Engineering Development Model

Power Splitter/Combiner SCPA-ED13008/3

2 Way-0°

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability.
At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

Please click "Back", and then click "Contact Us" for Applications support.

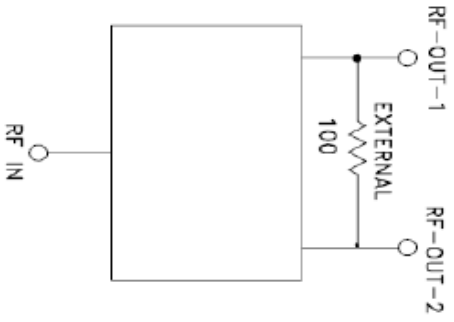
CASE STYLE: 99-01-1270

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		20		700	MHz
Isolation	**20-200 MHz**		26		dB
	200-350 MHz		22		dB
	350-700 MHz		23		dB
Insertion Loss Above 3.0 dB	**20-200 MHz**		0.35		dB
	200-350 MHz		0.40		dB
	350-700 MHz		0.60		dB
Phase Unbalance	**20-200 MHz**		0.11		deg.
	200-350 MHz		0.30		deg.
	350-700 MHz		0.35		deg.
Amplitude Unbalance	**20-200 MHz**		0.02		dB
	200-350 MHz		0.01		dB
	350-700 MHz		0.01		dB
VSWR	**SUM Port**		1.20		(:1)
	OUT Ports		1.25		(:1)

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

PIN CONNECTIONS	
SUM PORT	5
PORT 1	11
PORT 2	13
EXTERNAL RESISTOR (100Ω)	BETWEEN 11 & 13
GROUND	1,2,3,4,6,7,8,9,10,12,14

Functional Diagram



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Typical Performance Data

FREQUENCY (MHz)	TOTAL LOSS[1] (dB)		AMPLITUDE UNBALANCE (dB)	ISOLATION (dB)	PHASE UNBALANCE (Deg)	FREQUENCY (MHz)	VSWR (:1)		
	S-1	S-2		1-2			S	1	2
5.0	3.87	3.89	0.02	10.60	0.05	5.0	1.79	3.59	3.59
10.0	3.53	3.56	0.02	13.48	0.04	10.0	1.38	2.31	2.31
20.0	3.41	3.42	0.02	21.33	0.02	20.0	1.22	1.52	1.52
30.0	3.37	3.39	0.02	26.32	0.02	30.0	1.17	1.36	1.37
40.0	3.35	3.37	0.02	27.04	0.03	40.0	1.15	1.32	1.32
50.0	3.34	3.35	0.01	27.26	0.07	50.0	1.15	1.30	1.30
60.0	3.33	3.34	0.02	27.52	0.08	60.0	1.14	1.28	1.28
70.0	3.32	3.34	0.02	27.77	0.09	70.0	1.14	1.26	1.26
80.0	3.32	3.34	0.02	27.96	0.11	80.0	1.14	1.24	1.24
90.0	3.32	3.33	0.02	28.00	0.12	90.0	1.14	1.23	1.23
100.0	3.32	3.33	0.02	27.90	0.14	100.0	1.14	1.22	1.22
125.0	3.32	3.34	0.02	27.16	0.16	125.0	1.15	1.19	1.19
150.0	3.32	3.34	0.02	26.21	0.17	150.0	1.15	1.16	1.16
175.0	3.33	3.34	0.02	25.23	0.19	175.0	1.15	1.14	1.14
200.0	3.33	3.35	0.02	24.30	0.22	200.0	1.15	1.12	1.12
225.0	3.35	3.36	0.02	23.52	0.24	225.0	1.14	1.10	1.10
250.0	3.36	3.37	0.01	22.95	0.27	250.0	1.14	1.08	1.08
275.0	3.37	3.38	0.01	22.52	0.28	275.0	1.13	1.07	1.06
300.0	3.38	3.39	0.01	22.22	0.30	300.0	1.13	1.06	1.05
325.0	3.39	3.40	0.01	22.06	0.30	325.0	1.12	1.05	1.04
350.0	3.40	3.41	0.01	22.05	0.29	350.0	1.10	1.06	1.05
375.0	3.42	3.43	0.01	22.22	0.30	375.0	1.09	1.08	1.06
400.0	3.44	3.44	0.00	22.55	0.32	400.0	1.08	1.10	1.09
425.0	3.46	3.46	0.00	23.04	0.33	425.0	1.08	1.13	1.11
450.0	3.47	3.47	0.00	23.83	0.39	450.0	1.08	1.16	1.14
475.0	3.50	3.50	0.00	24.96	0.42	475.0	1.10	1.19	1.17
500.0	3.52	3.52	0.00	26.32	0.43	500.0	1.12	1.22	1.20
525.0	3.55	3.55	0.00	27.75	0.43	525.0	1.16	1.25	1.23
550.0	3.59	3.59	0.00	28.41	0.39	550.0	1.21	1.29	1.26
575.0	3.63	3.63	0.00	27.04	0.38	575.0	1.27	1.32	1.29
600.0	3.69	3.69	0.00	24.49	0.38	600.0	1.34	1.35	1.32
625.0	3.76	3.76	0.00	21.86	0.35	625.0	1.42	1.37	1.35
650.0	3.85	3.85	0.00	19.45	0.33	650.0	1.51	1.40	1.37
675.0	3.96	3.96	0.00	17.38	0.29	675.0	1.62	1.41	1.39
700.0	4.08	4.08	0.00	15.61	0.29	700.0	1.75	1.42	1.40
725.0	4.23	4.23	0.00	14.05	0.24	725.0	1.90	1.43	1.41
750.0	4.41	4.41	0.00	12.70	0.21	750.0	2.07	1.43	1.40
775.0	4.62	4.61	0.00	11.52	0.20	775.0	2.25	1.42	1.39
800.0	4.84	4.83	0.01	10.53	0.22	800.0	2.45	1.40	1.38

