

Power Splitter/Combiner

SXPQ-ED14355/1

2 Way-90°

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.



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CASE STYLE : HF1458

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		50		500 MHz
Isolation	50-500 MHz		26	dB
Insertion Loss Average of Coupled Outputs above 3.0 dB	50-500 MHz		1.5	dB
Phase Unbalance	50-500 MHz		7.0	deg.
Amplitude Unbalance	50-500 MHz		0.5	dB
VSWR	SUM Port		1.6	(:1)
	OUT Ports		2.0	(:1)

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

PIN CONNECTIONS	
SUM PORT	1
PORT 1 (0°)	5
PORT 2 (90°)	6
GROUND	2,3,4,7,8

electrical schematic



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Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹ (dB)		AMP. UNBAL. (dB)	ISOLATION (dB)	PHASE UNBAL. (Deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2					S	1	2
50.0	3.63	3.68	0.05	26.20	86.46	50.0	1.17	1.20	1.26
60.0	3.68	3.76	0.08	27.07	88.51	60.0	1.23	1.22	1.33
70.0	3.74	3.83	0.09	27.74	90.60	70.0	1.28	1.29	1.40
80.0	3.81	3.88	0.08	28.19	92.42	80.0	1.33	1.36	1.47
90.0	3.88	3.93	0.05	28.51	93.88	90.0	1.37	1.45	1.53
100.0	3.95	3.97	0.02	28.71	94.98	100.0	1.40	1.53	1.58
125.0	4.12	4.05	0.07	28.78	96.35	125.0	1.48	1.72	1.67
150.0	4.25	4.09	0.16	28.40	96.25	150.0	1.53	1.89	1.72
175.0	4.37	4.11	0.25	28.16	95.34	175.0	1.56	2.02	1.73
200.0	4.45	4.12	0.33	27.89	93.97	200.0	1.58	2.10	1.72
225.0	4.53	4.10	0.42	28.24	92.34	225.0	1.58	2.13	1.69
250.0	4.51	4.10	0.41	27.40	90.49	250.0	1.57	2.12	1.65
275.0	4.50	4.11	0.39	27.13	89.05	275.0	1.55	2.07	1.61
300.0	4.47	4.12	0.35	26.99	87.79	300.0	1.52	1.98	1.58
325.0	4.43	4.14	0.29	26.89	86.86	325.0	1.48	1.87	1.56
350.0	4.38	4.18	0.20	26.82	86.30	350.0	1.44	1.73	1.55
375.0	4.34	4.23	0.11	26.73	86.17	375.0	1.39	1.58	1.56
400.0	4.32	4.30	0.02	26.62	86.50	400.0	1.35	1.44	1.59
425.0	4.34	4.37	0.03	26.49	87.34	425.0	1.32	1.32	1.63
450.0	4.46	4.44	0.02	26.37	88.48	450.0	1.29	1.25	1.68
475.0	4.61	4.53	0.09	26.44	88.77	475.0	1.27	1.27	1.74
500.0	4.65	4.61	0.04	26.43	89.97	500.0	1.30	1.36	1.80

