



Mini-Circuits®

ULTRA-SMALL CERAMIC

Power Splitter/Combiner

SCN-3-13+

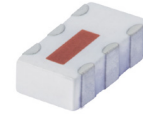
3 Way-0° 50Ω 750 to 1325 MHz

FEATURES

- Isolation Resistor, External 124Ω and 127Ω
- Low Insertion Loss, 1.0 dB Typ.
- Excellent Amplitude Unbalance, 0.3 dB Typ.
- Excellent Phase Unbalance, 1 Deg. Typ.
- High Isolation, 12 dB Typ.
- Excellent Power Handling, 15 W as a Splitter
- Small Size, 0.12x0.06x0.035"
- ESD Non-Sensitive
- Temperature Stable LTCC Technology
- Wrap Around Terminations for Excellent Solderability
- Low Cost

APPLICATIONS

- DSS
- GSM, GPS
- WLAN
- ISM Applications
- Satellite Communication
- Defense Applications



Generic photo used for illustration purposes only

CASE STYLE: FV1206-1

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

ELECTRICAL SPECIFICATIONS AT +25°C

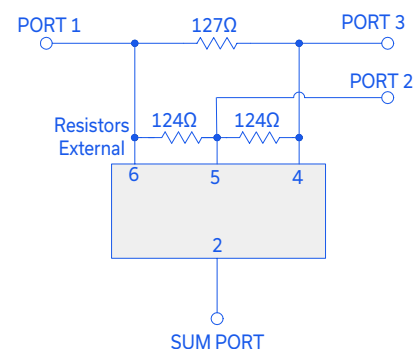
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		750		1325	MHz
Insertion Loss, Above 4.8 dB	750-1325		1.0	1.5	dB
	850-1000		0.4	0.8	
Isolation	750-1325	10	12		dB
	850-1000	12	16		
Phase Unbalance	750-1325		1.0	3.0	Degree
	850-1000		0.5	3.0	
Amplitude Unbalance	750-1325		0.3	0.7	dB
	850-1000		0.2	0.5	
Return Loss (Input)	750-1325		12		dB
	850-1000		20		
Return Loss (Output)	750-1325		15		dB
	850-1000		20		

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C
Power Input (as a Splitter)	15 W ¹ max.

1. Derate linearly to 6 W at +100°C ambient.
Permanent damage may occur if any of these limits are exceeded.
Power input as a combiner is limited by rating of external resistors.

ELECTRICAL SCHEMATIC



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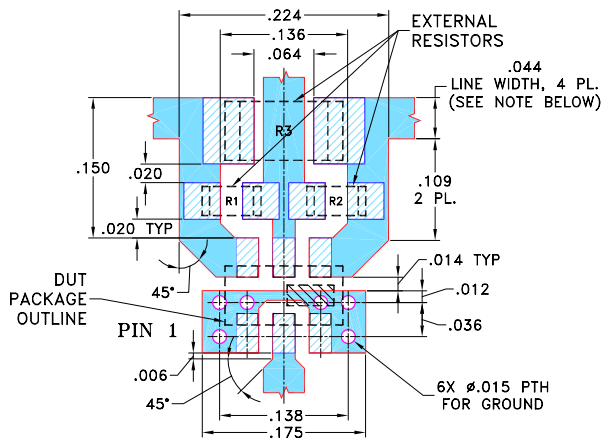
Power Splitter/Combiner

SCN-3-13+

3 Way-0° 50Ω 750 to 1325 MHz

SUM PORT	2
PORT 1	6
PORT 2	5
PORT 3	4
GROUND	1,3
PORT 1-2, 2-3	Resistor external 124Ω
PORT 1-3	Resistor external 127Ω

DEMO BOARD MCL P/N: TB-SCN-3-13+
SUGGESTED PCB LAYOUT (PL-171)



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.

OUTLINE DIMENSIONS (Inches)

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

TAPE & REEL INFORMATION: F75





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ULTRA-SMALL CERAMIC

Power Splitter/Combiner

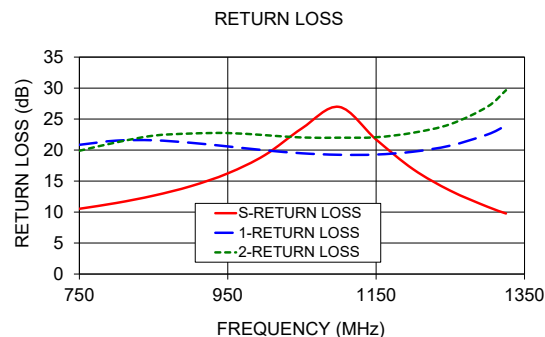
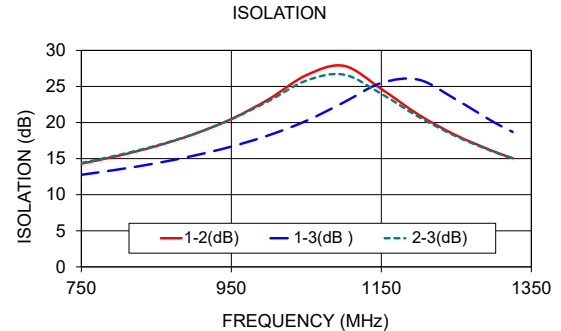
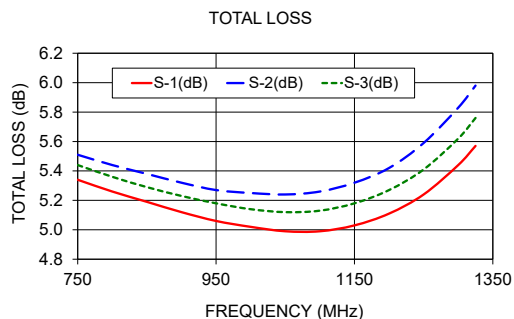
SCN-3-13+

