

Engineering Development Model

Power Splitter/Combiner

SCP-ED12262/1

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 : YY101

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		0.1		400 MHz
Isolation	0.1 - 1 MHz		26	dB
	1 - 200 MHz		30	dB
	200 - 400 MHz		26	dB
Insertion Loss Above 3.0 dB	0.1 - 1 MHz		0.35	dB
	1 - 200 MHz		0.25	dB
	200 - 400 MHz		0.46	dB
Phase Unbalance	0.1 - 1 MHz		0.173	deg.
	1 - 200 MHz		0.124	deg.
	200 - 400 MHz		0.363	deg.
Amplitude Unbalance	0.1 - 1 MHz		0.006	dB
	1 - 200 MHz		0.005	dB
	200 - 400 MHz		0.015	dB
VSWR	SUM Port		1.16	(:1)
	OUT Ports		1.27	(:1)

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

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

Functional Diagram



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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
0.10	3.48	3.45	0.03	20.08	0.31	0.10	1.44	1.91	1.91
0.13	3.40	3.39	0.02	21.51	0.30	0.13	1.35	1.71	1.72
0.15	3.37	3.36	0.01	22.78	0.26	0.15	1.29	1.59	1.59
0.18	3.35	3.35	0.01	23.89	0.26	0.18	1.24	1.51	1.51
0.20	3.33	3.33	0.00	24.86	0.20	0.20	1.21	1.45	1.45
0.23	3.33	3.34	0.00	25.71	0.15	0.23	1.19	1.40	1.40
0.25	3.33	3.33	0.00	26.46	0.16	0.25	1.17	1.37	1.37
0.28	3.33	3.33	0.00	27.11	0.16	0.28	1.16	1.34	1.34
0.30	3.32	3.32	0.00	27.69	0.14	0.30	1.15	1.32	1.32
0.50	3.31	3.31	0.00	30.75	0.08	0.50	1.10	1.24	1.24
0.75	3.28	3.29	0.00	32.58	0.04	0.75	1.09	1.21	1.21
1.00	3.27	3.28	0.00	33.38	0.01	1.00	1.08	1.19	1.19
5.00	3.17	3.17	0.01	33.09	0.01	5.00	1.09	1.11	1.11
10.00	3.16	3.16	0.01	32.85	0.05	10.00	1.10	1.10	1.10
20.00	3.16	3.16	0.00	32.80	0.00	20.00	1.10	1.09	1.09
40.00	3.19	3.19	0.00	32.48	0.06	40.00	1.10	1.09	1.09
60.00	3.20	3.21	0.00	31.92	0.10	60.00	1.10	1.09	1.09
80.00	3.22	3.23	0.01	31.23	0.13	80.00	1.09	1.08	1.08
100.00	3.23	3.23	0.00	30.52	0.16	100.00	1.09	1.08	1.09
120.00	3.25	3.24	0.01	29.84	0.17	120.00	1.08	1.09	1.09
140.00	3.25	3.25	0.00	29.29	0.18	140.00	1.08	1.09	1.09
160.00	3.27	3.26	0.01	28.77	0.23	160.00	1.07	1.10	1.10
180.00	3.29	3.28	0.01	28.35	0.25	180.00	1.07	1.11	1.11
200.00	3.30	3.29	0.01	28.02	0.26	200.00	1.07	1.13	1.13
220.00	3.31	3.29	0.01	27.79	0.32	220.00	1.07	1.14	1.14
240.00	3.33	3.32	0.01	27.66	0.32	240.00	1.08	1.17	1.16
260.00	3.36	3.34	0.02	27.64	0.36	260.00	1.10	1.19	1.19
280.00	3.38	3.36	0.02	27.65	0.32	280.00	1.11	1.21	1.21
300.00	3.39	3.37	0.01	27.77	0.35	300.00	1.13	1.23	1.23
320.00	3.40	3.39	0.01	27.88	0.42	320.00	1.15	1.26	1.25
340.00	3.43	3.42	0.01	28.00	0.40	340.00	1.18	1.28	1.28
360.00	3.48	3.46	0.02	27.98	0.40	360.00	1.20	1.31	1.31
380.00	3.51	3.49	0.02	27.66	0.41	380.00	1.23	1.34	1.33
400.00	3.52	3.50	0.02	26.95	0.43	400.00	1.26	1.36	1.35
500.00	3.75	3.74	0.01	19.82	0.35	500.00	1.44	1.44	1.43