[1]Total Loss = Insertion Loss + 3dB Splitter Loss

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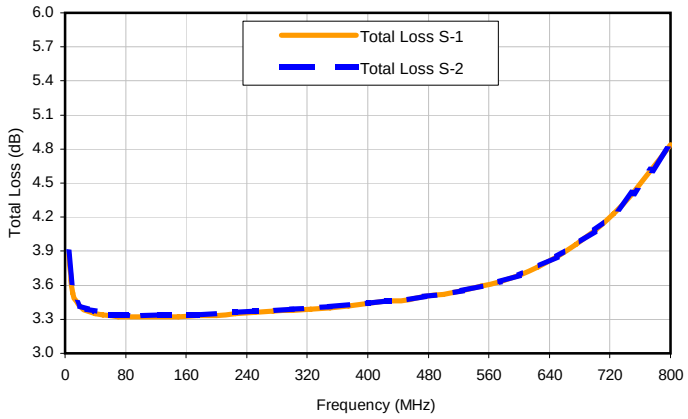
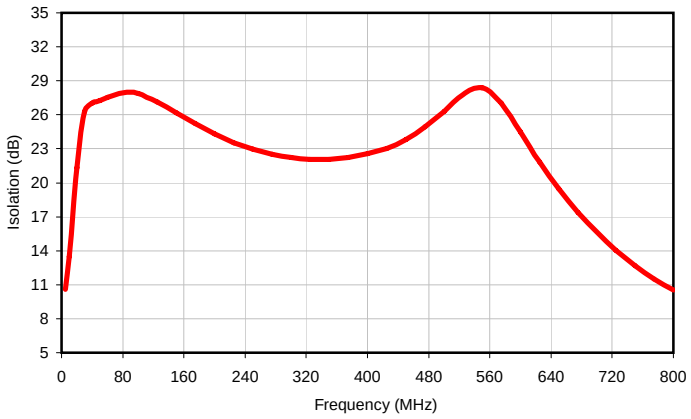
Typical Performance Curves

