Surface Mount top hat™

Power Splitter/Combiner

TCP-2-272+

2 Way-0° 50Ω 5 to 2700 MHz

Unit Marking may be PG or PF

CASE STYLE: DB1627

+RoHS Compliant

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

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500
13"	1000, 2000

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	0.5W max.

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

Pin Connections

SUM PORT	2,5,6
PORT 1	3
PORT 2	4
GROUND	1
EXT. RESISTOR 475Ω	3,4

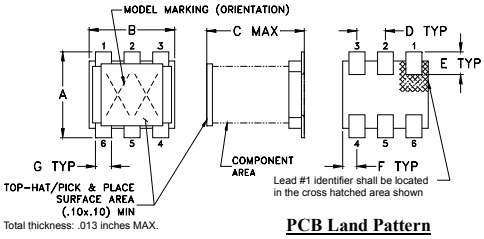
Features

- wideband, 5 to 2700 MHz
- low insertion, 0.9 dB typ.
- excellent amplitude unbalance, 0.3 dB typ.
- very good phase unbalance, 1.5 deg. typ.
- external resistor required
- aqueous washable
- leads for excellent solderability
- low cost

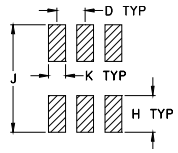
Applications

- cellular
- PCN
- GPS
- CATV
- communication systems

Outline Drawing



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

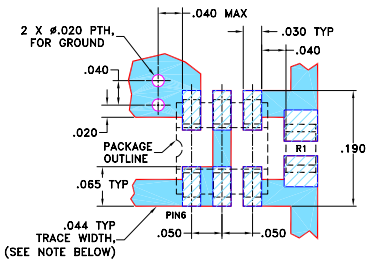
A	B	C	D	E	F
.160	.150	.160	.050	.040	.025
4.06	3.81	4.06	1.27	1.02	0.64

G	H	J	K	wt
.028	.065	.190	.030	grams
0.71	1.65	4.83	0.76	0.15

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		5		2700	MHz
Insertion Loss Above 3.0 dB	5-50	—	0.6	0.8	dB
	50-1350	—	0.9	1.1	
	1350-2700	—	1.4	2.0	
Isolation	5-50	15	20	—	dB
	50-1350	20	24	—	
	1350-2700	10	12	—	
Phase Unbalance	5-50	—	0.5	2.0	Degree
	50-1350	—	2	4.0	
	1350-2700	—	6	10.0	
Amplitude Unbalance	5-50	—	0.1	0.4	dB
	50-1350	—	0.3	0.6	
	1350-2700	—	0.9	1.3	
VSWR (Port S)	5-50	—	2.0	2.2	:1
	50-1350	—	2.0	2.2	
	1350-2700	—	1.8	2.2	
VSWR (Port 1-2)	5-50	—	2.0	2.2	:1
	50-1350	—	2.0	2.2	
	1350-2700	—	2.3	2.5	

Demo Board MCL P/N: TB-86
Suggested PCB Layout (PL-008)



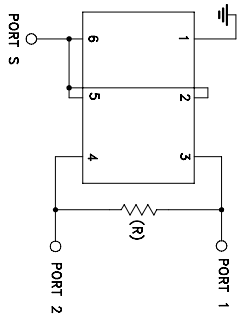
RESISTOR R1: 475 ± 1% Ohm, 0805 SIZE

NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; 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

Electrical Schematic



Notes

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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.
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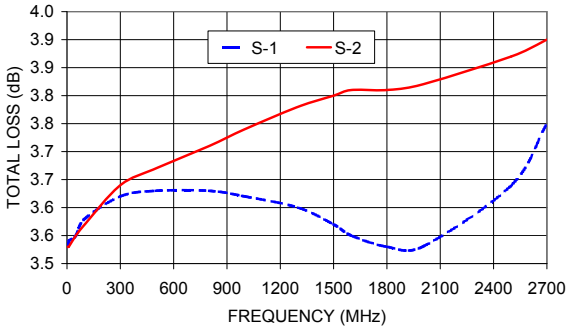
Typical Performance Data

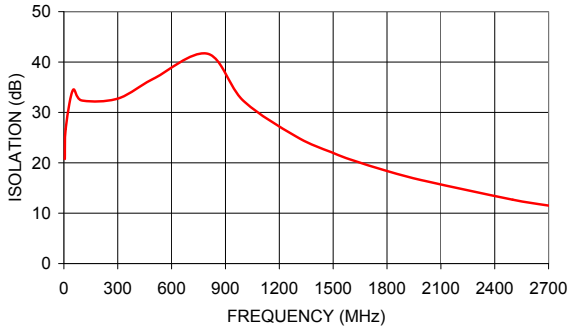
Frequency (MHz)	Total Loss[1] (dB) S-1	Total Loss[1] (dB) S-2	Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
5.00	3.53	3.53	0.00	20.75	0.02	2.00	1.89	1.90
10.00	3.54	3.53	0.00	26.70	0.03	1.99	1.95	1.95
50.00	3.55	3.55	0.00	34.42	0.00	1.98	1.92	1.93
100.00	3.58	3.57	0.00	32.37	0.00	1.97	1.90	1.91
300.00	3.62	3.64	0.02	32.74	0.15	1.94	1.91	1.91
500.00	3.63	3.67	0.04	36.71	0.20	1.91	1.93	1.92
800.00	3.63	3.71	0.08	41.65	0.21	1.88	1.95	1.94
1000.00	3.62	3.74	0.12	32.30	0.22	1.85	1.97	1.97
1300.00	3.60	3.78	0.18	25.10	0.46	1.78	1.99	2.04
1500.00	3.57	3.80	0.23	21.96	0.45	1.70	2.01	2.09
1600.00	3.55	3.81	0.26	20.61	0.54	1.65	2.01	2.10
1800.00	3.53	3.81	0.28	18.38	0.52	1.54	2.01	2.13
2000.00	3.53	3.82	0.30	16.50	0.66	1.41	2.02	2.16
2500.00	3.64	3.87	0.23	12.68	1.47	1.09	2.00	2.13
2700.00	3.75	3.90	0.15	11.51	2.40	1.13	2.00	2.10

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

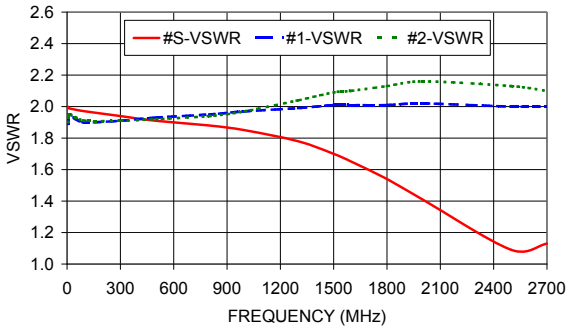
TCP-2-272+
TOTAL LOSS



TCP-2-272+
ISOLATION



TCP-2-272+
VSWR



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