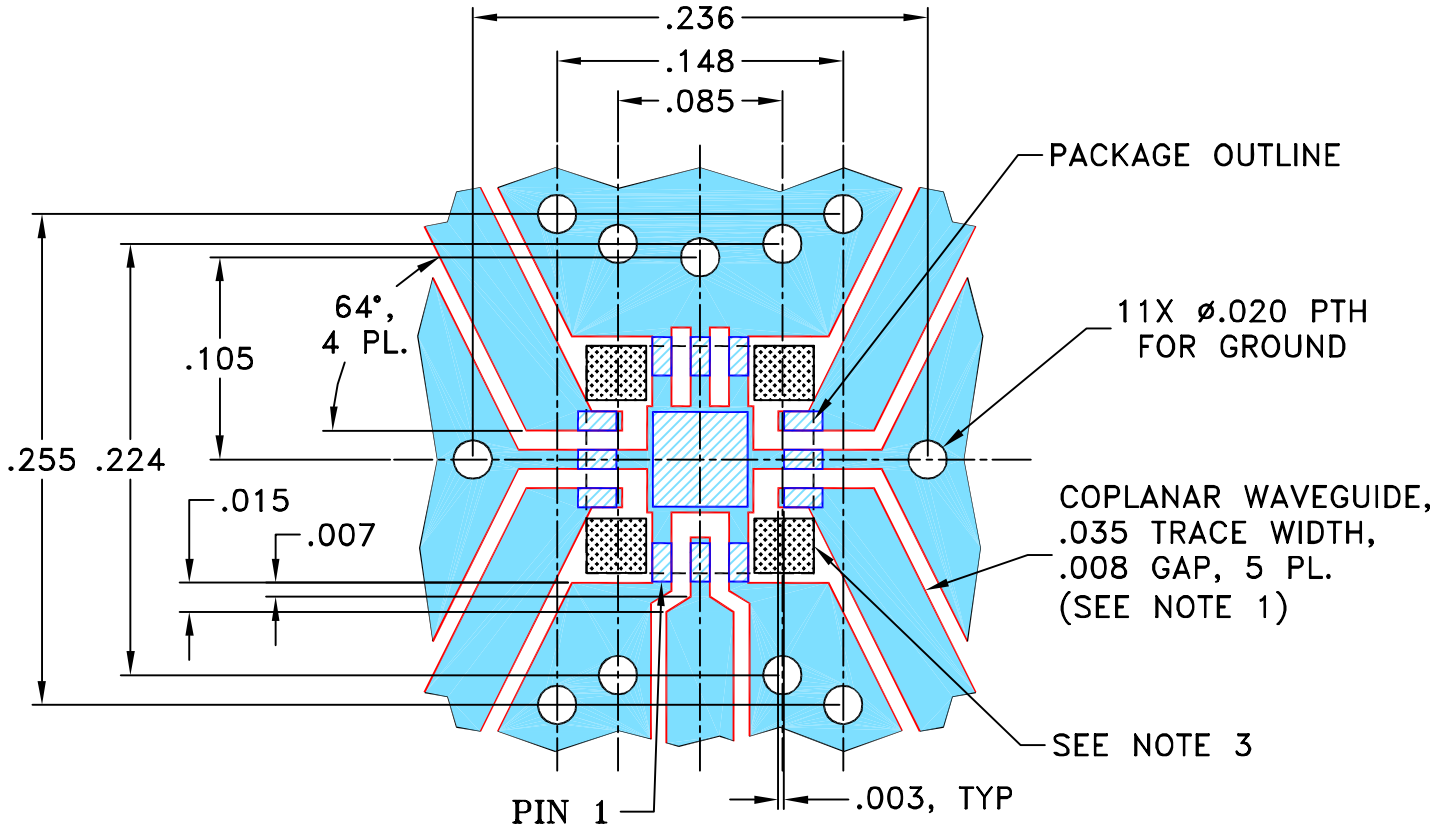
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M109251	NEW RELEASE	01/11/07	PW	WP
A	M112849	UPDATED NOTE 3	08/03/07	AV	WP

**SUGGESTED MOUNTING CONFIGURATION FOR
DQ1225 CASE STYLE, "rx" PIN CONNECTION**



NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. SIGNAL TRACES ARE NOT ALLOWED INSIDE HATCHED AREAS (APPROX. .030 X .030) AT 4 PLACES AS SHOWN.



DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)



DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES
TOLERANCES ON:
2 PL DECIMALS ±
3 PL DECIMALS ± .005
ANGLES ± 1°
FRACTIONS ±

	INITIALS	DATE
DRAWN	PW	01/10/07
CHECKED	IL	01/11/07
APPROVED	WP	01/11/07

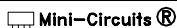


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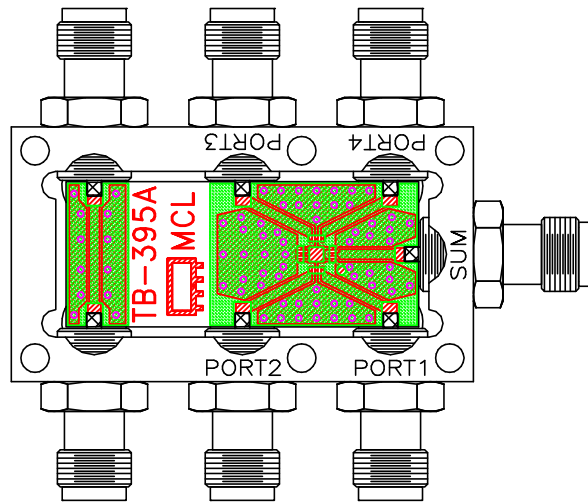
PL, rx, DQ1225, WP4, TB-395+

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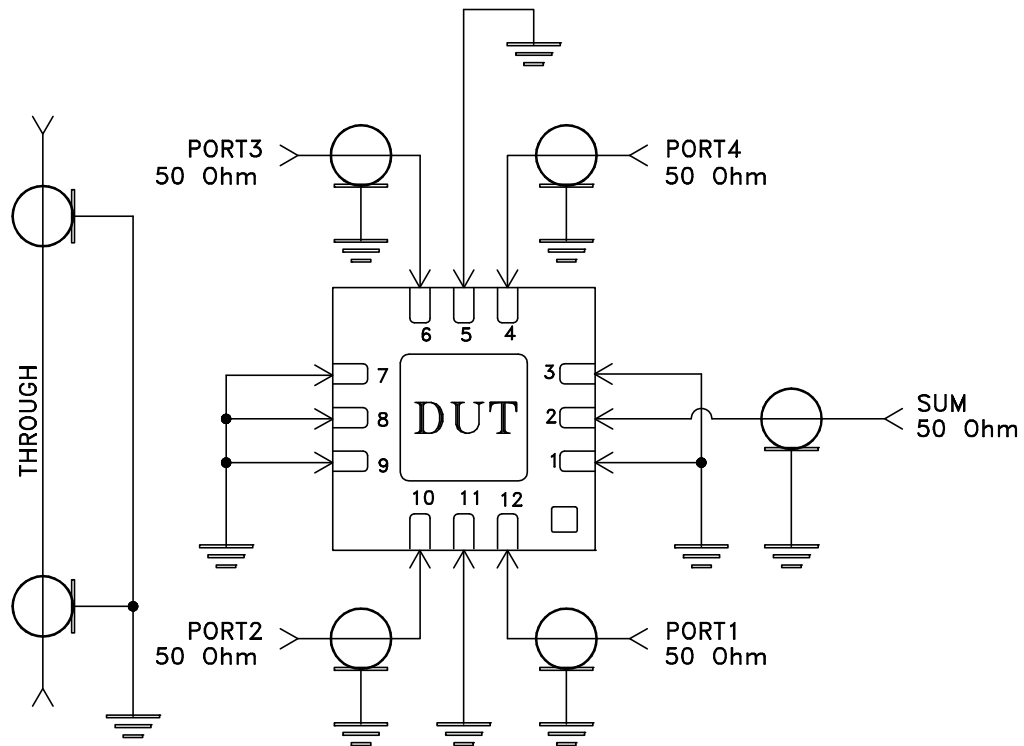


SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-259	A
FILE:	98PL259	SCALE:	10:1
SHEET:	1	OF	1

Evaluation Board and Circuit




TB-395+



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.020 inch.

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All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

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Operating Temperature	-40° to 85° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-65° to 150° C Ambient Environment	Individual Model Data Sheet
Autoclave	15 psig, 100% RH, 121°C, 96 hours	JESD22-A102-C, Condition C
Temperature Cycling	-65° to 150°C, 100 cycles	JESD22-A104
Temperature Humidity	85°C/ 85% RH, 168 hours	JESD22-113
Solder Reflow Heat	Sn-Pb Eutetic Process: 240°C peak Pb-Free Process: 260°C peak	J-STD-020, Table 4-1, 4-2 and 5-2; Figure 5-1
Moisture Sensitivity: Level 1	Bake at 125°C for 24 hours Soak at 85°C/85% RH for 168 hours, Reflow 3 cycles at 240°C peak (Non-RoHS) or 260°C (RoHS)	J-STD-020
Solderability	10X magnification, 95% coverage	JESD22-B102, Method 1: Dip and Look Test
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D