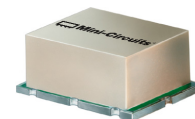


Surface Mount

Power Splitter/Combiner

SYPJ-2-13+

2 Way-180° 50Ω 10 to 1000 MHz



CASE STYLE: TTT166

Maximum Ratings

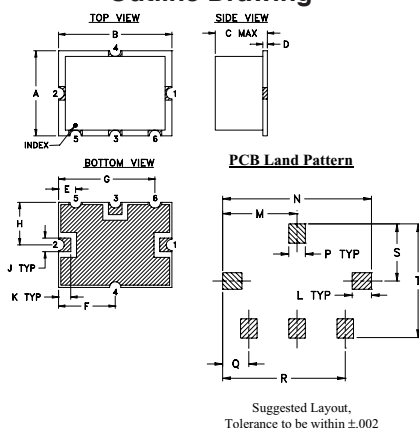
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	0.5W max.
Internal Dissipation	0.125W max.

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

Pin Connections

SUM PORT	3
PORT 1 (0°)	1
PORT 2 (180°)	2
GROUND	4,5,6

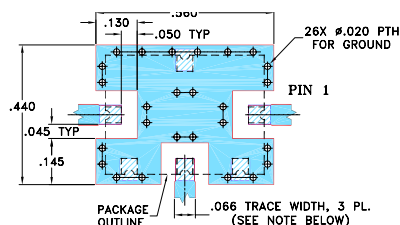
Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F	G	H	J	
.38	.50	.15	.020	.075	.250	.425	.187	.050	
9.65	12.70	3.81	0.51	1.91	6.35	10.80	4.75	1.27	
K	L	M	N	P	Q	R	S	T	wt.
.050	.070	.270	.540	.060	.095	.445	.208	.415	grams
1.27	1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54	0.8

Demo Board MCL P/N: TB-12 Suggested PCB Layout (PL-079)



- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 - THE USE OF SOLDER MASK OVER THE GROUND AREA UNDER THE UNIT AS SHOWN IS RECOMMENDED TO PREVENT POTENTIAL SHORTING. IF USER CHOOSES TO EXPOSE METAL UNDER THE ENTIRE UNIT GROUND PAD FOR IMPROVED GROUNDING, IT IS RECOMMENDED A SOLDER MASK DAM BE APPLIED AROUND EACH GROUND PAD TO ENSURE FILLET AND CONNECTION AT GROUND PADS.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
-

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-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

Features

- wideband, 10 to 1000 MHz
- good isolation, 22 dB typ.
- excellent amplitude unbalance, 0.3 dB typ.

Applications

- VHF/UHF
- cellular
- communication systems

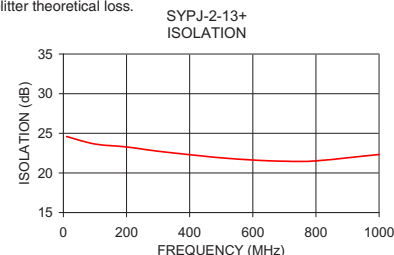
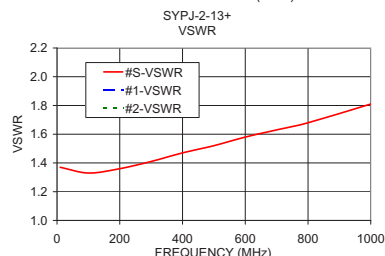
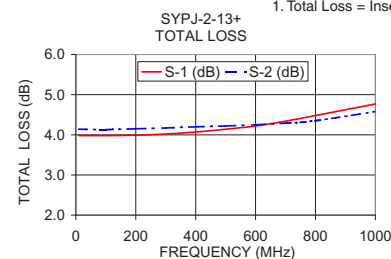
Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency		10		1000	MHz
Insertion Loss (above theoretical 3.0 dB)	10-100 100-500 500-1000	— — —	1.2 1.3 1.7	1.7 1.8 2.3	dB
Isolation	10-100 100-500 500-1000	20 18 18	24 22 21	— — —	dB
Phase Unbalance	10-100 100-500 500-1000	— — —	1.0 4.0 6.0	4.0 8.0 12.0	Degree
Amplitude Unbalance	10-100 100-500 500-1000	— — —	0.2 0.25 0.3	0.5 0.5 0.7	dB
VSWR (Port S)	10-100 100-500 500-1000	— — —	1.1 1.3 1.6	— — —	:1
VSWR (Port 1-2)	10-100 100-500 500-1000	— — —	1.4 1.5 1.7	— — —	:1

Typical Performance Data

Frequency (MHz)	Total Loss ¹ (dB)	Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1 S-2						
10	3.98 4.14	0.15	24.59	180.00	1.08	1.34	1.37
100	3.98 4.13	0.15	23.65	179.19	1.09	1.29	1.33
200	3.99 4.15	0.16	23.27	178.46	1.15	1.27	1.36
300	4.02 4.17	0.15	22.74	177.82	1.21	1.26	1.41
400	4.07 4.20	0.13	22.30	177.27	1.26	1.25	1.47
500	4.14 4.22	0.09	21.90	176.79	1.32	1.25	1.52
600	4.22 4.25	0.03	21.63	176.33	1.37	1.26	1.58
700	4.34 4.29	0.05	21.48	175.82	1.43	1.30	1.63
800	4.48 4.35	0.13	21.52	175.23	1.48	1.36	1.68
1000	4.77 4.58	0.20	22.33	173.64	1.61	1.54	1.81

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



Electrical Schematic

