



SURFACE MOUNT

Power Splitter/Combiner

SP-2U2+

2 Way-0° 50Ω 1720 to 2850 MHz

FEATURES

- Wide bandwidth
- Low insertion loss, 0.5 dB typ.
- Good isolation, 17 dB typ.
- Good output VSWR, 1.26:1 typ.
- Excellent power handling, 1.5W
- Small size
- Aqueous washable



Generic photo used for illustration purposes only

CASE STYLE: CA531

+RoHS Compliant

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

APPLICATIONS

- Bluetooth
- WCDMA
- IEEE 802.11b, g
- Wi-Fi
- PCS

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		1720		2850	MHz
Insertion Loss (above 3.0 dB)	1720-2850	—	0.5	1.4	dB
Isolation	1720-2850	9	17	—	dB
Amplitude Unbalance	1720-2850	—	—	0.2	dB
Phase Unbalance	1720-2850	—	—	3	deg.
VSWR (Port S)	1720-2850	—	1.5	—	:1
VSWR (Port 1)	1720-2850	—	1.26	—	:1
VSWR (Port 2)	1720-2850	—	1.26	—	:1

MAXIMUM RATINGS

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

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

ELECTRICAL SCHEMATIC





SURFACE MOUNT

Power Splitter/Combiner

SP-2U2+

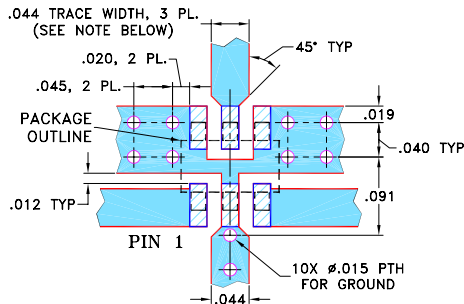
2 Way-0° 50Ω 1720 to 2850 MHz

PIN CONNECTIONS

SUM PORT	5
PORT 1	1
PORT 2	3
GROUND	2,4,6

PRODUCT MARKING: N/A

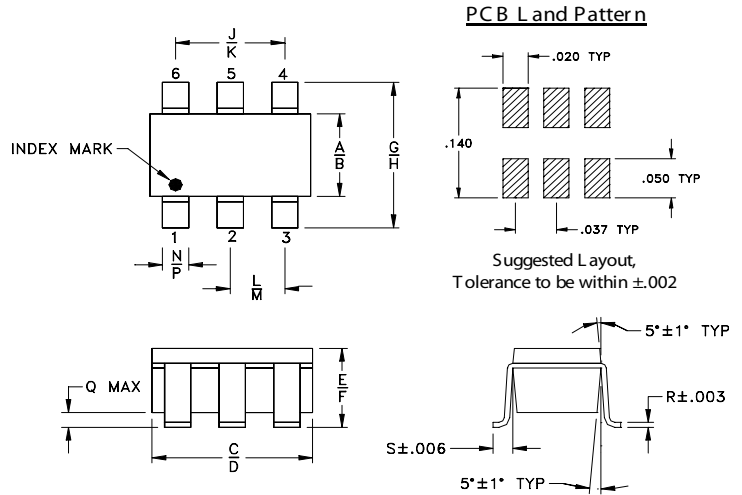
DEMOBOARD MCL P/N: TB-374
SUGGESTED PCB LAYOUT (PL-232)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

OUTLINE DRAWING



OUTLINE DIMENSIONS (Inch/mm)

A	B	C	D	E	F	G	H	J
.052	.067	.106	.122	.035	.064	.087	.118	.067
1.32	1.70	2.69	3.10	0.89	1.63	2.21	3.00	1.70
K	L	M	N	P	Q	R	S	wt
.083	.033	.042	.012	.020	.012	.006	.018	grams
2.11	0.84	1.07	0.30	0.51	0.30	0.15	0.46	0.020

TAPE & REEL INFORMATION: F31



SURFACE MOUNT

Power Splitter/Combiner

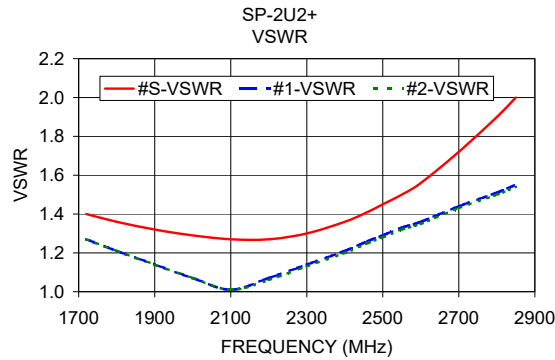
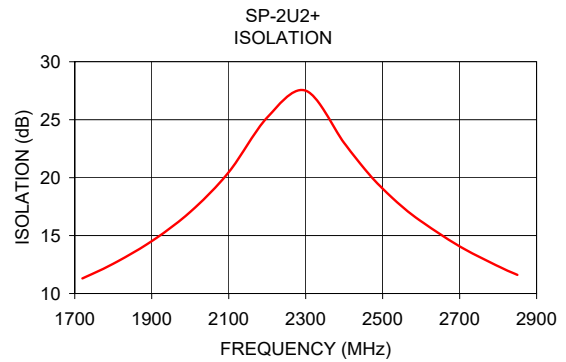
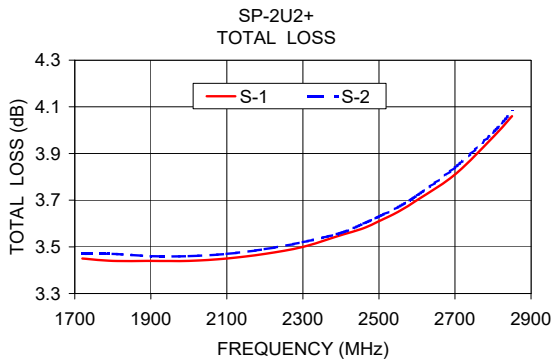
SP-2U2+

2 Way-0° 50Ω 1720 to 2850 MHz

TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Total Loss ¹ (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR (:1)		
	S-1	S-2				S	1	2
1720.00	3.45	3.47	0.02	11.30	0.66	1.40	1.27	1.27
1800.00	3.44	3.47	0.02	12.57	0.68	1.36	1.21	1.21
1900.00	3.44	3.46	0.02	14.52	0.66	1.32	1.14	1.14
2000.00	3.44	3.46	0.02	17.04	0.62	1.29	1.07	1.07
2100.00	3.45	3.47	0.02	20.47	0.74	1.27	1.01	1.01
2200.00	3.47	3.49	0.02	25.19	0.73	1.27	1.07	1.06
2300.00	3.50	3.52	0.02	27.51	0.73	1.30	1.14	1.13
2400.00	3.55	3.56	0.01	22.99	0.75	1.36	1.21	1.20
2460.00	3.58	3.60	0.02	20.48	0.81	1.41	1.26	1.25
2500.00	3.61	3.63	0.02	19.05	0.83	1.45	1.29	1.28
2550.00	3.65	3.67	0.02	17.52	0.83	1.50	1.33	1.32
2600.00	3.70	3.72	0.02	16.23	0.82	1.56	1.36	1.35
2700.00	3.81	3.84	0.02	14.07	0.84	1.72	1.44	1.43
2800.00	3.97	3.99	0.02	12.36	0.85	1.90	1.51	1.50
2850.00	4.06	4.08	0.02	11.61	0.80	2.00	1.55	1.54

1. Total Loss = Insertion Loss + 3dB 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 M1 (< 100 v) in accordance with ANSI/ESD STM 5.2 - 1999 (pass 50V)

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-Circuit's 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

