

# Ultra-Small Ceramic Power Splitter/Combiner

## SCN-3-13+ SCN-3-13

3 Way-0° 50Ω 750 to 1325 MHz



CASE STYLE: FV1206-1  
PRICE: \$3.95 ea. QTY. (10-49)  
\$3.60 ea. QTY. (100)

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

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

### Maximum Ratings

Operating Temperature -55°C to 100°C

Storage Temperature -55°C to 100°C

Power Input (as a splitter) 15W\* max.

\* Derate linearly to 6W at 100°C ambient.

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

### Pin Connections

SUM PORT 2

PORT 1 6

PORT 2 5

PORT 3 4

GROUND 1,3

PORT 1-2, 2-3 resistor external 124 ohms

PORT 1-3 resistor external 127 ohms

### Features

- isolation resistors, external
- low insertion loss, 1.0 dB typ.
- excellent amplitude unbalance, 0.3 dB typ.
- very good phase unbalance, 1 deg. typ.
- high isolation, 12 dB typ.
- excellent power handling, 15W as splitter
- small size, 0.12"X0.06"X0.035"
- ESD non-sensitive
- temperature stable LTCC technology
- wrap around, terminations for excellent solderability
- low cost

### Applications

- DSS
- WLAN
- satellite communication
- GSM, GPS
- ISM applications
- defense applications

### Electrical Specifications

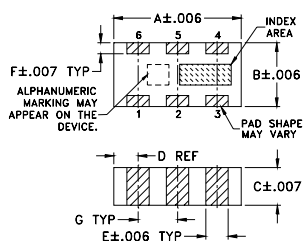
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 4.8 dB		PHASE UNBALANCE (Degrees)		AMPLITUDE UNBALANCE (dB)		RETURN LOSS (dB)	
	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	INPUT Typ.	OUTPUT Typ.
$f_c - f_u$										
750-1325	12	10	1.0	1.5	1.0	3.0	0.3	0.7	12	20
850-1000	16	12	0.4	0.8	0.5	3.0	0.2	0.5	15	20

### Typical Performance Data

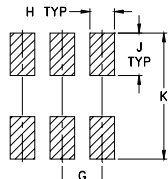
Freq. (MHz)	Total Loss <sup>1</sup> (dB)			Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	Return Loss (dB)		
	S-1	S-2	S-3		1-2	1-3	2-3		S	1	2
750.00	5.34	5.51	5.44	0.17	14.30	12.76	14.40	0.91	10.53	20.85	19.89
800.00	5.26	5.44	5.36	0.17	15.41	13.51	15.51	1.02	11.47	21.53	21.25
850.00	5.19	5.38	5.29	0.19	16.74	14.37	16.81	1.07	12.65	21.58	22.33
900.00	5.12	5.32	5.23	0.20	18.39	15.41	18.41	1.20	14.17	21.18	22.67
950.00	5.06	5.27	5.18	0.22	20.49	16.67	20.45	1.30	16.24	20.59	22.75
1000.00	5.02	5.25	5.14	0.23	23.24	18.24	23.00	1.39	19.19	19.97	22.41
1050.00	4.99	5.24	5.12	0.25	26.57	20.24	25.81	1.45	23.51	19.48	22.03
1100.00	4.99	5.26	5.13	0.27	27.86	22.80	26.64	1.54	26.97	19.24	22.00
1150.00	5.03	5.32	5.18	0.29	24.65	25.48	23.98	1.61	21.70	19.28	22.07
1200.00	5.11	5.42	5.27	0.32	21.07	25.93	20.77	1.64	16.90	19.74	22.80
1250.00	5.24	5.59	5.41	0.35	18.22	23.16	18.08	1.73	13.45	20.72	24.18
1300.00	5.44	5.83	5.62	0.39	16.00	20.05	15.93	1.79	10.86	22.51	27.00
1325.00	5.57	5.98	5.76	0.41	15.07	18.71	15.03	1.81	9.77	23.94	29.65

1. Total Loss = Insertion Loss + 4.8dB splitter loss.

### Outline Drawing



### PCB Land Pattern



Suggested Layout, Tolerance to be within ±0.02

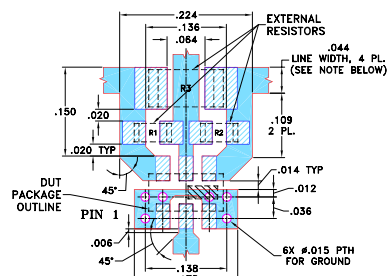
### Outline Dimensions (inch/mm)

A	B	C	D	E	F
.126	.063	.035	.024	.022	.011
3.20	1.60	0.89	0.61	0.56	0.28

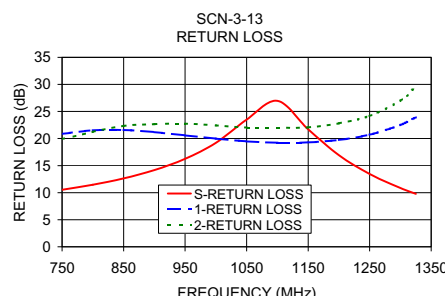
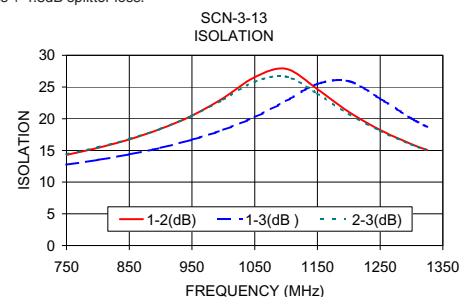
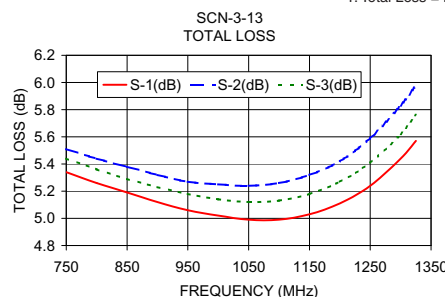
G	H	J	K	wt
.039	.024	.042	.123	grams
0.99	0.61	1.07	3.12	.020

### Demo Board MCL P/N: TB-303 Suggested PCB Layout (PL-171)

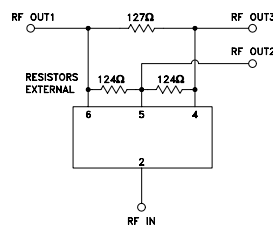


- RESISTORS: R1-R2: 124 Ohm, 0603 SIZE; R3: 127 Ohm, 1206 SIZE.  
NOTE:  
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS: .020 ± .0015; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. RESISTOR LAND PATTERNS ARE SHOWN AS PER IPC-SM-782A.  
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT
- DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK



### electrical schematic



For detailed performance specs & shopping online see web site

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