3 Way-0° 50Ω 750 to 1325 MHz

TYPICAL PERFORMANCE DATA

Frequency (MHz)	Total Loss ² (dB)			Amplitude Unbalance (dB)	Isolation (dB)			Phase Unbalance (deg.)	Return Loss (dB)		
	S-1	S-2	S-3		1-2	1-3	2-3		S	1	2
750	5.34	5.51	5.44	0.17	14.30	12.76	14.40	0.91	10.53	20.85	19.89
800	5.26	5.44	5.36	0.17	15.41	13.51	15.51	1.02	11.47	21.53	21.25
850	5.19	5.38	5.29	0.19	16.74	14.37	16.81	1.07	12.65	21.58	22.33
900	5.12	5.32	5.23	0.20	18.39	15.41	18.41	1.20	14.17	21.18	22.67
950	5.06	5.27	5.18	0.22	20.49	16.67	20.45	1.30	16.24	20.59	22.75
1000	5.02	5.25	5.14	0.23	23.24	18.24	23.00	1.39	19.19	19.97	22.41
1050	4.99	5.24	5.12	0.25	26.57	20.24	25.81	1.45	23.51	19.48	22.03
1100	4.99	5.26	5.13	0.27	27.86	22.80	26.64	1.54	26.97	19.24	22.00
1150	5.03	5.32	5.18	0.29	24.65	25.48	23.98	1.61	21.70	19.28	22.07
1200	5.11	5.42	5.27	0.32	21.07	25.93	20.77	1.64	16.90	19.74	22.80
1250	5.24	5.59	5.41	0.35	18.22	23.16	18.08	1.73	13.45	20.72	24.18
1300	5.44	5.83	5.62	0.39	16.00	20.05	15.93	1.79	10.86	22.51	27.00
1325	5.57	5.98	5.76	0.41	15.07	18.71	15.03	1.81	9.77	23.94	29.65

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



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



3 Way-0° Power Splitter/Combiner

SCN-3-13+

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @Temperature = +25°C

FREQ. (MHz)	TOTAL LOSS ¹ (dB)			AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION (dB)			VSWR (:1)			
	S-1	S-2	S-3			1-2	1-3	2-3	S	1	2	3
10	6.03	6.01	6.07	0.06	0.24	6.09	6.15	6.10	2.96	2.91	2.94	2.93
50	6.00	6.00	6.07	0.07	0.52	6.16	6.25	6.20	2.93	2.83	2.86	2.86
100	6.04	6.01	6.08	0.07	0.43	6.38	6.48	6.41	2.91	2.68	2.73	2.69
150	6.06	6.03	6.08	0.05	0.33	6.68	6.80	6.71	2.89	2.50	2.56	2.50
200	6.06	6.02	6.08	0.06	0.31	7.03	7.18	7.07	2.86	2.31	2.38	2.31
250	6.06	6.02	6.06	0.04	0.32	7.46	7.60	7.50	2.83	2.12	2.20	2.12
300	6.02	6.00	6.03	0.03	0.40	7.92	8.04	7.96	2.78	1.94	2.03	1.94
350	5.99	5.98	6.01	0.03	0.48	8.43	8.52	8.46	2.73	1.79	1.87	1.78
400	5.95	5.95	5.98	0.03	0.55	8.98	8.99	9.00	2.67	1.65	1.73	1.65
450	5.89	5.90	5.94	0.05	0.60	9.56	9.49	9.57	2.60	1.53	1.60	1.53
500	5.84	5.86	5.88	0.04	0.70	10.19	10.00	10.19	2.52	1.42	1.49	1.43
550	5.78	5.81	5.83	0.05	0.77	10.85	10.52	10.84	2.43	1.34	1.40	1.34
600	5.73	5.76	5.78	0.05	0.87	11.59	11.09	11.55	2.34	1.26	1.32	1.27
650	5.65	5.70	5.71	0.06	0.98	12.38	11.70	12.31	2.24	1.21	1.25	1.21
700	5.57	5.62	5.64	0.07	1.00	13.26	12.36	13.17	2.13	1.16	1.19	1.17
725	5.53	5.59	5.60	0.07	1.02	13.74	12.72	13.63	2.08	1.15	1.17	1.15
750	5.49	5.55	5.57	0.08	1.09	14.26	13.10	14.13	2.02	1.14	1.15	1.14
775	5.45	5.53	5.53	0.08	1.14	14.83	13.51	14.66	1.96	1.13	1.14	1.13
800	5.41	5.48	5.49	0.08	1.15	15.42	13.93	15.24	1.90	1.13	1.12	1.12
825	5.36	5.45	5.46	0.10	1.20	16.09	14.41	15.87	1.83	1.13	1.12	1.12
850	5.32	5.41	5.42	0.10	1.22	16.82	14.93	16.56	1.77	1.14	1.11	1.12
875	5.28	5.37	5.38	0.10	1.26	17.63	15.48	17.32	1.70	1.14	1.11	1.12
900	5.24	5.34	5.34	0.10	1.31	18.53	16.10	18.17	1.63	1.15	1.11	1.13
925	5.20	5.31	5.31	0.11	1.28	19.57	16.77	19.12	1.56	1.15	1.11	1.13
950	5.16	5.28	5.28	0.12	1.34	20.76	17.52	20.19	1.49	1.16	1.11	1.13
975	5.11	5.25	5.24	0.14	1.35	22.14	18.37	21.40	1.42	1.16	1.11	1.13
1000	5.08	5.23	5.22	0.15	1.36	23.75	19.32	22.76	1.35	1.16	1.11	1.13
1025	5.05	5.21	5.20	0.16	1.39	25.58	20.40	24.25	1.27	1.16	1.11	1.13
1050	5.03	5.20	5.18	0.17	1.41	27.47	21.58	25.68	1.20	1.16	1.11	1.13
1075	5.01	5.20	5.17	0.19	1.46	28.81	22.91	26.72	1.13	1.16	1.10	1.12
1100	5.00	5.20	5.18	0.20	1.47	28.53	24.29	26.73	1.06	1.15	1.10	1.11
1125	5.01	5.23	5.19	0.22	1.47	26.76	25.43	25.66	1.01	1.14	1.09	1.10
1150	5.02	5.26	5.21	0.24	1.46	24.60	25.92	24.04	1.09	1.12	1.08	1.09
1175	5.05	5.30	5.25	0.25	1.47	22.62	25.49	22.33	1.18	1.11	1.07	1.07
1200	5.09	5.36	5.30	0.27	1.51	20.86	24.26	20.75	1.28	1.09	1.05	1.06
1225	5.16	5.45	5.38	0.30	1.49	19.36	22.73	19.32	1.40	1.07	1.05	1.04
1250	5.24	5.56	5.48	0.32	1.54	18.04	21.18	18.06	1.53	1.06	1.05	1.05
1275	5.34	5.70	5.60	0.35	1.54	16.91	19.77	16.95	1.69	1.05	1.07	1.06
1300	5.48	5.86	5.76	0.38	1.53	15.91	18.49	15.97	1.86	1.06	1.10	1.09
1325	5.63	6.04	5.93	0.41	1.51	15.04	17.38	15.11	2.07	1.09	1.14	1.13
1350	5.82	6.27	6.14	0.45	1.51	14.26	16.39	14.34	2.30	1.13	1.18	1.17
1375	6.05	6.53	6.38	0.48	1.51	13.60	15.55	13.68	2.57	1.17	1.23	1.22
1400	6.31	6.82	6.65	0.52	1.51	13.02	14.79	13.10	2.89	1.22	1.28	1.27
1450	6.91	7.52	7.30	0.60	1.44	12.08	13.58	12.16	3.67	1.34	1.40	1.39
1500	7.65	8.35	8.08	0.70	1.40	11.40	12.68	11.49	4.70	1.47	1.54	1.53
1550	8.50	9.32	8.99	0.82	1.37	10.95	12.04	11.03	6.07	1.62	1.70	1.68
1600	9.46	10.43	10.01	0.97	1.52	10.68	11.60	10.75	7.87	1.78	1.87	1.85