¹Total Loss = Insertion Loss + 3dB Splitter Loss



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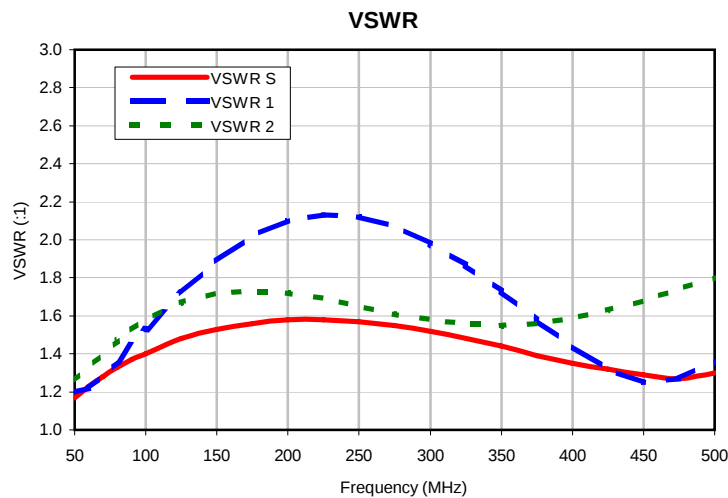
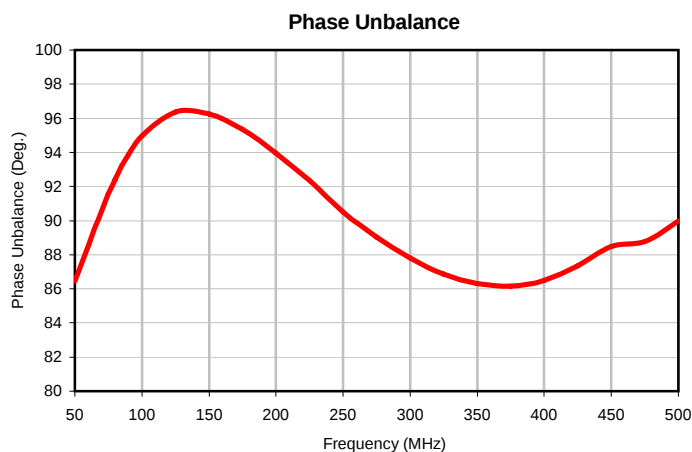
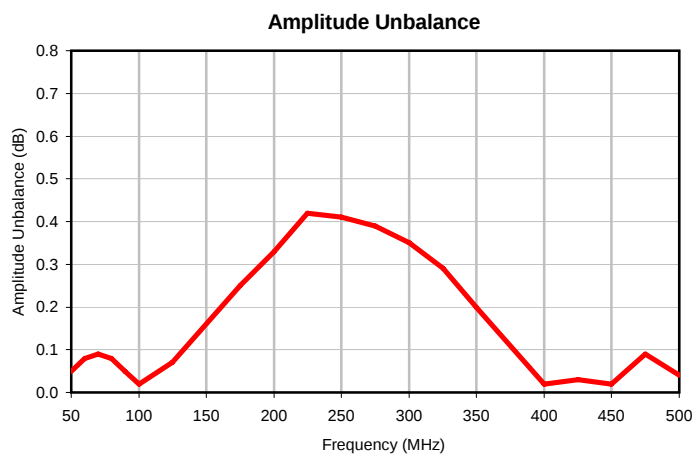
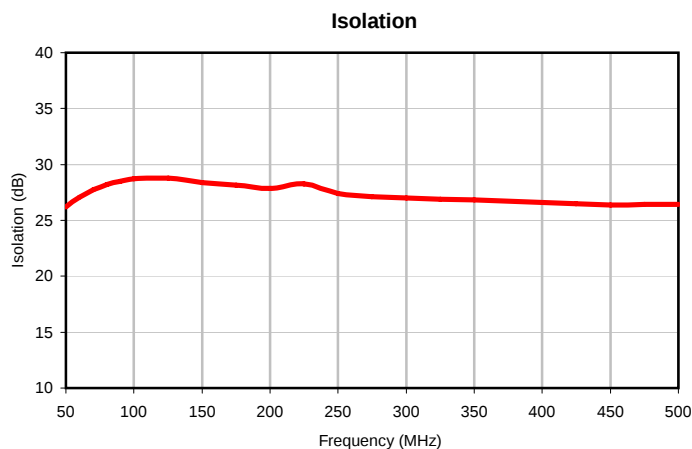
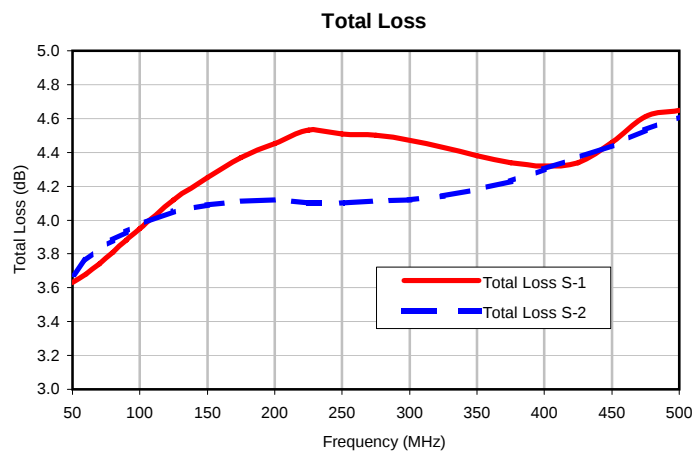
IF/RF MICROWAVE COMPONENTS

