

Engineering Development Model

Power Splitter/Combiner

BP-ED12593/1

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 : XX211

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		1200		2000 MHz
Isolation	1200 - 2000 MHz		18	dB
Insertion Loss Above 3.0 dB	1200 - 2000 MHz		0.70	dB
Phase Unbalance	1200 - 2000 MHz		0.182	deg.
Amplitude Unbalance	1200 - 2000 MHz		0.065	dB
VSWR	SUM Port		1.50	(:1)
	OUT Ports		1.30	(:1)

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

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

Functional Diagram



2 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	1	2
250.0	3.63	3.63	0.01	4.05	0.07	250.0	1.89	1.89	1.88
300.0	3.63	3.64	0.01	4.19	0.12	300.0	1.87	1.88	1.87
350.0	3.62	3.64	0.01	4.34	0.07	350.0	1.85	1.86	1.87
400.0	3.62	3.63	0.01	4.52	0.05	400.0	1.83	1.85	1.85
450.0	3.62	3.61	0.01	4.73	0.05	450.0	1.80	1.84	1.84
500.0	3.60	3.61	0.01	4.96	0.03	500.0	1.77	1.83	1.83
550.0	3.60	3.59	0.01	5.22	0.11	550.0	1.75	1.82	1.81
600.0	3.58	3.58	0.01	5.51	0.13	600.0	1.71	1.80	1.80
650.0	3.56	3.57	0.01	5.83	0.10	650.0	1.68	1.77	1.78
700.0	3.55	3.55	0.01	6.19	0.03	700.0	1.65	1.75	1.76
750.0	3.53	3.53	0.01	6.60	0.03	750.0	1.61	1.73	1.73
800.0	3.52	3.51	0.01	7.04	0.05	800.0	1.57	1.70	1.70
850.0	3.50	3.50	0.01	7.54	0.04	850.0	1.53	1.67	1.67
900.0	3.48	3.48	0.01	8.10	0.00	900.0	1.49	1.63	1.64
950.0	3.47	3.46	0.01	8.72	0.04	950.0	1.45	1.59	1.60
1000.0	3.46	3.44	0.02	9.42	0.06	1000.0	1.41	1.55	1.56
1050.0	3.44	3.42	0.02	10.20	0.07	1050.0	1.37	1.51	1.51
1100.0	3.43	3.40	0.03	11.09	0.05	1100.0	1.32	1.47	1.47
1150.0	3.42	3.39	0.03	12.10	0.06	1150.0	1.28	1.42	1.42
1200.0	3.41	3.37	0.03	13.26	0.06	1200.0	1.24	1.37	1.37
1250.0	3.40	3.36	0.04	14.63	0.06	1250.0	1.19	1.32	1.32
1300.0	3.40	3.36	0.04	16.25	0.08	1300.0	1.14	1.27	1.27