¹ Total Loss = Insertion Loss+ 4.8dB Splitter Loss

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3 Way-0° Power Splitter/Combiner

SCN-3-13+

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @Temperature = -55°C

FREQ. (MHz)	TOTAL LOSS ¹ (dB)			AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION (dB)			VSWR (:1)			
	S-1	S-2	S-3			1-2	1-3	2-3	S	1	2	3
10	6.01	6.01	6.06	0.05	0.26	6.07	6.12	6.08	2.98	2.94	2.96	2.96
50	5.98	5.98	6.04	0.06	0.53	6.12	6.20	6.16	2.95	2.86	2.88	2.88
100	5.99	5.98	6.02	0.04	0.53	6.36	6.44	6.39	2.91	2.72	2.77	2.73
150	6.05	6.00	6.03	0.05	0.13	6.61	6.73	6.62	2.94	2.54	2.58	2.52
200	5.98	5.98	6.01	0.03	0.10	6.98	7.12	7.05	2.87	2.33	2.43	2.35
250	5.99	5.94	5.98	0.05	0.31	7.40	7.54	7.43	2.85	2.16	2.23	2.15
300	5.96	5.94	5.97	0.03	0.26	7.84	7.96	7.88	2.82	1.96	2.05	1.96
350	5.88	5.89	5.93	0.05	0.37	8.35	8.44	8.41	2.74	1.80	1.90	1.83
400	5.87	5.87	5.89	0.02	0.28	8.88	8.89	8.90	2.70	1.67	1.74	1.67
450	5.80	5.82	5.83	0.03	0.46	9.48	9.38	9.48	2.62	1.54	1.63	1.54
500	5.74	5.76	5.78	0.04	0.53	10.08	9.89	10.08	2.54	1.44	1.51	1.45
550	5.68	5.71	5.71	0.03	0.56	10.74	10.40	10.71	2.46	1.36	1.41	1.35
600	5.61	5.65	5.66	0.05	0.70	11.49	10.98	11.44	2.36	1.28	1.33	1.28
650	5.53	5.58	5.59	0.06	0.76	12.29	11.60	12.23	2.26	1.22	1.26	1.23
700	5.45	5.50	5.51	0.06	0.77	13.19	12.28	13.09	2.16	1.18	1.20	1.18
725	5.41	5.47	5.48	0.07	0.77	13.69	12.66	13.60	2.10	1.16	1.17	1.16
750	5.36	5.42	5.44	0.08	0.80	14.24	13.06	14.11	2.04	1.15	1.16	1.15
775	5.31	5.40	5.40	0.09	0.80	14.83	13.48	14.68	1.97	1.14	1.14	1.15
800	5.27	5.35	5.35	0.08	0.83	15.46	13.92	15.26	1.91	1.14	1.13	1.14
825	5.22	5.31	5.31	0.09	0.86	16.15	14.42	15.92	1.85	1.15	1.12	1.13
850	5.18	5.27	5.28	0.10	0.90	16.92	14.96	16.67	1.78	1.15	1.12	1.13
875	5.12	5.23	5.22	0.11	0.91	17.82	15.57	17.53	1.70	1.16	1.12	1.14
900	5.07	5.19	5.18	0.12	0.92	18.84	16.24	18.46	1.63	1.16	1.12	1.14
925	5.03	5.16	5.15	0.13	0.95	19.95	16.96	19.48	1.56	1.16	1.12	1.14
950	4.99	5.12	5.11	0.13	0.97	21.25	17.76	20.65	1.48	1.16	1.12	1.14
975	4.95	5.09	5.07	0.14	0.98	22.81	18.68	22.01	1.41	1.17	1.12	1.14
1000	4.91	5.07	5.05	0.16	1.00	24.74	19.76	23.63	1.33	1.17	1.13	1.14
1025	4.87	5.05	5.03	0.18	1.01	27.00	21.00	25.39	1.25	1.17	1.12	1.14
1050	4.85	5.04	5.01	0.19	1.02	29.18	22.35	26.94	1.18	1.16	1.12	1.13
1075	4.83	5.04	5.00	0.21	1.06	30.15	23.85	27.76	1.11	1.16	1.11	1.12
1100	4.83	5.04	5.00	0.21	1.06	28.80	25.43	27.18	1.04	1.16	1.10	1.11
1125	4.83	5.07	5.02	0.24	1.05	26.27	26.67	25.49	1.05	1.15	1.09	1.10
1150	4.85	5.10	5.04	0.25	1.03	23.82	26.77	23.49	1.13	1.13	1.08	1.09
1175	4.88	5.16	5.09	0.28	1.04	21.74	25.62	21.62	1.23	1.11	1.06	1.07
1200	4.92	5.22	5.15	0.30	1.06	20.01	23.89	19.98	1.34	1.09	1.04	1.05
1225	5.00	5.32	5.23	0.32	1.06	18.55	22.13	18.57	1.46	1.07	1.04	1.03
1250	5.09	5.43	5.34	0.34	1.12	17.26	20.48	17.32	1.61	1.05	1.05	1.04
1275	5.20	5.58	5.47	0.38	1.18	16.15	19.01	16.22	1.78	1.04	1.07	1.06
1300	5.36	5.76	5.65	0.40	1.20	15.17	17.71	15.25	1.99	1.06	1.11	1.10
1325	5.53	5.97	5.83	0.44	1.27	14.33	16.63	14.41	2.22	1.10	1.15	1.14
1350	5.74	6.21	6.06	0.47	1.34	13.59	15.66	13.68	2.50	1.14	1.20	1.19
1375	5.99	6.50	6.33	0.51	1.39	12.96	14.84	13.05	2.81	1.19	1.25	1.25
1400	6.27	6.82	6.63	0.56	1.46	12.42	14.12	12.51	3.19	1.25	1.32	1.31
1450	6.94	7.59	7.34	0.65	1.62	11.55	12.98	11.63	4.13	1.38	1.45	1.44
1500	7.73	8.51	8.20	0.78	1.75	10.95	12.15	11.04	5.44	1.53	1.61	1.60
1550	8.65	9.57	9.18	0.92	1.95	10.56	11.58	10.64	7.21	1.69	1.79	1.77
1600	9.69	10.76	10.28	1.07	2.16	10.35	11.21	10.42	9.69	1.87	1.99	1.95