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Typical Performance Curves



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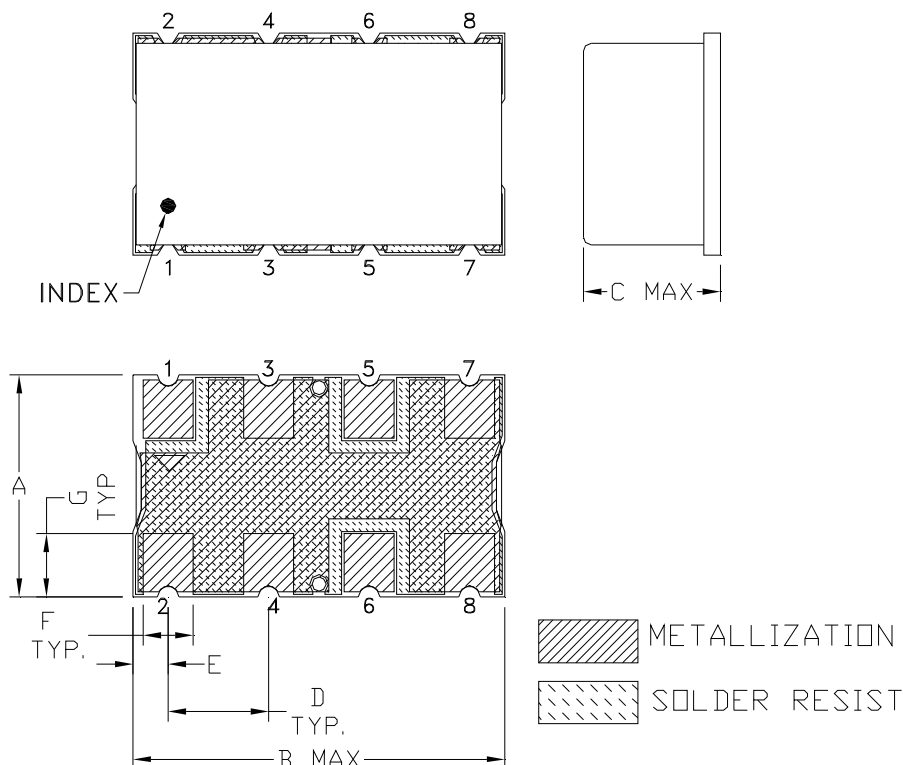
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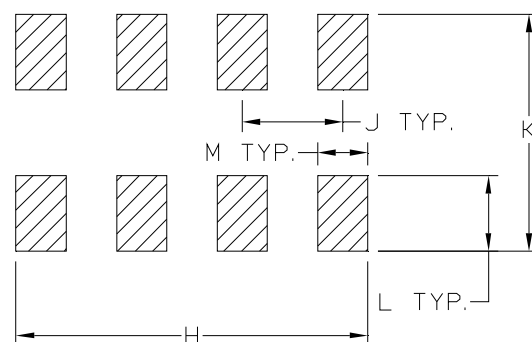
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Outline Dimensions



PCB Land Pattern



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

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAMS
HF1458	.44 (11.18)	.750 (19.05)	.295 (3.56)	.200 (5.08)	.07 (1.78)	.100 (2.54)	.125 (3.18)	.697 (17.70)	.200 (5.08)	.470 (11.94)	.150 (3.81)	.100 (2.54)	3.0

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm.015$ "; 3 Pl. $\pm.01$ "

Notes:

- Case material: Nickel-Silver alloy.
- Base: Printed wiring laminate.
- Termination finish:
For RoHS Case Styles: 2-5 μ inch (.05-.13 microns) Gold over 120-240 μ inch (3.05-6.10 microns) Nickel plate.
For RoHS-5 Case Styles: Tin-Lead plate.

Tape & Reel Packaging TR-F5



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
32	16	13	500

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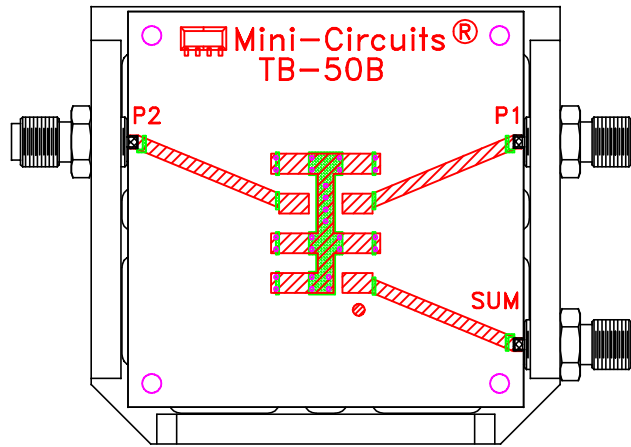
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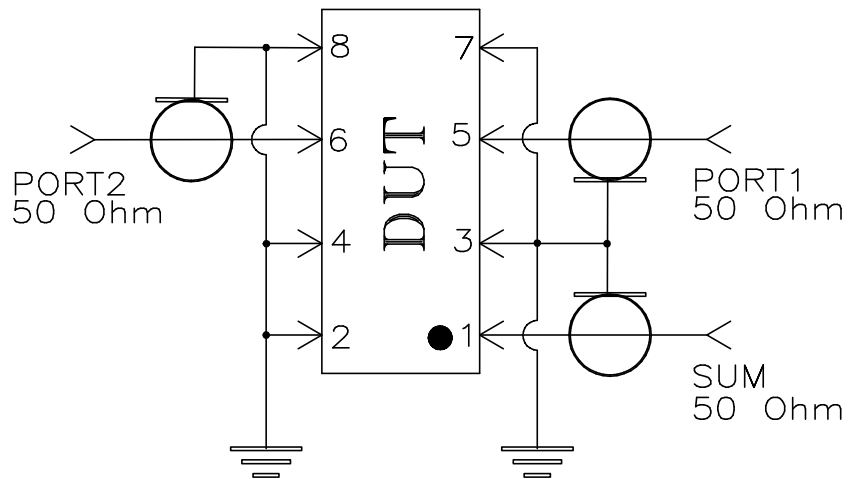
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Evaluation Board and Circuit



TB-50+



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.030 inch.

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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