1460.0	3.41	3.36	0.06	25.23	0.11	1460.0	1.02	1.12	1.13
1500.0	3.42	3.37	0.06	30.03	0.13	1500.0	1.05	1.09	1.11
1580.0	3.46	3.39	0.07	32.48	0.16	1580.0	1.13	1.09	1.09
1600.0	3.47	3.40	0.07	29.39	0.16	1600.0	1.15	1.10	1.10
1660.0	3.51	3.44	0.07	23.50	0.19	1660.0	1.22	1.15	1.14
1700.0	3.54	3.46	0.08	21.05	0.23	1700.0	1.28	1.19	1.18
1750.0	3.59	3.51	0.08	18.74	0.26	1750.0	1.35	1.24	1.23
1800.0	3.64	3.56	0.08	16.99	0.30	1800.0	1.43	1.30	1.29
1850.0	3.71	3.62	0.09	15.57	0.35	1850.0	1.51	1.36	1.35
1900.0	3.79	3.69	0.09	14.38	0.41	1900.0	1.61	1.42	1.41
1950.0	3.87	3.77	0.10	13.38	0.46	1950.0	1.71	1.49	1.47
2000.0	3.97	3.86	0.11	12.50	0.54	2000.0	1.82	1.56	1.54
2050.0	4.08	3.97	0.11	11.72	0.62	2050.0	1.95	1.64	1.61
2100.0	4.20	4.08	0.12	11.03	0.69	2100.0	2.08	1.71	1.68
2150.0	4.33	4.20	0.13	10.41	0.78	2150.0	2.22	1.78	1.76
2200.0	4.48	4.34	0.13	9.85	0.90	2200.0	2.38	1.86	1.83
2250.0	4.63	4.49	0.14	9.34	0.96	2250.0	2.56	1.94	1.91
2300.0	4.80	4.66	0.15	8.87	1.07	2300.0	2.74	2.02	1.98
2350.0	4.99	4.83	0.15	8.43	1.20	2350.0	2.95	2.10	2.06
2400.0	5.19	5.02	0.17	8.03	1.33	2400.0	3.18	2.18	2.13
2450.0	5.39	5.23	0.17	7.66	1.41	2450.0	3.41	2.25	2.21
2500.0	5.63	5.44	0.19	7.31	1.55	2500.0	3.68	2.33	2.28
2550.0	5.86	5.67	0.19	6.99	1.67	2550.0	3.97	2.41	2.36
2600.0	6.12	5.92	0.20	6.69	1.82	2600.0	4.28	2.49	2.43
2650.0	6.38	6.16	0.22	6.41	1.96	2650.0	4.61	2.56	2.50
2700.0	6.66	6.44	0.23	6.16	2.11	2700.0	4.98	2.64	2.58
2750.0	6.95	6.71	0.24	5.92	2.26	2750.0	5.36	2.71	2.64
2800.0	7.26	7.00	0.25	5.70	2.37	2800.0	5.78	2.78	2.72
2850.0	7.57	7.30	0.27	5.50	2.64	2850.0	6.22	2.85	2.78
2900.0	7.90	7.61	0.29	5.31	2.79	2900.0	6.69	2.92	2.85
2950.0	8.23	7.92	0.31	5.14	2.94	2950.0	7.18	2.99	2.91
3000.0	8.58	8.25	0.33	4.98	3.09	3000.0	7.71	3.05	2.98