¹ Total Loss = Insertion Loss+ 4.8dB Splitter Loss

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3 Way-0° Power Splitter/Combiner

SCN-3-13+

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @Temperature = +100°C

FREQ. (MHz)	TOTAL LOSS ¹ (dB)			AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION (dB)			VSWR (:1)			
	S-1	S-2	S-3			1-2	1-3	2-3	S	1	2	3
10	6.04	6.02	6.08	0.06	0.24	6.12	6.18	6.13	2.95	2.88	2.92	2.91
50	6.02	6.01	6.08	0.07	0.63	6.19	6.27	6.22	2.92	2.81	2.85	2.85
100	6.09	6.04	6.11	0.07	0.45	6.39	6.49	6.40	2.93	2.66	2.69	2.66
150	6.07	6.06	6.10	0.04	0.37	6.72	6.84	6.77	2.86	2.47	2.56	2.50
200	6.11	6.06	6.11	0.05	0.47	7.05	7.18	7.06	2.87	2.29	2.36	2.28
250	6.10	6.06	6.11	0.05	0.30	7.48	7.61	7.52	2.84	2.09	2.17	2.09
300	6.04	6.02	6.07	0.05	0.62	7.94	8.07	7.99	2.76	1.92	2.01	1.94
350	6.06	6.02	6.07	0.05	0.48	8.44	8.53	8.45	2.75	1.77	1.83	1.76
400	5.99	6.00	6.04	0.05	0.46	9.01	9.01	9.04	2.67	1.62	1.71	1.63
450	5.94	5.96	5.99	0.05	0.76	9.59	9.52	9.61	2.60	1.51	1.59	1.52
500	5.91	5.93	5.96	0.05	0.76	10.22	10.02	10.21	2.54	1.40	1.47	1.41
550	5.84	5.87	5.90	0.06	0.86	10.90	10.57	10.89	2.44	1.31	1.38	1.33
600	5.79	5.82	5.85	0.06	0.97	11.65	11.15	11.60	2.35	1.25	1.30	1.25
650	5.72	5.76	5.79	0.07	0.99	12.44	11.76	12.38	2.25	1.19	1.23	1.20
700	5.63	5.69	5.71	0.08	1.06	13.34	12.44	13.25	2.13	1.15	1.18	1.16
725	5.60	5.66	5.68	0.08	1.14	13.82	12.80	13.71	2.08	1.13	1.16	1.14
750	5.57	5.62	5.64	0.07	1.17	14.34	13.18	14.20	2.02	1.12	1.14	1.12
775	5.53	5.59	5.61	0.08	1.15	14.90	13.59	14.74	1.96	1.12	1.12	1.11
800	5.48	5.55	5.57	0.09	1.17	15.50	14.01	15.31	1.90	1.11	1.11	1.11
825	5.44	5.52	5.53	0.09	1.21	16.17	14.49	15.94	1.83	1.11	1.10	1.11
850	5.40	5.48	5.50	0.10	1.23	16.89	14.99	16.62	1.76	1.11	1.09	1.11
875	5.35	5.44	5.46	0.10	1.25	17.68	15.53	17.35	1.70	1.12	1.08	1.11
900	5.31	5.41	5.42	0.11	1.28	18.55	16.13	18.17	1.63	1.12	1.08	1.11
925	5.28	5.38	5.39	0.11	1.27	19.54	16.78	19.08	1.56	1.13	1.08	1.11
950	5.24	5.35	5.36	0.12	1.27	20.68	17.50	20.09	1.49	1.13	1.09	1.11
975	5.20	5.33	5.33	0.13	1.33	21.99	18.32	21.24	1.41	1.14	1.09	1.11
1000	5.17	5.30	5.30	0.13	1.29	23.45	19.21	22.47	1.34	1.14	1.09	1.11
1025	5.14	5.29	5.28	0.15	1.31	25.08	20.21	23.83	1.27	1.14	1.09	1.11
1050	5.12	5.28	5.27	0.16	1.31	26.67	21.29	25.05	1.20	1.13	1.08	1.10
1075	5.10	5.28	5.27	0.18	1.31	27.79	22.47	25.92	1.13	1.13	1.08	1.10
1100	5.10	5.29	5.27	0.19	1.31	27.69	23.63	26.01	1.06	1.12	1.07	1.09
1125	5.11	5.32	5.28	0.21	1.34	26.36	24.61	25.24	1.04	1.11	1.07	1.08
1150	5.12	5.35	5.31	0.23	1.30	24.55	25.06	23.89	1.11	1.10	1.06	1.07
1175	5.15	5.40	5.35	0.25	1.33	22.81	24.85	22.41	1.19	1.09	1.05	1.06
1200	5.19	5.46	5.40	0.26	1.31	21.14	23.97	20.96	1.29	1.07	1.05	1.05
1225	5.26	5.55	5.49	0.29	1.29	19.70	22.72	19.62	1.40	1.06	1.05	1.05
1250	5.35	5.66	5.58	0.31	1.27	18.42	21.36	18.40	1.53	1.06	1.07	1.06
1275	5.44	5.78	5.70	0.34	1.23	17.31	20.06	17.32	1.67	1.06	1.09	1.08
1300	5.58	5.95	5.85	0.37	1.21	16.33	18.86	16.36	1.84	1.08	1.12	1.11
1325	5.73	6.12	6.01	0.40	1.17	15.47	17.81	15.52	2.03	1.11	1.15	1.15
1350	5.91	6.33	6.21	0.42	1.16	14.70	16.86	14.77	2.25	1.14	1.19	1.18
1375	6.12	6.58	6.44	0.47	1.11	14.03	16.01	14.11	2.50	1.18	1.23	1.23
1400	6.36	6.85	6.69	0.50	1.08	13.45	15.26	13.52	2.79	1.23	1.28	1.28
1450	6.93	7.51	7.30	0.57	0.96	12.48	14.03	12.55	3.49	1.33	1.39	1.38
1500	7.61	8.28	8.03	0.67	0.86	11.77	13.10	11.84	4.39	1.45	1.51	1.50
1550	8.40	9.18	8.86	0.78	0.71	11.26	12.41	11.34	5.55	1.58	1.65	1.64
1600	9.30	10.20	9.81	0.90	0.53	10.93	11.93	11.01	7.02	1.73	1.80	1.79

