

Power Splitter/Combiner

SCPS-ED16170/1

4 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 : HF1485

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		0.1		300 MHz
Isolation	.1-300 MHz		28	dB
Insertion Loss Above 6 dB	.1-300 MHz		0.30	dB
Phase Unbalance	.1-300 MHz		1.00	deg.
Amplitude Unbalance	.1-300 MHz		0.05	dB
VSWR	SUM PORT		1.10	(:1)
	OUTPUT PORTS		1.10	(:1)

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

PIN CONNECTIONS	
SUM PORT	6
PORT 1	1
PORT 2	3
PORT 3	5
PORT N	7
GND EXT	2,4,8

Functional Diagram



4 Way-0° Power Splitter/Combiner

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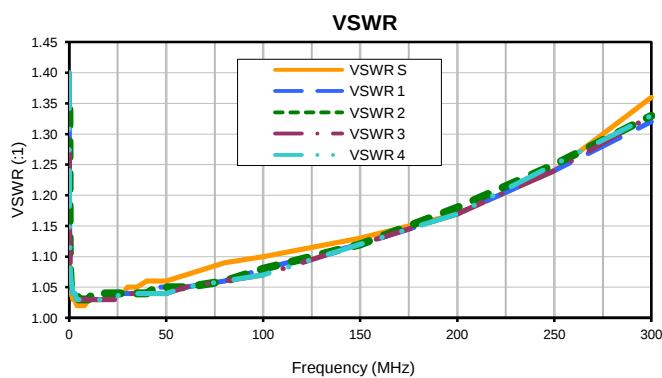
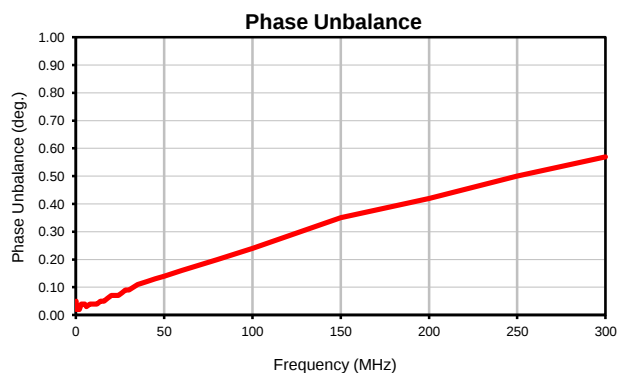
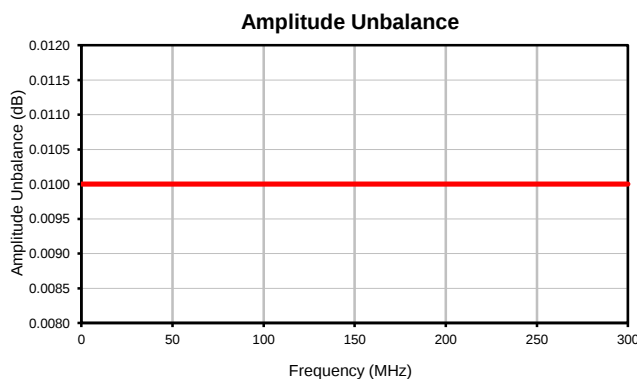
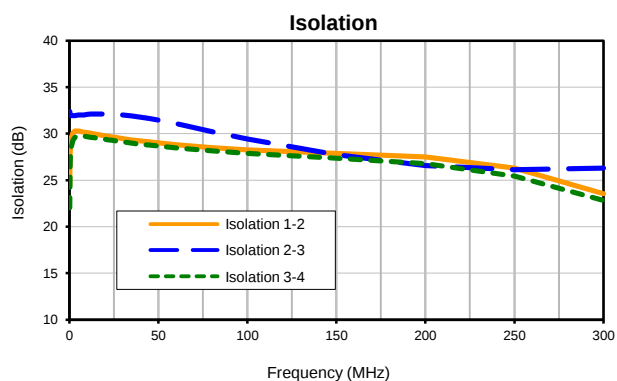
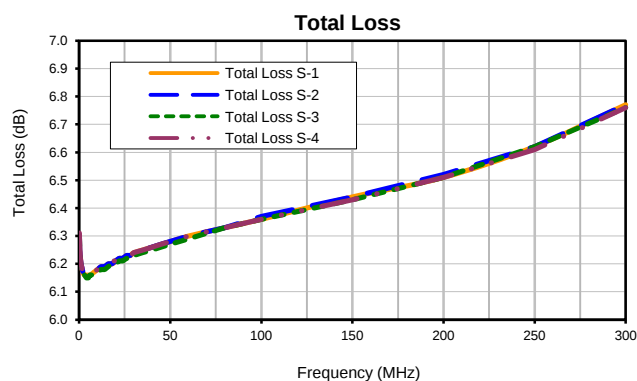
Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹ (dB)				AMP. UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)				
	S-1	S-2	S-3	S-4		1-2	2-3	3-4			S	1	2	3	4
0.1	6.30	6.30	6.30	6.31	0.01	24.36	32.40	22.02	0.05	0.1	1.21	1.34	1.34	1.40	1.40
0.3	6.25	6.25	6.24	6.25	0.01	27.67	32.17	26.30	0.02	0.3	1.08	1.12	1.12	1.14	1.14
0.5	6.23	6.23	6.23	6.24	0.01	28.70	32.01	27.53	0.03	0.5	1.06	1.08	1.08	1.09	1.09
0.7	6.22	6.22	6.21	6.22	0.01	29.18	31.96	28.13	0.03	0.7	1.05	1.07	1.07	1.07	1.07
1.0	6.20	6.20	6.19	6.20	0.01	29.61	31.93	28.60	0.02	1.0	1.04	1.05	1.05	1.06	1.06
2.0	6.17	6.17	6.16	6.17	0.01	30.10	31.93	29.31	0.02	2.0	1.03	1.04	1.04	1.04	1.04
3.0	6.16	6.16	6.16	6.16	0.01	30.29	31.94	29.60	0.04	3.0	1.03	1.04	1.04	1.04	1.04
4.0	6.16	6.16	6.15	6.16	0.01	30.29	31.99	29.72	0.04	4.0	1.02	1.03	1.04	1.03	1.03
5.0	6.16	6.16	6.15	6.16	0.01	30.29	32.00	29.73	0.04	5.0	1.02	1.03	1.03	1.03	1.03
6.0	6.16	6.16	6.16	6.16	0.01	30.25	32.03	29.74	0.03	6.0	1.02	1.03	1.03	1.03	1.03
8.0	6.17	6.17	6.16	6.17	0.01	30.17	32.02	29.73	0.04	8.0	1.02	1.03	1.03	1.03	1.03
