



Mini-Circuits

MMIC SURFACE MOUNT

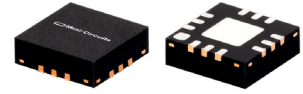
Power Splitter/Combiner

GP2S1+

2 Way-0° 50Ω 500 to 2500 MHz

FEATURES

- Very Wide Bandwidth, 500 to 2500 MHz
- Excellent Isolation, 20 dB Typ.
- Excellent Amplitude Unbalance, 0.02 dB Typ.
- Excellent Phase Unbalance, 0.9 deg. Typ.
- Small Size, 0.118 × 0.118 × 0.035"
- 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

- Cellular
- GPS
- Radar
- WCDMA
- GSM
- Korea PCS

ELECTRICAL SPECIFICATIONS¹ AT +25 °C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		500		2500	MHz
Insertion Loss* (Above 3.0 dB)	500–2500	–	0.9	1.8	dB
Isolation	500–2500	9	20	–	dB
Amplitude Unbalance	500–2500	–	–	0.2	dB
Phase Unbalance	500–2500	–	–	5.0	deg.
VSWR (Port S)	500–2500	–	1.3	–	:1
VSWR (Ports 1,2)	500–2500	–	1.2	–	

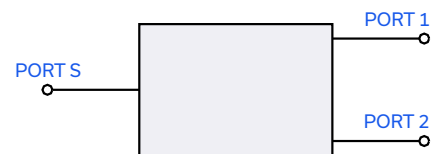
* De-embedded from demo board loss.

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-65 °C to +150 °C
Power Input (as a Splitter)	1.5 W max.
Internal Dissipation	0.75 W max.

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

ELECTRICAL SCHEMATIC



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REV. F
ECO-030197
GP2S1+
MCL NY
260625

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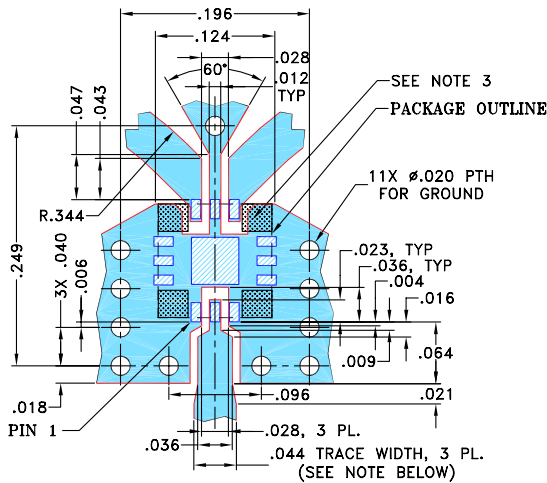
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PAD CONNECTIONS

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

DEMO BOARD MCL P/N: TB-453-GP2S1+ SUGGESTED PCB LAYOUT (PL-282)

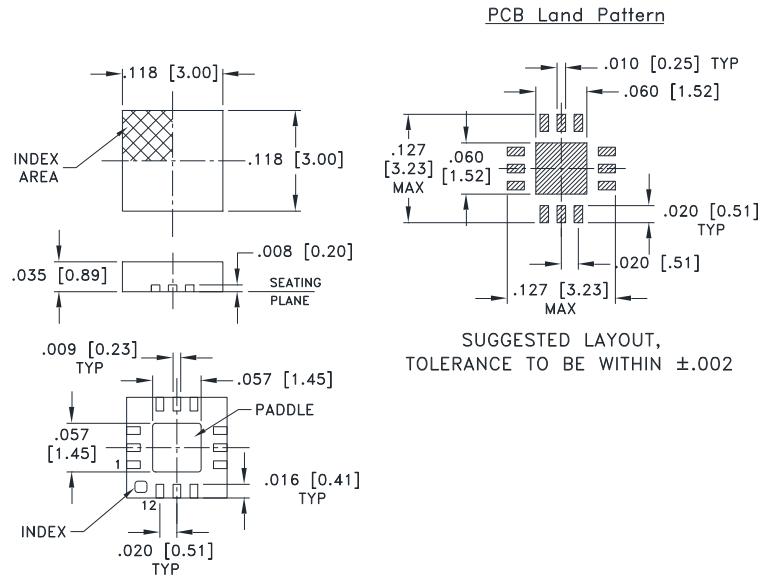


NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .020" $\pm$.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

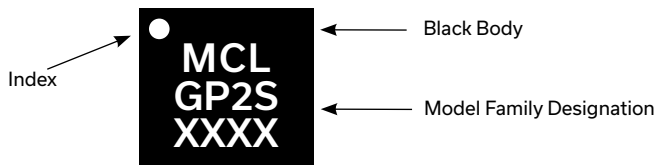
OUTLINE DRAWING



Weight: .02 Grams
Dimensions are in inches [mm]. Tolerances in inches: 2 Pl. $\pm$.01; 3 Pl. $\pm$.004 inches

TAPE & REEL INFORMATION: F66

PRODUCT MARKING



Marking may contain other features or characters for internal lot control.