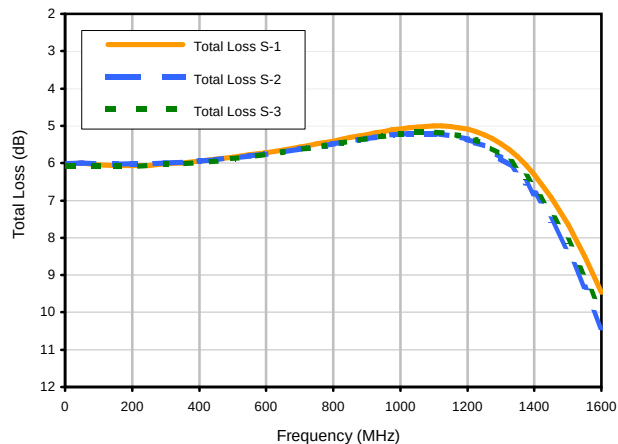
¹ Total Loss = Insertion Loss+ 4.8dB Splitter Loss

3 Way-0° Power Splitter/Combiner

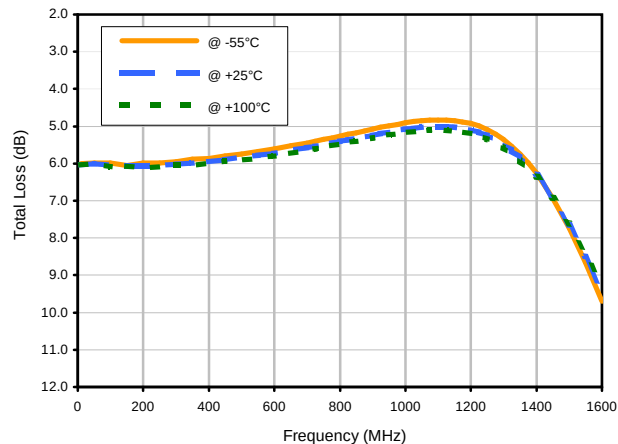
SCN-3-13+

Typical Performance Curves

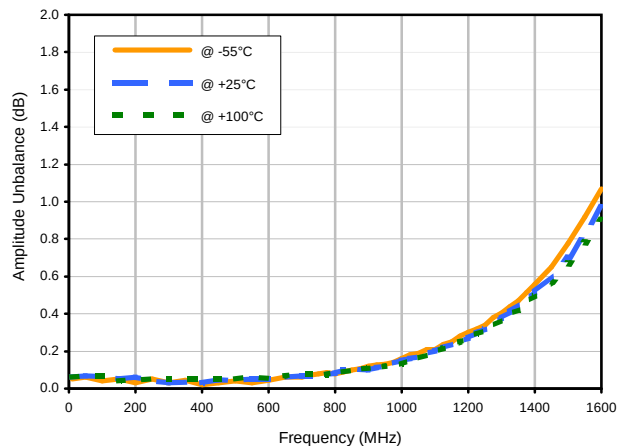
Total Loss



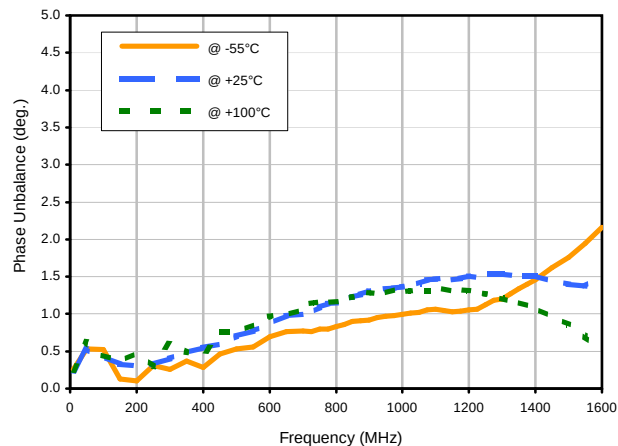
Total Loss S-1 vs. TEMPERATURE



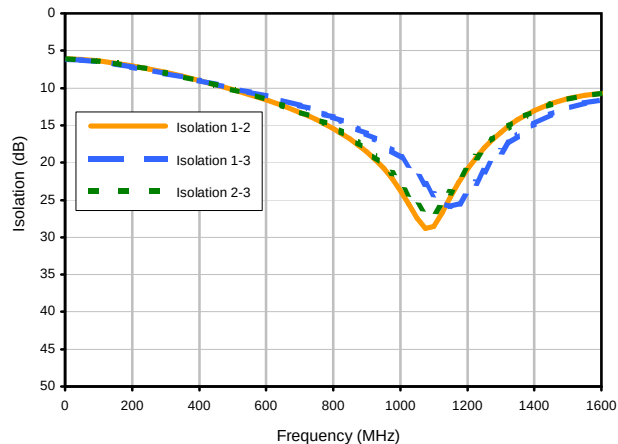
Amplitude Unbalance vs. TEMPERATURE



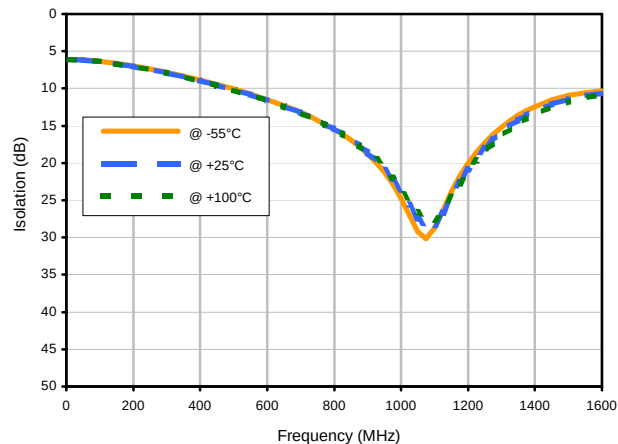