10.0	6.18	6.18	6.17	6.18	0.01	30.12	32.08	29.68	0.04	10.0	1.03	1.03	1.03	1.03	1.03
12.0	6.19	6.19	6.18	6.19	0.01	30.04	32.11	29.62	0.04	12.0	1.03	1.03	1.04	1.03	1.03
14.0	6.19	6.19	6.18	6.19	0.01	29.97	32.11	29.57	0.05	14.0	1.03	1.04	1.04	1.03	1.03
16.0	6.20	6.20	6.19	6.20	0.01	29.90	32.13	29.51	0.05	16.0	1.03	1.04	1.04	1.03	1.03
18.0	6.20	6.20	6.20	6.21	0.01	29.84	32.12	29.45	0.06	18.0	1.03	1.04	1.04	1.03	1.03
20.0	6.21	6.21	6.20	6.21	0.01	29.77	32.12	29.40	0.07	20.0	1.04	1.04	1.04	1.03	1.03
22.0	6.22	6.22	6.21	6.22	0.01	29.70	32.11	29.33	0.07	22.0	1.04	1.04	1.04	1.03	1.03
24.0	6.22	6.22	6.21	6.22	0.01	29.64	32.09	29.28	0.07	24.0	1.04	1.04	1.04	1.03	1.03
26.0	6.23	6.23	6.22	6.23	0.01	29.59	32.06	29.23	0.08	26.0	1.04	1.04	1.04	1.03	1.04
28.0	6.23	6.23	6.22	6.23	0.01	29.53	32.04	29.17	0.09	28.0	1.04	1.04	1.04	1.04	1.04
30.0	6.24	6.24	6.23	6.24	0.01	29.47	32.00	29.12	0.09	30.0	1.05	1.04	1.04	1.04	1.04
35.0	6.25	6.25	6.24	6.25	0.01	29.34	31.90	28.99	0.11	35.0	1.05	1.04	1.04	1.04	1.04
40.0	6.26	6.26	6.25	6.26	0.01	29.21	31.78	28.86	0.12	40.0	1.06	1.04	1.04	1.04	1.04
45.0	6.27	6.27	6.26	6.27	0.01	29.11	31.63	28.77	0.13	45.0	1.06	1.05	1.05	1.04	1.04
50.0	6.28	6.28	6.27	6.28	0.01	29.01	31.45	28.67	0.14	50.0	1.06	1.05	1.05	1.04	1.04
60.0	6.30	6.30	6.29	6.30	0.01	28.82	31.09	28.48	0.16	60.0	1.07	1.05	1.05	1.05	1.05
80.0	6.33	6.33	6.33	6.33	0.01	28.51	30.24	28.17	0.20	80.0	1.09	1.06	1.06	1.06	1.06
100.0	6.36	6.37	6.36	6.36	0.01	28.25	29.43	27.88	0.24	100.0	1.10	1.08	1.08	1.07	1.07
150.0	6.44	6.44	6.43	6.43	0.01	27.87	27.74	27.37	0.35	150.0	1.13	1.12	1.12	1.12	1.12
200.0	6.51	6.52	6.51	6.51	0.01	27.52	26.59	26.79	0.42	200.0	1.17	1.17	1.18	1.17	1.17
250.0	6.62	6.62	6.62	6.61	0.01	26.31	26.13	25.43	0.50	250.0	1.24	1.24	1.25	1.24	1.25
300.0	6.77	6.77	6.76	6.76	0.01	23.55	26.29	22.81	0.57	300.0	1.36	1.32	1.33	1.33	1.33