¹ Total Loss = Insertion Loss + 3dB Splitter Loss

REV. X2

BP-ED12593/1

100707

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IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED • RoHS compliant

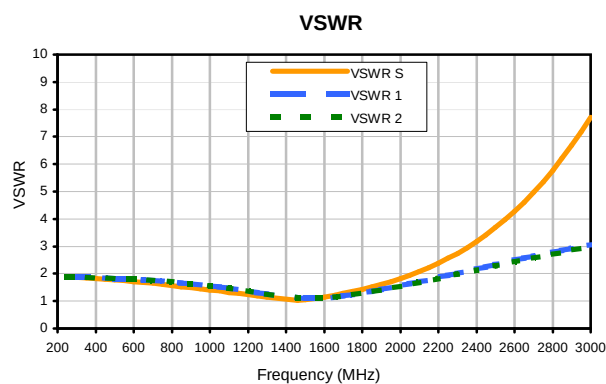
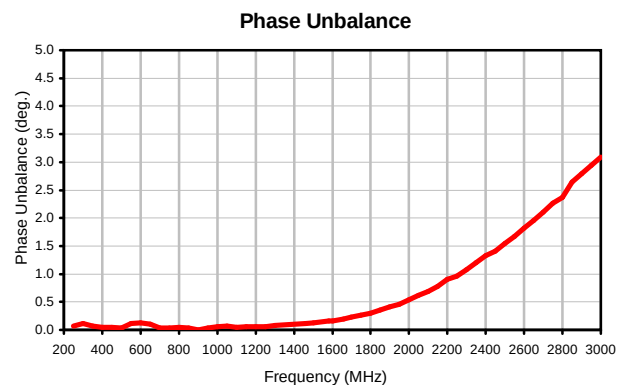
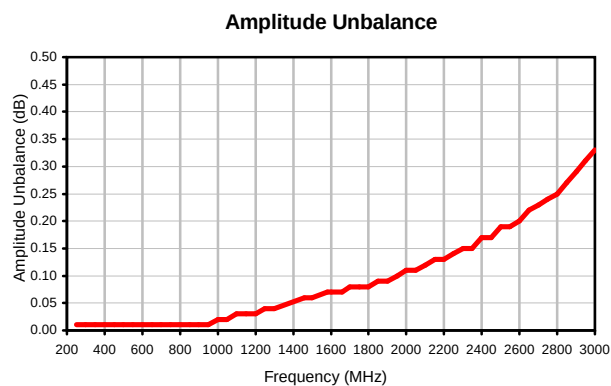
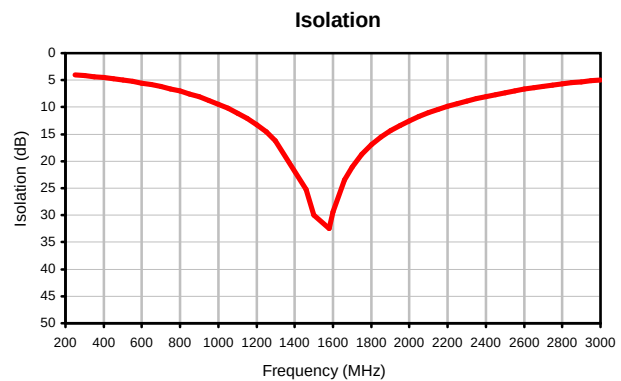
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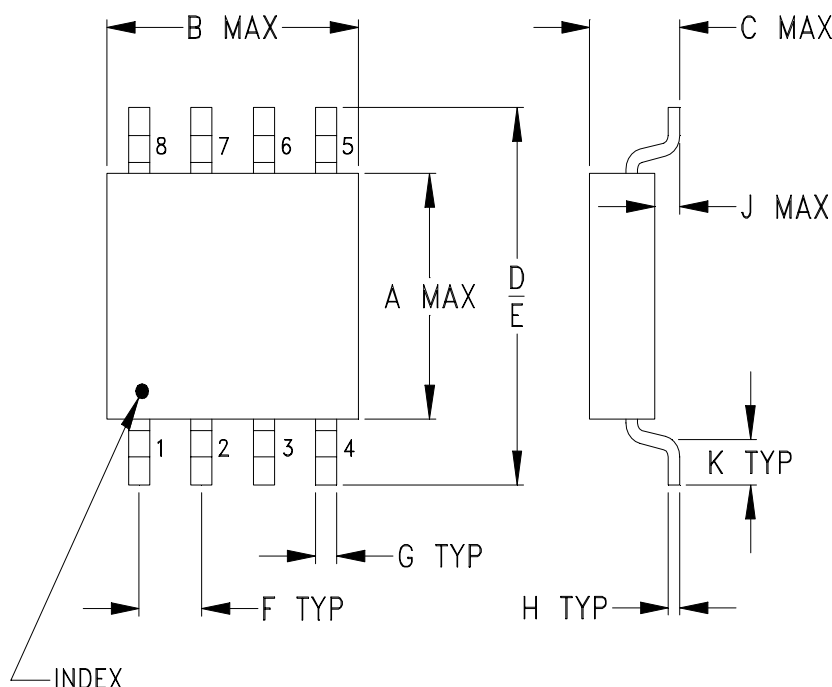
The Design Engineers Search Engine finds the model you need, instantly • For detailed performance specs & shopping online see