Phase Unbalance vs. TEMPERATURE



Isolation



Isolation 1-2 vs. TEMPERATURE



REV. X2
SCN-3-13+
100627
Page 1 of 2



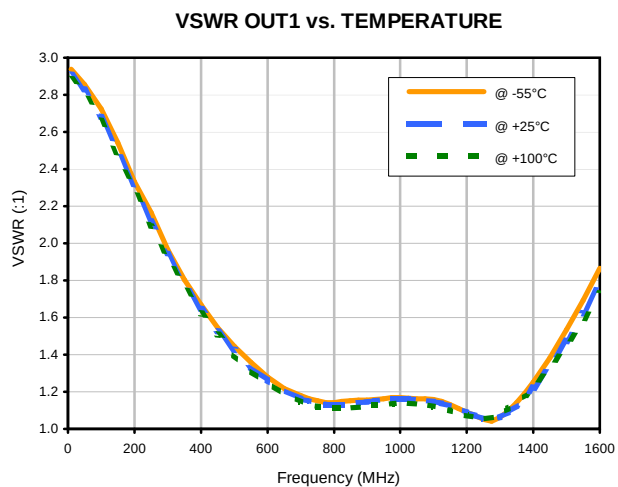
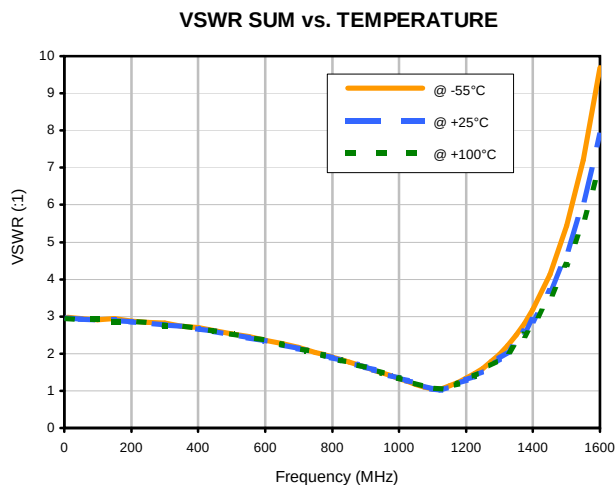
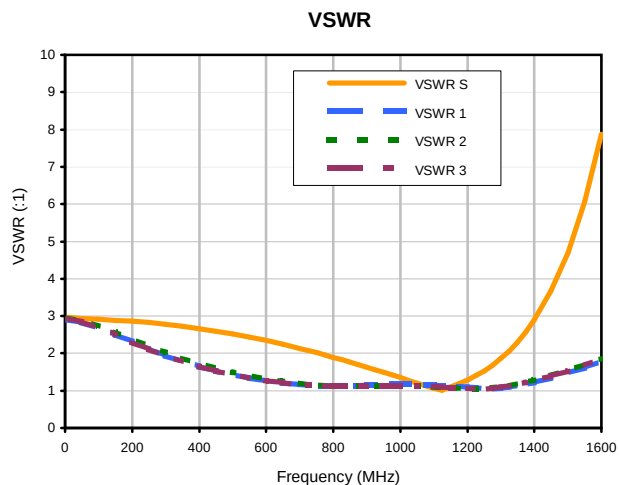
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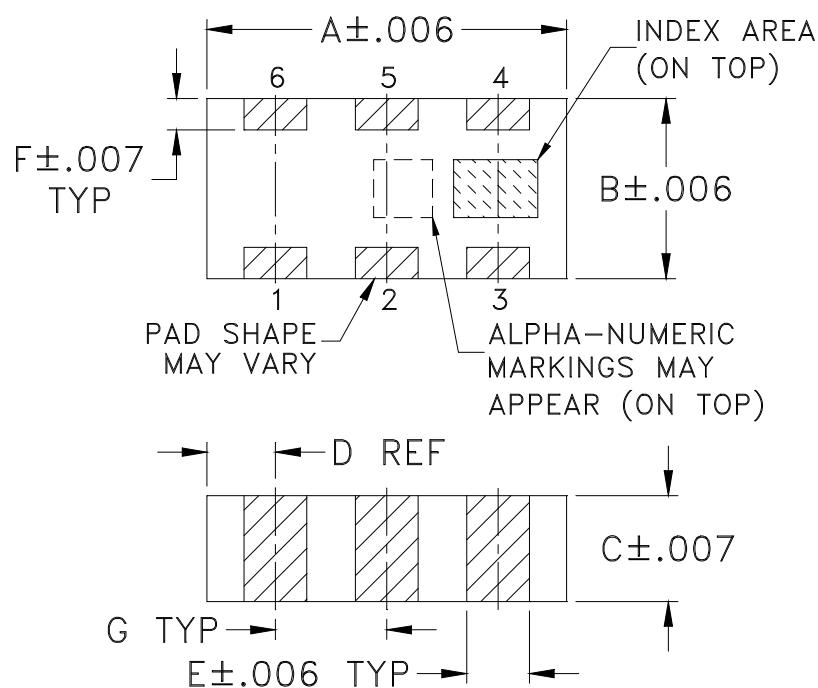
The Design Engineers Search Engine finds the model you need, instantly • For detailed performance specs & shopping online see