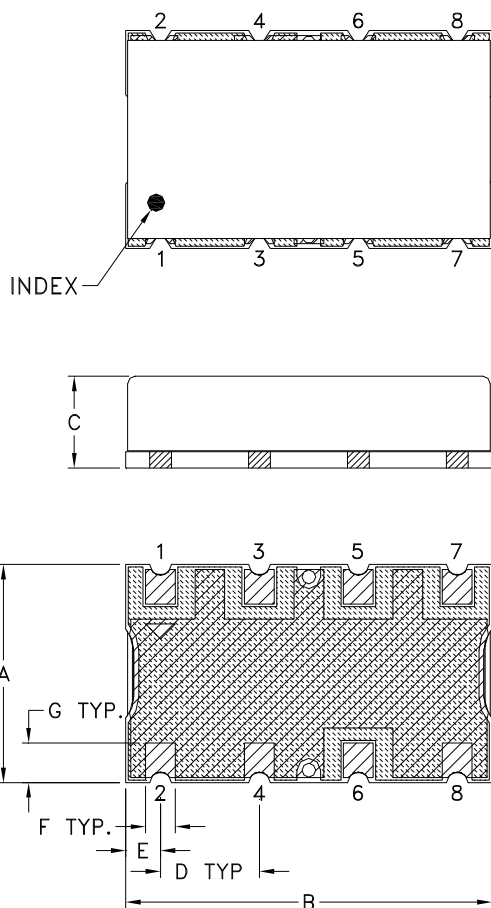
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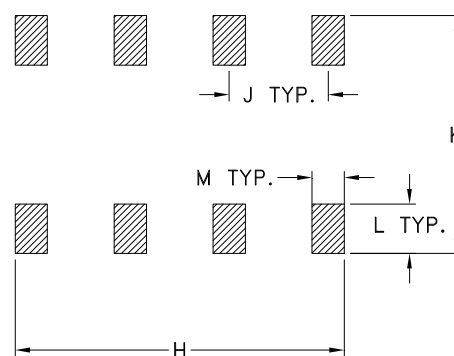
Typical Performance Curves



Outline Dimensions



PCB Land Pattern



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

 METALLIZATION
 SOLDER RESIST

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAMS
HF1485	.44 (11.18)	.74 (18.80)	.19 (4.83)	.200 (5.08)	.07 (1.78)	.060 (1.52)	.080 (2.03)	.665 (16.89)	.200 (5.08)	.480 (12.19)	.100 (2.54)	.065 (1.65)	2.5

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.