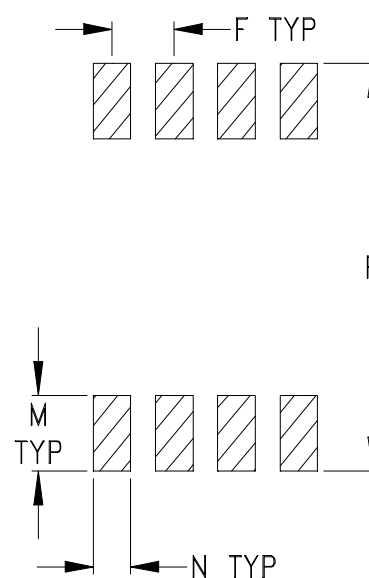
Typical Performance Curves



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
XX211	.163 (4.14)	.210 (5.33)	.077 (1.96)	.250 (6.35)	.220 (5.59)	.050 (1.27)	.017 (0.43)	.009 (0.23)	.025 (0.64)	.030 (0.76)	-- --	.050 (1.27)	.030 (0.76)	.270 (6.86)

CASE #	Q	R	S	WT. GRAM
XX211	-- --	-- --	-- --	.10

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .03$; 3 Pl. $\pm .015$

Notes:

- Case material: Plastic.
 - Termination finish:
For RoHS Case Styles: Tin-Silver alloy plate over Nickel barrier. All models, (+) suffix. ☉
For RoHS-5 Case Styles: Tin-Lead plate. All models, No (+) suffix.
 - Special Tolerances: Termination width $\pm .005$ inch, termination thickness $\pm .003$ inch.
- ☉ Model BP4C+ will be supplied with either Tin finish or Tin-Silver-Nickel finish until Tin finish inventory is depleted.



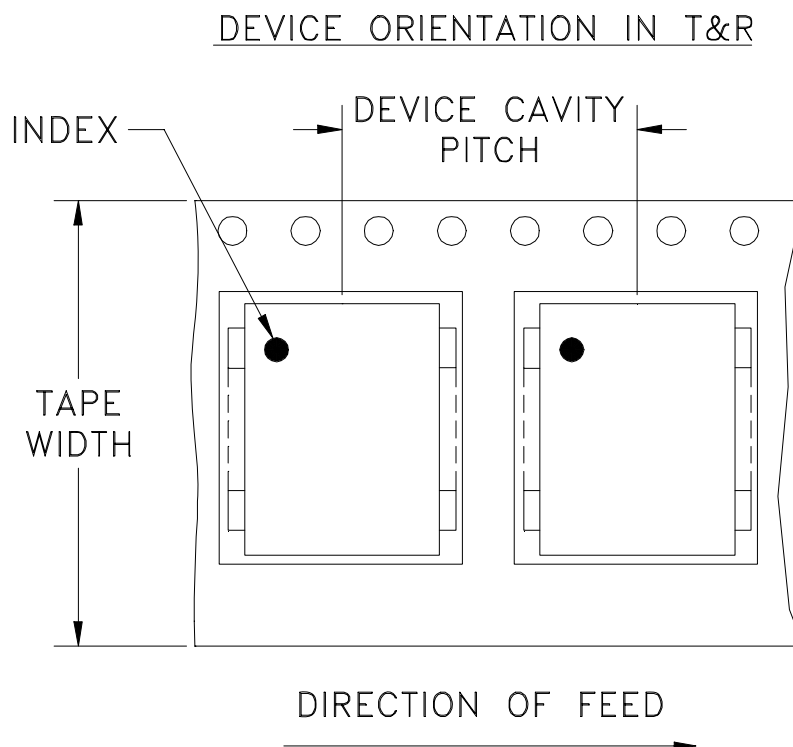
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Tape & Reel Packaging TR-F16



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
12	8	7	Small quantity standards (see note)	20
				50
				100
				200
				500
			Standard	1000*
		13	Standard	2000**

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

* BP models only

** MSW and MSWA models

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.

