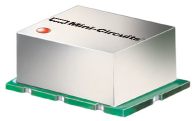
Surface Mount

Power Splitter/Combiner

SYPJ-2-222+

2 Way-180° 50Ω 500 to 2250 MHz



CASE STYLE: AH202-1
PRICE: $7.95 ea. QTY (10-49)

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

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	0.05W max.

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

Pin Connections

SUM PORT	8
PORT 1	4
PORT 2	5
GROUND	1,2,3,6,7

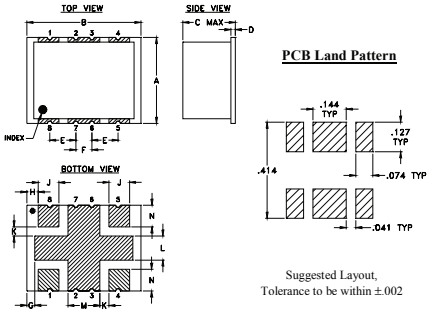
Features

- wideband, 500 to 2200 MHz
- low phase unbalance, 3.0 deg. typ.
- low amplitude unbalance, 0.6 dB typ.
- good isolation, 22 dB typ.

Applications

- VHF/UHF
- communication systems
- receivers & transmitters
- instrumentation
- CATV
- cellular, GPS, PCS

Outline Drawing



Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.38	.50	.25	.020	.115	.070	.035
9.65	12.70	6.35	0.51	2.92	1.78	0.89

H	J	K	L	M	N	wt
.050	.090	.040	.105	.140	.095	grams
1.27	2.29	1.02	2.67	3.56	2.41	0.80

Electrical Specifications at 25°C

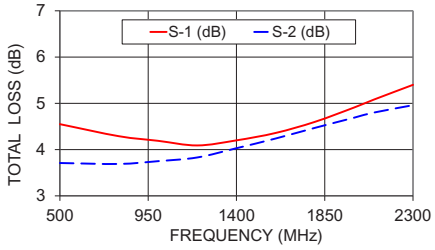
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency		500		2250	MHz
Insertion Loss (above theoretical 3.0 dB)	500-900	—	1.5	1.9	dB
	900-1600	—	1.7	2.3	
	1600-2250	—	2.0	2.6	
Isolation	500-900	18	22	—	dB
	900-1600	20	25	—	
	1600-2250	15	19	—	
Phase Unbalance	500-900	—	3.0	7.0	Degree
	900-1600	—	3.0	9.0	
	1600-2250	—	5.0	14.0	
Amplitude Unbalance	500-900	—	0.8	1.2	dB
	900-1600	—	0.5	0.9	
	1600-2250	—	0.4	0.9	
VSWR (Port S)	500-2250	—	1.5	—	:1
VSWR (Port 1-2)	500-2250	—	1.5	—	:1

Typical Performance Data

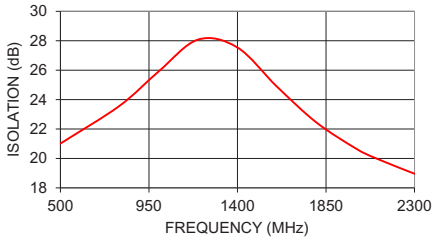
Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
500	4.55	3.71	0.84	21.01	0.53	1.80	1.21	1.49
800	4.29	3.69	0.60	23.57	0.52	1.47	1.12	1.31
1000	4.19	3.75	0.44	25.92	1.19	1.25	1.13	1.17
1200	4.09	3.83	0.26	28.08	1.81	1.05	1.24	1.07
1400	4.20	4.03	0.17	27.54	2.58	1.18	1.40	1.16
1600	4.36	4.24	0.12	24.89	3.28	1.42	1.60	1.33
1800	4.60	4.47	0.14	22.46	4.07	1.64	1.82	1.53
2000	4.91	4.69	0.23	20.69	4.99	1.85	2.07	1.74
2100	5.08	4.80	0.29	20.03	5.32	1.93	2.20	1.84
2300	5.40	4.96	0.44	18.96	5.72	2.02	2.40	2.00

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

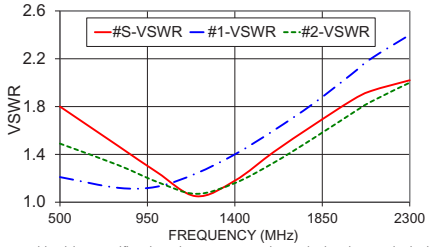
SYPJ-2-222+
TOTAL LOSS



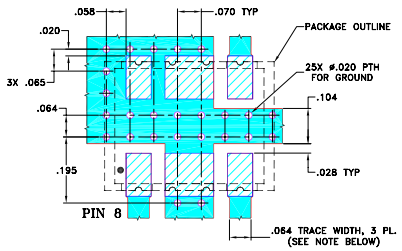
SYPJ-2-222+
ISOLATION



SYPJ-2-222+
VSWR



Demo Board MCL P/N: TB-427+
Suggested PCB Layout (PL-274)

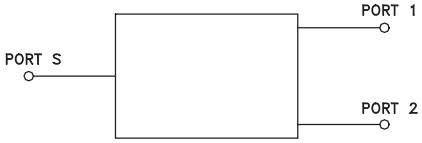


NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Electrical Schematic



Notes
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/MCLStore/terms.jsp