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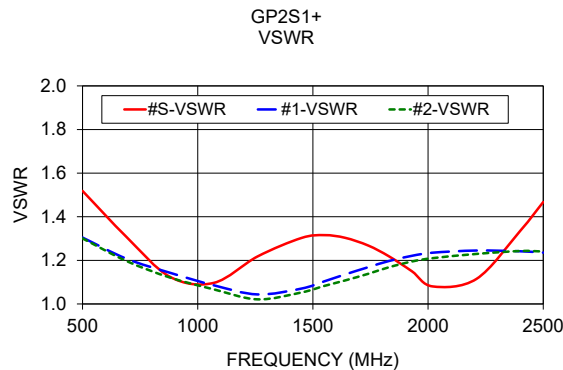
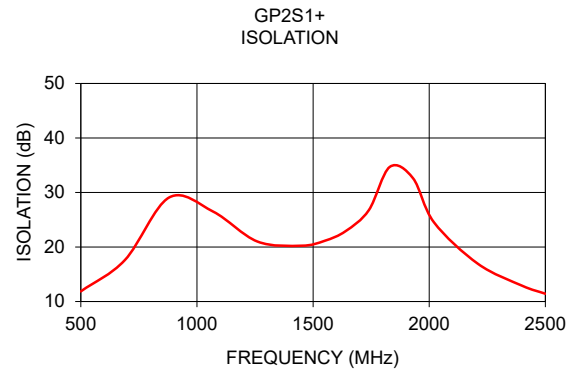
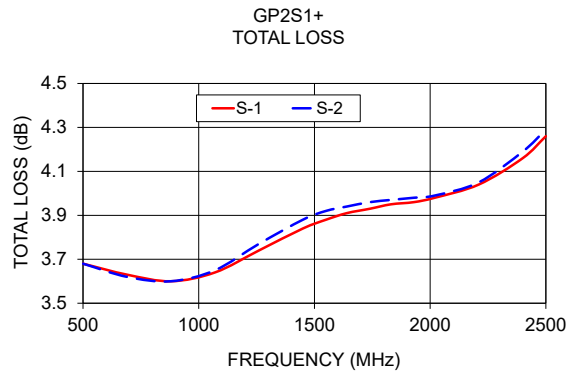
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2 Way-0° 50Ω 500 to 2500 MHz

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
	S-1	S-2						
500	3.68	3.68	0.01	11.86	0.42	1.52	1.30	1.30
690	3.63	3.62	0.01	17.62	0.47	1.31	1.21	1.20
880	3.60	3.60	0.00	29.08	0.52	1.12	1.14	1.12
1070	3.64	3.65	0.01	26.49	0.66	1.10	1.09	1.07
1260	3.74	3.77	0.04	21.01	0.78	1.22	1.04	1.02
1450	3.84	3.88	0.04	20.24	0.87	1.30	1.07	1.05
1550	3.88	3.92	0.04	21.14	0.91	1.32	1.10	1.08
1640	3.91	3.94	0.03	22.91	0.97	1.30	1.14	1.11
1740	3.93	3.96	0.03	26.76	1.05	1.27	1.17	1.14
1830	3.95	3.97	0.02	34.69	1.16	1.22	1.20	1.17
1930	3.96	3.98	0.02	32.63	1.28	1.15	1.22	1.19
2020	3.98	3.99	0.01	24.55	1.41	1.08	1.24	1.21
2210	4.04	4.05	0.02	16.91	1.65	1.11	1.25	1.23
2400	4.16	4.19	0.03	12.90	1.80	1.34	1.24	1.24
2500	4.26	4.29	0.03	11.43	1.89	1.47	1.24	1.24

1. Total Loss = Insertion Loss + 3 dB splitter loss.



ESD RATING

Human Body Model (HBM): Class 1A (250 V to < 500 V) in accordance with ANSI/ESD STM 5.1 - 2001

Machine Model (MM): Class M2 (100 V to < 250 V) in accordance with ANSI/ESD STM 5.2 - 1999

NOTES

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