¹ Total Loss = Insertion Loss + 3dB Splitter Loss

REV. X2

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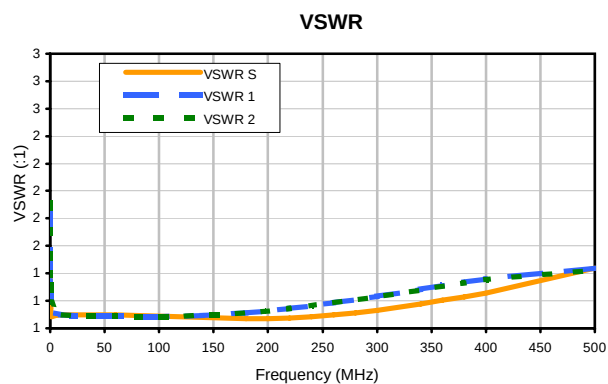
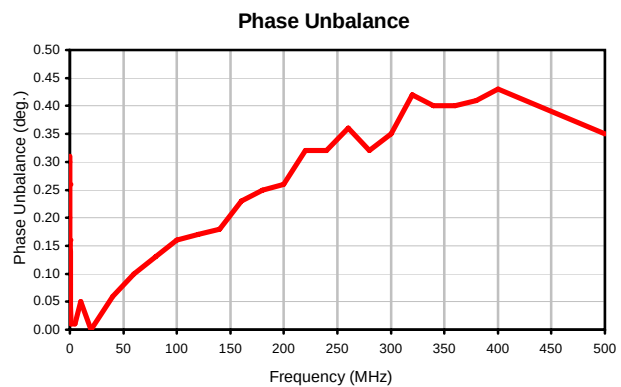
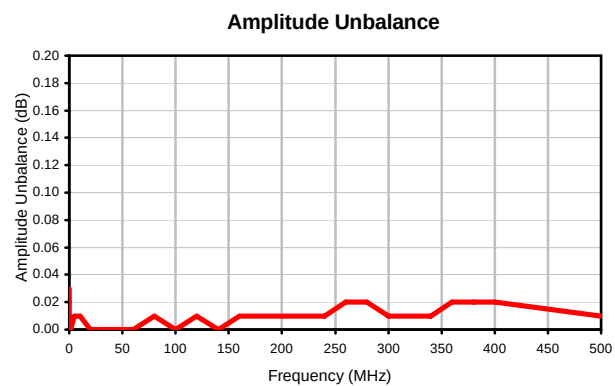
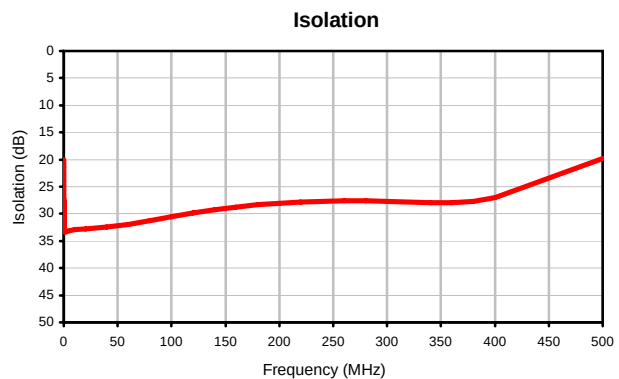
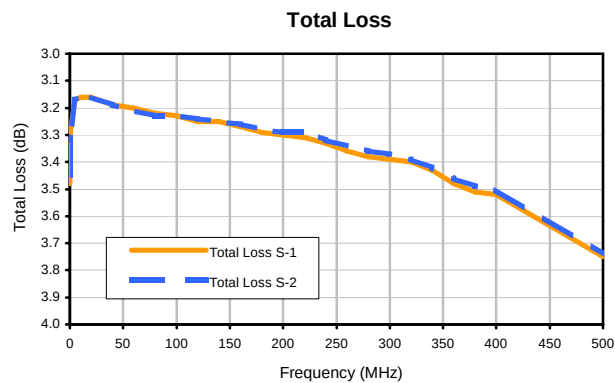
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Typical Performance Curves