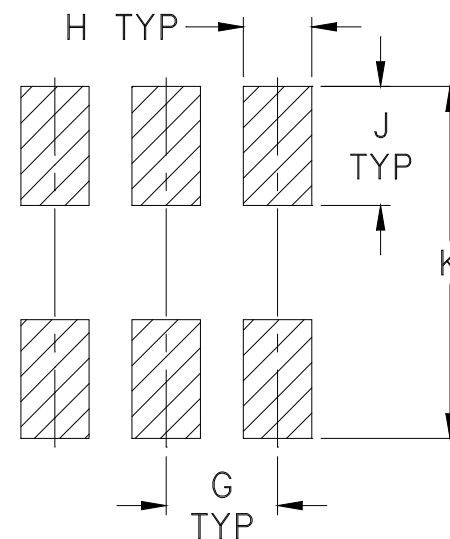
Typical Performance Curves



Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within $\pm .002$

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT. GRAM
FV1206-1	.126 (3.20)	.063 (1.60)	.035 (0.89)	.024 (0.61)	.022 (0.56)	.011 (0.28)	.039 (0.99)	.024 (0.61)	.042 (1.07)	.123 (3.12)	--	--	--	--	.020

Dimensions are in inches (mm). Tolerances: 2 PL. $\pm .01$; 3 PL. $\pm .005$

Notes:

- Open style, ceramic base.
- Termination finish: **as shown below or indicated on Data Sheet.**
For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.



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RF/IF MICROWAVE COMPONENTS

DEVICE ORIENTATION IN T&R

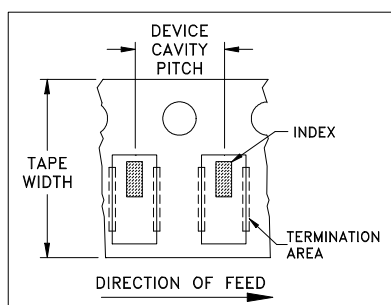


ILLUSTRATION 1

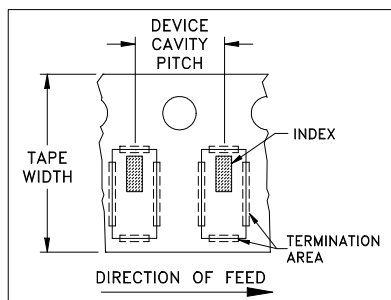


ILLUSTRATION 2

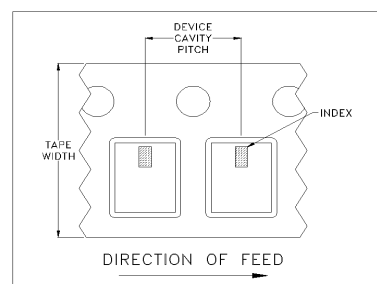


ILLUSTRATION 3

Applicable Case Styles

FV1206-1
FV1206-3

Applicable Case Styles

FV1206-4
FV1206-5
FV1206-6
FV1206-7
FV1206-9

Applicable Case Styles

FV1206-11
FV1206-12
GE0805C-18
NL1008C-6
NL1008C-7
NL1008C-9
NL1008C-10
NL1008C-12

Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
8	4	7	Small quantity standards (see note)	20
				50
				100
				200
				500
				1000
			Standard	3000

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

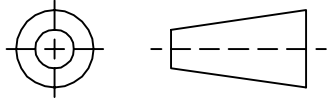


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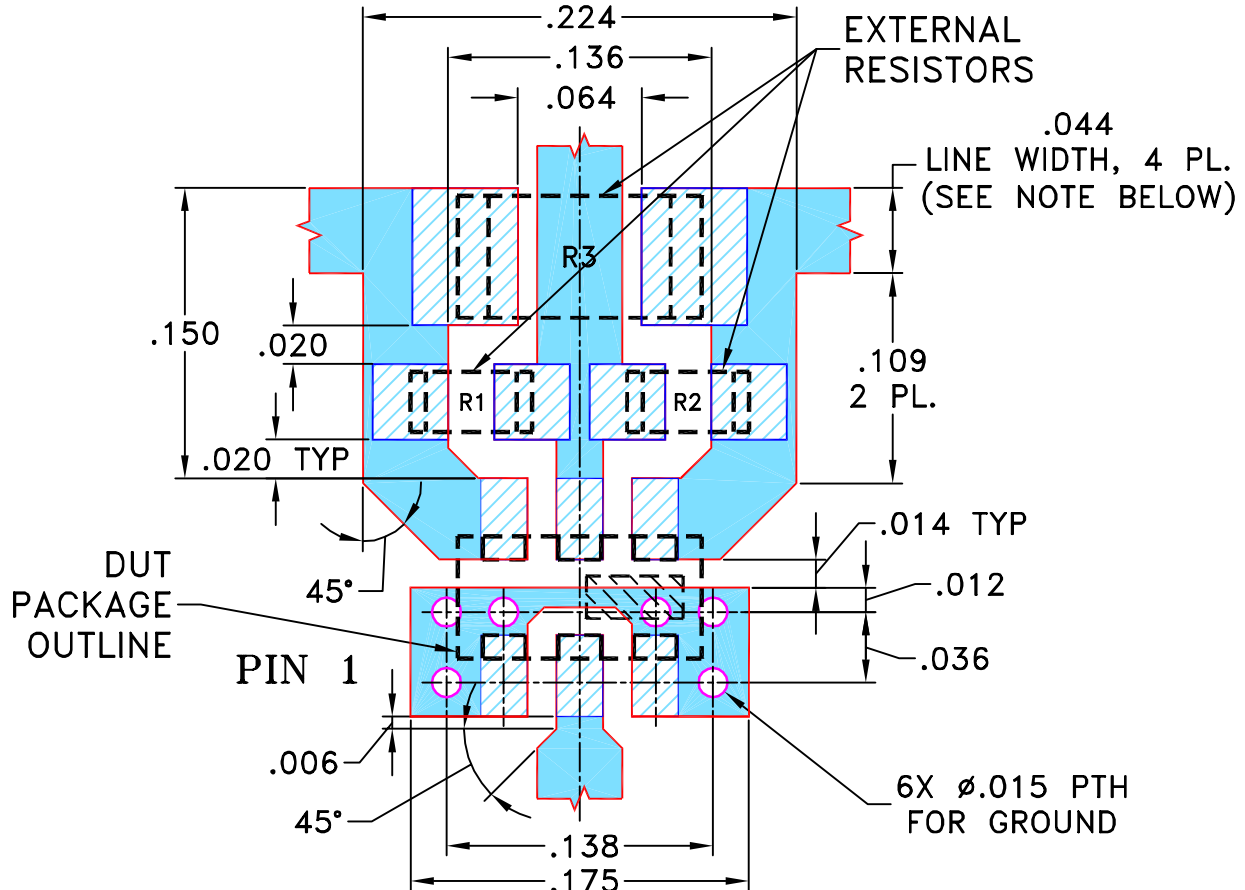
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M94644	NEW RELEASE	10/12/04	MMG	ABD
A	M102713	ADDED "...WITH SMOBC", REMOVED NOTE 2	01/20/06	GT	IL