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

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REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M82548	NEW RELEASE	11/15/02	MMG	HY
A	M102713	ADDED "...WITH SMOBC"	01/14/06	GF	IL

PACKAGE OUTLINE
 .037 TYP
 .060 TYP
 .066 TRACE WIDTH, 5 PL.
 (SEE NOTE BELOW)
 .075
 .145 TYP
 .040 TYP
 .200
 .530
 .345
 PIN 1
 .185
 .090
 .020 TYP
 47X ϕ .020
 FOR GROUND
 12X .050
 .057 TYP
 .033
 .057 TYP

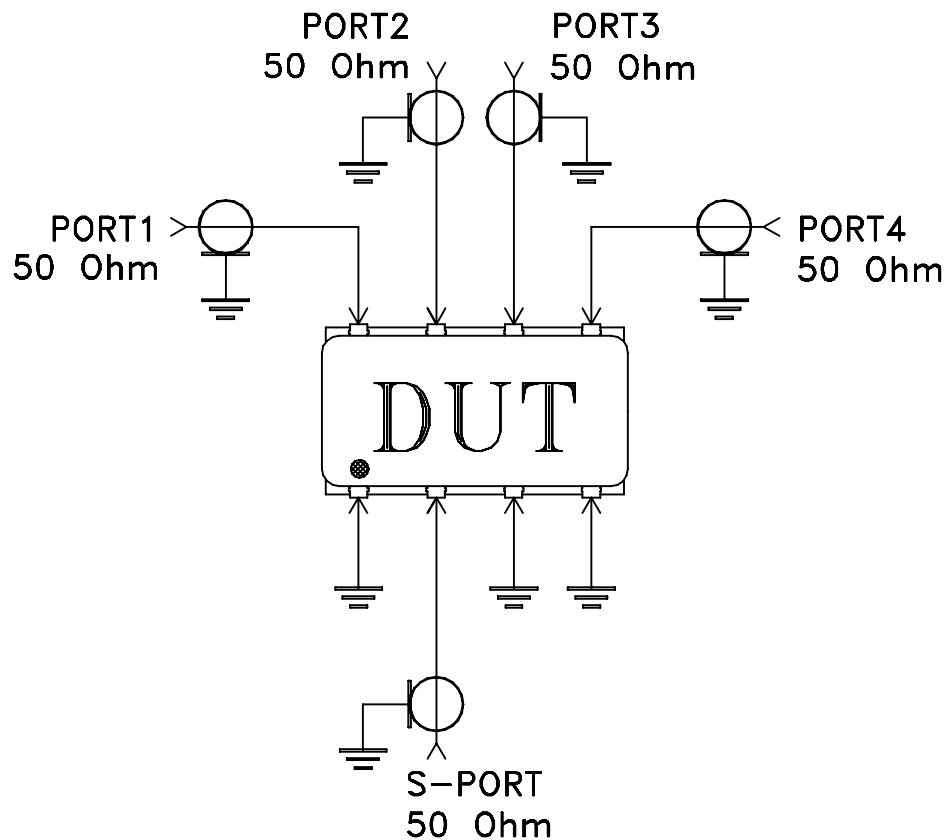
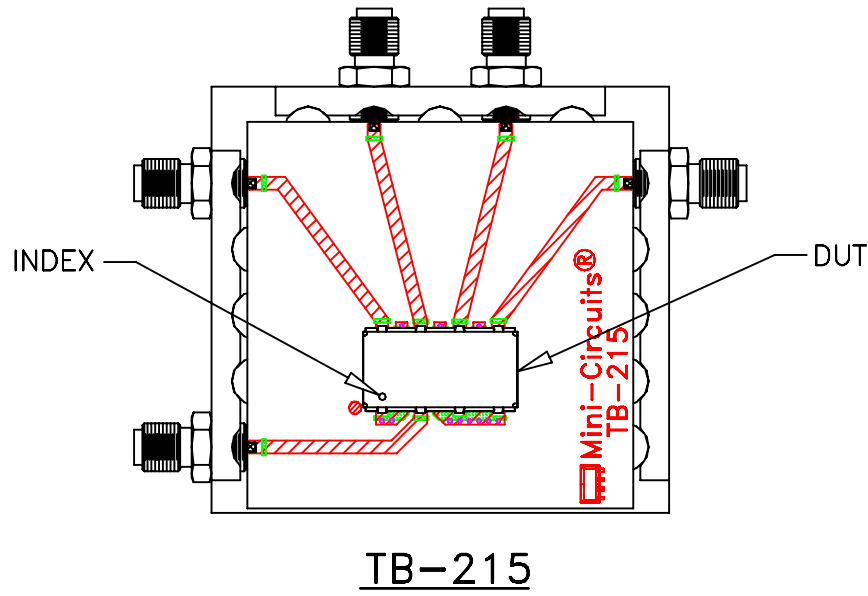
2.BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

SIZE A	CODE IDENT 15542	DRAWING NO: 98-PL-101		REV: A
FILE: 98PL101		SCALE: 5:1	SHEET: 1 OF 1	

Evaluation Board and Circuit



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