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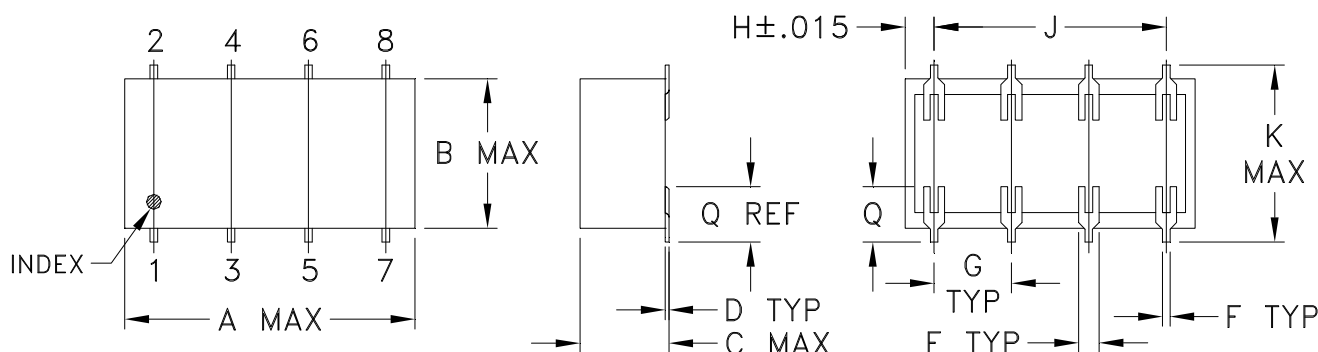


Case Style

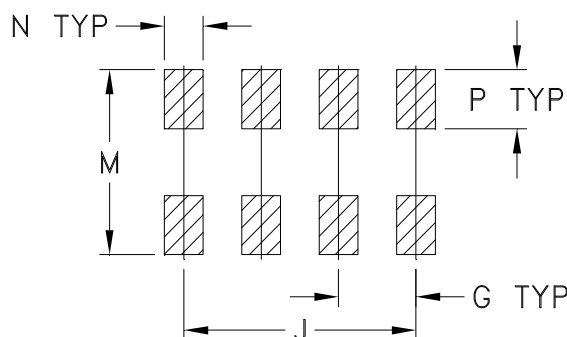
YY

Outline Dimensions

YY101
YY109
YY161



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	Q	WT. GRAM S
YY101*			.20 (5.08)							.450 (11.43)	--	.470 (11.94)				1.6
YY109*	.75 (19.05)	.38 (9.65)	.20 (5.08)	.010 (0.25)	.050 (1.27)	.020 (0.51)	.200 (5.08)	.075 (1.91)	.600 (15.24)	.720 (18.29)	--	.740 (18.80)	.100 (2.54)	.150 (3.81)	.148 (3.76)	1.6
YY161			.28 (7.11)							.450 (11.43)	--	.470 (11.94)				1.6

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

Notes:

- Case material: Plastic.
- Termination finish:
For RoHS Case Styles: Tin plate over Nickel plate.
For RoHS-5 Case Styles: Tin-Lead plate.
- Special Tolerances: Termination thickness $\pm .003$ inch.
- * Denotes: For SCM mixers, long termination version (case YY109) is available upon request, consult factory. To order short termination version (case YY101) add -NL suffix.