**SUGGESTED MOUNTING CONFIGURATION
FOR FV1206-1 CASE STYLE, "qc" PIN CONNECTION.**



RESISTORS: R1-R2: 124 Ohm, 0603 SIZE; R3: 127 Ohm, 1206 SIZE.

- NOTES:** 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS: .020" $\pm$.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

UNLESS OTHERWISE SPECIFIED

INITIALS

DATE

DIMENSIONS ARE IN INCHES

TOLERANCES ON:

2 PL DECIMALS $\pm$ 3 PL DECIMALS $\pm$.005ANGLES $\pm$ FRACTIONS $\pm$

DRAWN

MMG

10/04/04

CHECKED

AV

10/12/04

APPROVED

ABD

10/12/04



Mini-Circuits®

13 Neptune Avenue
Brooklyn NY 11235

PL, qc, FV1206-1, SCN-3, TB-303

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ASHEETA1.DWG REV:A DATE:01/12/95

SIZE

A

CODE IDENT

15542

DRAWING NO:

98-PL-171

REV:

A

FILE:

98PL171

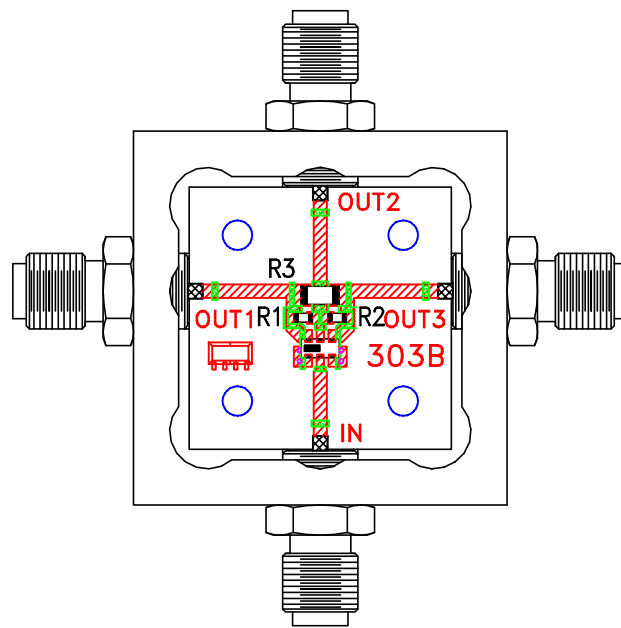
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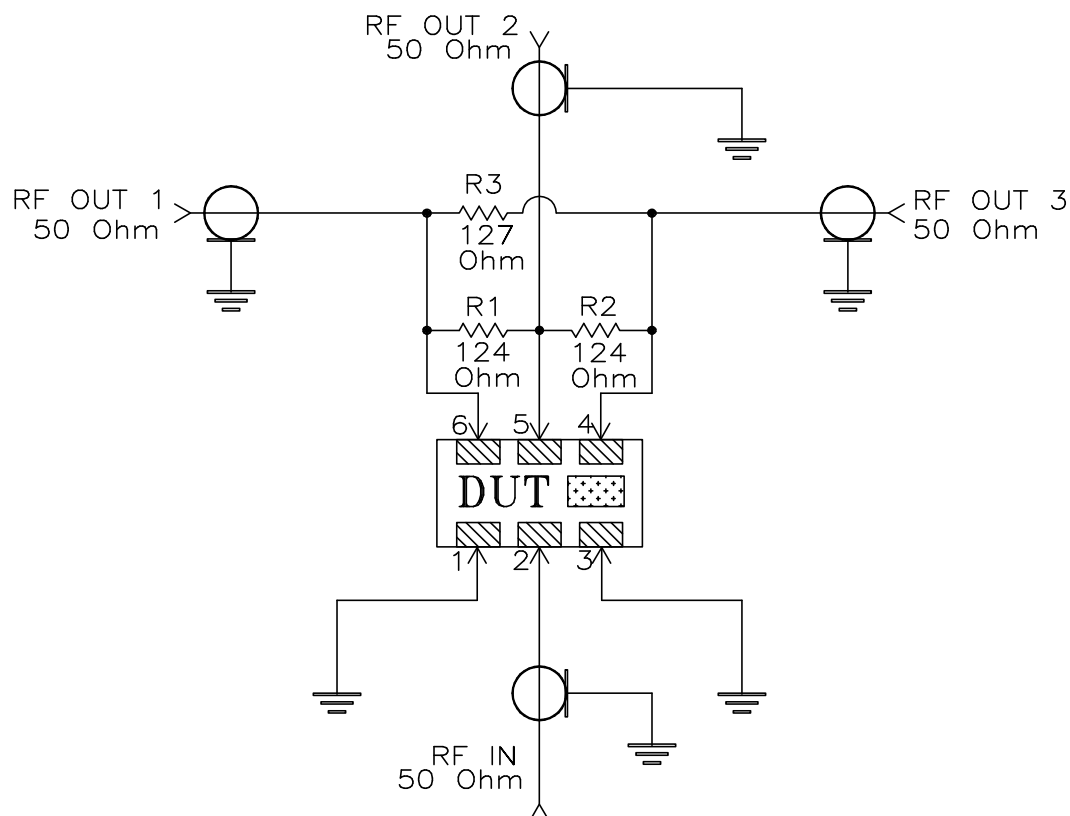
SHEET:

1 OF 1

Evaluation Board and Circuit



TB-303



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.020 inch.

 **Mini-Circuits®**



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A