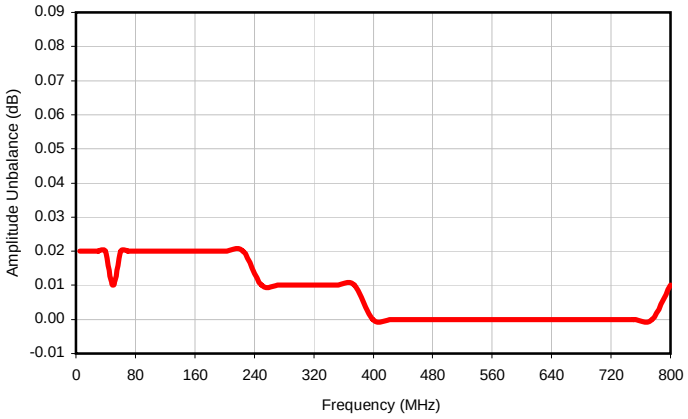
Total Loss



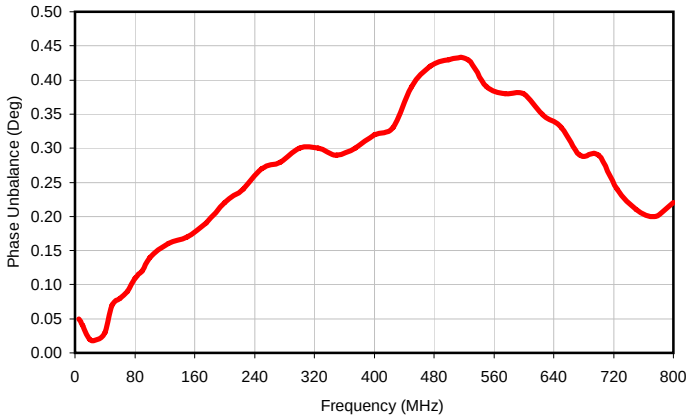
Isolation



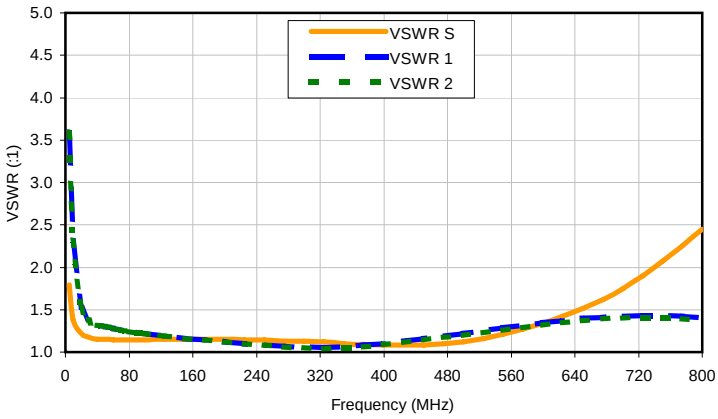
Amplitude Unbalance



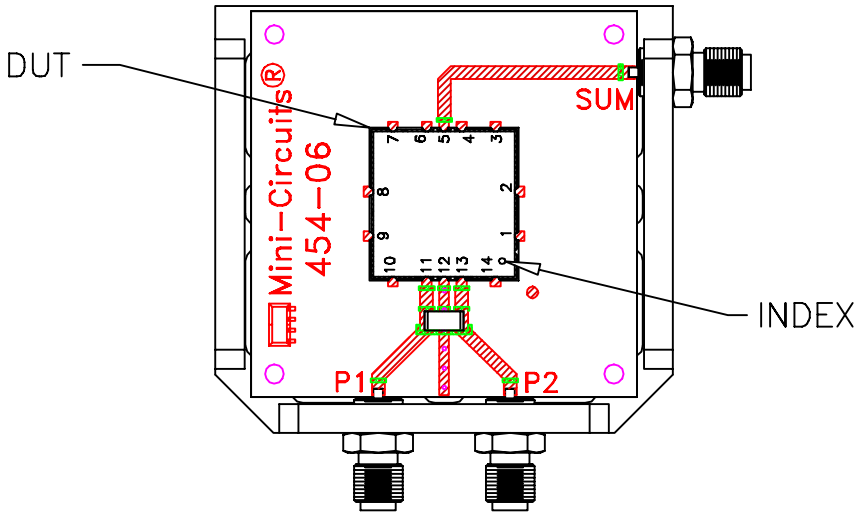
Phase Unbalance



VSWR



Evaluation Board and Circuit



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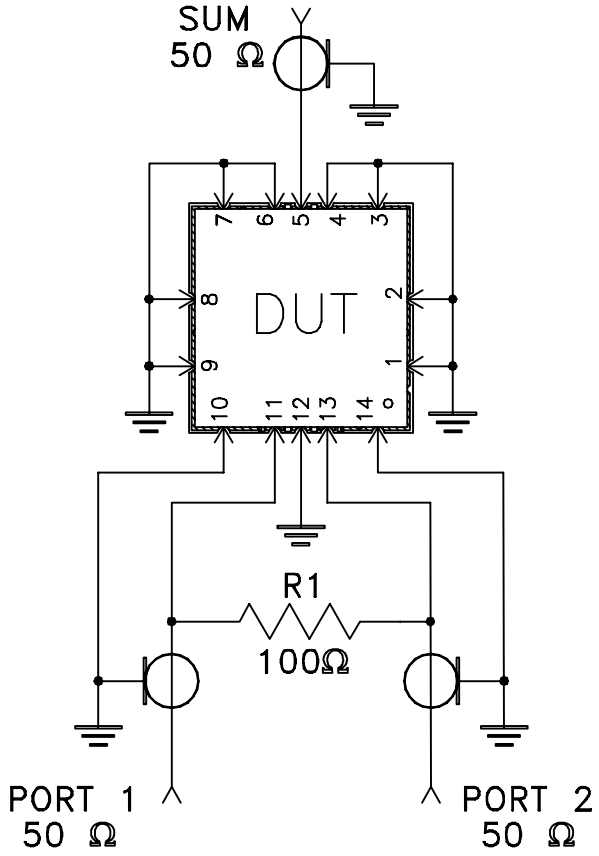

Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

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Environmental Specifications ENV02T1

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	-40° to 85°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
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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, 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
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215