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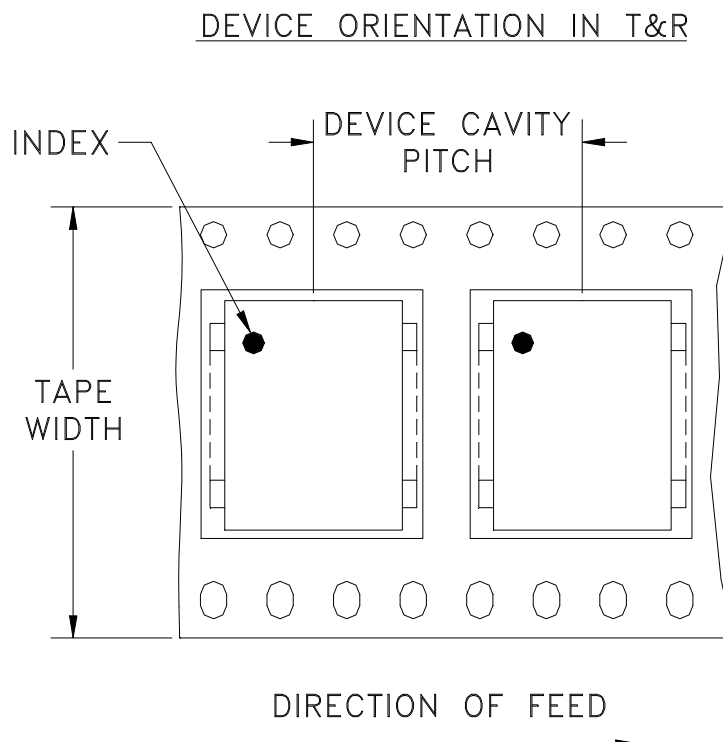
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32	16	13	500

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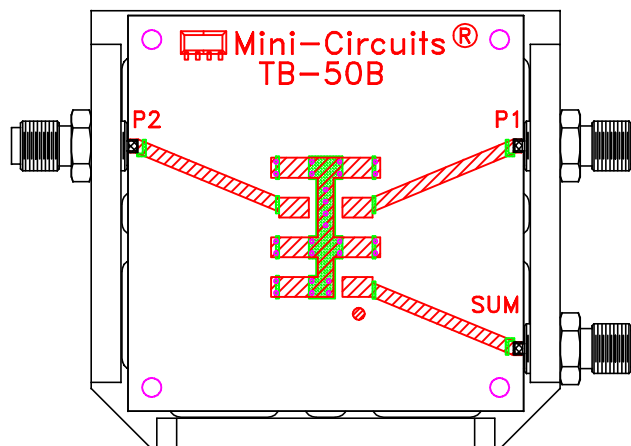
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A	M102713	UPDATED NOTES, ADDED "...WITH SMOBC"	01/16/06	GT	IL

.700 REF
 .020 TYP
 .060 TYP
 .315
 .080 TYP
 .045 TYP
 .025
 PIN 1
 .066 TYP
 TRACE WIDTH
 (SEE NOTE BELOW)
 3X .060
 .060
 26X ϕ .020 PTH
 FOR GROUND
 .025 TYP
 .205
 .040
 .140
 .550 TYP
 PACKAGE OUTLINE

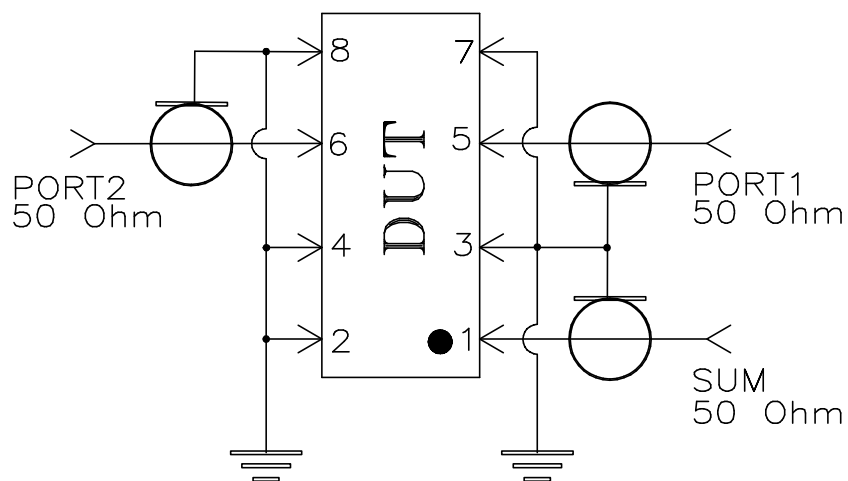
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SHEET: 1 OF 1

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