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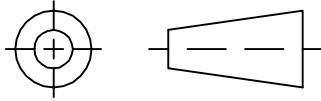
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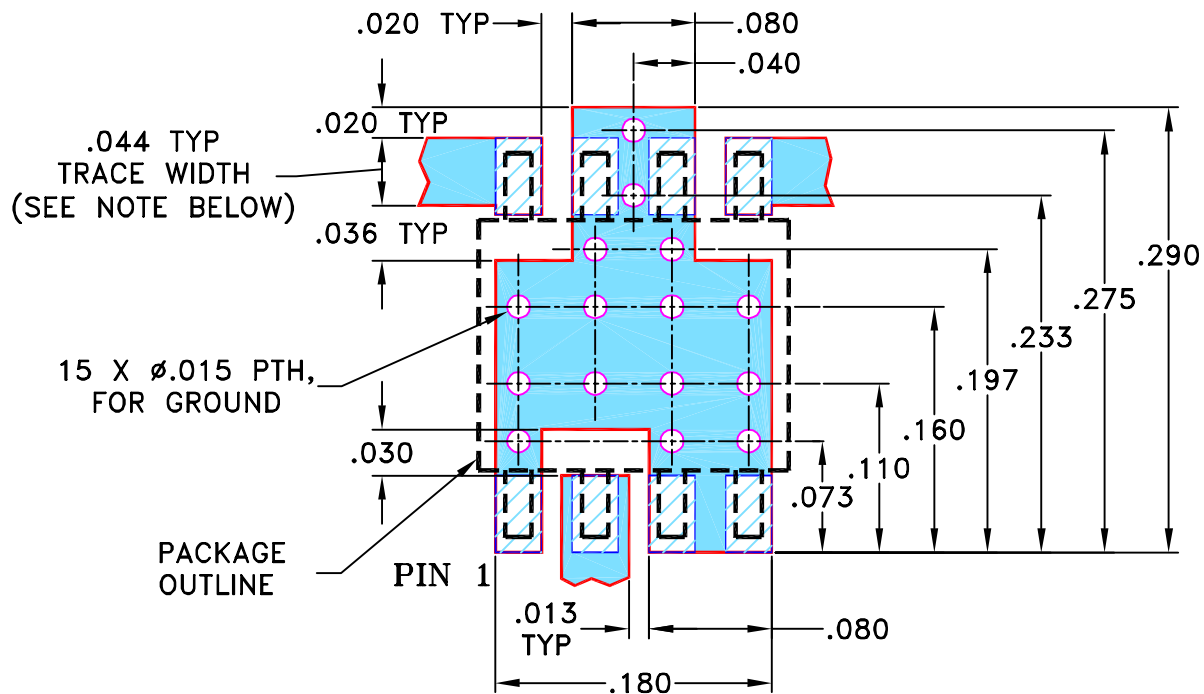
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M82272	NEW RELEASE	08/06/02	GF	DJ
A	M102713	UPDATED NOTES, ADDED "...WITH SMOBC"	01/16/06	GT	IL

SUGGESTED MOUNTING CONFIGURATION FOR XX211 CASE STYLE, "jm" PIN CONNECTION



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $0.020'' \pm 0.0015''$. 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

DRAWN

GF

07/17/02

TOLERANCES ON:

CHECKED

HY

08/06/02

2 PL DECIMALS $\pm$

APPROVED

DJ

08/06/02

3 PL DECIMALS $\pm$.005ANGLES $\pm$ FRACTIONS $\pm$
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ASHEETA1.DWG REV:A DATE:01/12/95



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Brooklyn NY 11235

PL, jm, XX211, BP2, TB-37

SIZE

A

CODE IDENT

15542

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98-PL-053

REV:

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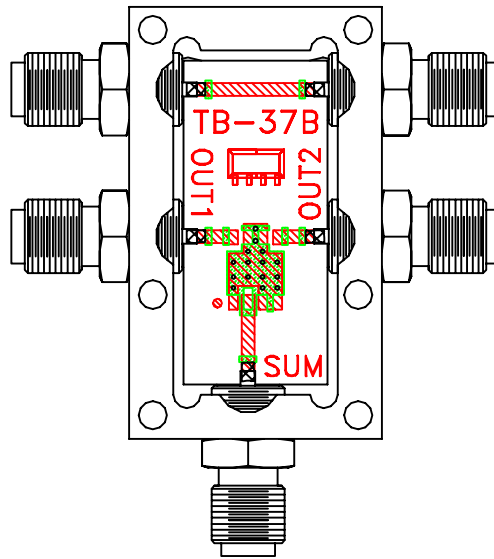
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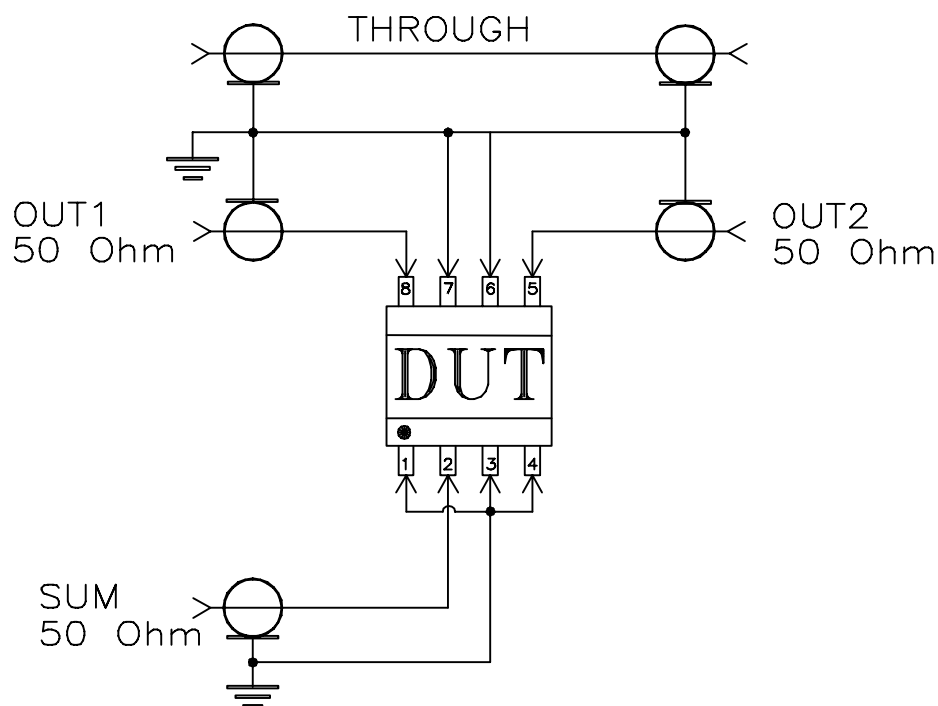
SHEET:

1 OF 1

Evaluation Board and Circuit



TB-37



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.020 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	-65° to 150° C Ambient Environment	Individual Model Data Sheet
Autoclave	15 psig, 100% RH, 121°C, 96 hours	JESD22-A102-C, Condition C
Temperature Cycling	-65° to 150°C, 100 cycles	JESD22-A104
Temperature Humidity	85°C/ 85% RH, 168 hours	JESD22-113
Solder Reflow Heat	Sn-Pb Eutetic Process: 240°C peak Pb-Free Process: 260°C peak	J-STD-020, Table 4-1, 4-2 and 5-2; Figure 5-1
Moisture Sensitivity: Level 1	Bake at 125°C for 24 hours Soak at 85°C/85% RH for 168 hours, Reflow 3 cycles at 240°C peak (Non-RoHS) or 260°C (RoHS)	J-STD-020
Solderability	10X magnification, 95% coverage	JESD22-B102, Method 1: Dip and Look Test
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
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