

Engineering Development Model

Power Splitter/Combiner

SCP-ED13281A/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 :YY101

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency		2		1000	MHz
Isolation	2-20 MHz		24		dB
	20-1000 MHz		20		dB
	1000-2000 MHz		21		dB
Insertion Loss Above 6.0 dB	2-20 MHz		0.50		dB
	20-1000 MHz		0.70		dB
	1000-2000 MHz		1.10		dB
Phase Unbalance	2-20 MHz		0.10		deg.
	20-1000 MHz		0.80		deg.
	1000-2000 MHz		2.00		deg.
Amplitude Unbalance	2-20 MHz		0.05		dB
	20-1000 MHz		0.10		dB
	1000-2000 MHz		0.20		dB
VSWR	SUM Port		1.14		(:1)
	OUT Ports		1.12		(:1)

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

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

Functional Diagram



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ISO 9001 ISO 14001 AS 9100 CERTIFIED

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IF/RF MICROWAVE COMPONENTS

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Typical Data Performance

FREQ. (MHz)	TOTAL LOSS ¹				AMP. UNBAL.	ISOLATION			PHASE UNBAL.	FREQ. (MHz)	VSWR				
(MHz)	(dB)				(dB)	(dB)			(Deg.)	(MHz)	(:1)				
	S-1	S-2	S-3	S-4		1-2	2-3	3-4			S	1	2	3	4
2.0	6.42	6.42	6.42	6.41	0.01	25.60	35.97	24.70	0.06	2.0	1.12	1.32	1.32	1.33	1.34
2.5	6.40	6.39	6.40	6.39	0.01	26.97	36.85	25.99	0.06	2.5	1.11	1.28	1.28	1.29	1.29
3.0	6.39	6.38	6.39	6.38	0.01	28.17	37.70	27.12	0.06	3.0	1.10	1.24	1.24	1.25	1.26
3.5	6.38	6.38	6.38	6.37	0.01	29.27	38.44	28.15	0.06	3.5	1.09	1.22	1.22	1.23	1.23
4.0	6.37	6.37	6.38	6.36	0.01	30.24	39.08	29.08	0.07	4.0	1.09	1.20	1.20	1.20	1.21
5.0	6.37	6.36	6.37	6.36	0.01	31.96	40.36	30.71	0.07	5.0	1.08	1.17	1.17	1.17	1.18
6.0	6.36	6.36	6.37	6.36	0.01	33.52	41.37	32.22	0.05	6.0	1.08	1.15	1.15	1.15	1.15
10.0	6.36	6.36	6.37	6.35	0.01	38.25	43.52	36.96	0.04	10.0	1.08	1.11	1.11	1.11	1.11
12.0	6.36	6.36	6.37	6.36	0.01	40.07	43.69	38.86	0.04	12.0	1.07	1.10	1.10	1.10	1.10
14.0	6.36	6.36	6.37	6.36	0.01	41.72	44.04	40.60	0.08	14.0	1.07	1.10	1.10	1.10	1.10
16.0	6.37	6.36	6.37	6.36	0.01	42.87	43.95	41.99	0.08	16.0	1.07	1.10	1.09	1.09	1.09
20.0	6.37	6.37	6.38	6.37	0.01	44.37	43.65	44.34	0.08	20.0	1.07	1.09	1.09	1.09	1.09
25.0	6.38	6.38	6.39	6.37	0.01	44.34	43.25	44.84	0.10	25.0	1.07	1.09	1.09	1.09	1.09
50.0	6.41	6.41	6.42	6.40	0.01	38.83	40.45	39.06	0.18	50.0	1.08	1.09	1.09	1.09	1.09
100.0	6.46	6.45	6.46	6.44	0.02	32.89	36.85	32.92	0.38	100.0	1.09	1.09	1.09	1.09	1.09
180.0	6.52	6.51	6.52	6.50	0.03	28.13	33.37	28.14	0.66	180.0	1.12	1.09	1.08	1.08	1.08
300.0	6.61	6.62	6.63	6.59	0.04	24.33	30.30	24.15	1.00	300.0	1.17	1.10	1.06	1.08	1.06
380.0	6.68	6.70	6.71	6.65	0.06	22.70	28.94	22.40	1.24	380.0	1.20	1.10	1.04	1.07	1.05
420.0	6.71	6.74	6.75	6.68	0.07	22.09	28.46	21.74	1.35	420.0	1.21	1.09	1.03	1.06	1.04
500.0	6.79	6.84	6.84	6.75	0.09	21.14	27.76	20.67	1.56	500.0	1.23	1.09	1.02	1.05	1.04
550.0	6.88	6.95	6.94	6.82	0.12	20.61	27.32	20.12	1.66	550.0	1.25	1.08	1.03	1.04	1.04
600.0	6.88	6.96	6.94	6.82	0.14	20.20	26.82	19.74	1.81	600.0	1.26	1.07	1.04	1.03	1.05
650.0	6.90	6.99	6.97	6.84	0.15	20.01	26.72	19.59	1.94	650.0	1.26	1.06	1.05	1.03	1.06
750.0	6.94	7.09	7.06	6.89	0.21	20.00	26.94	19.71	2.07	750.0	1.25	1.03	1.08	1.04	1.08
800.0	6.97	7.12	7.10	6.90	0.22	20.18	27.22	19.99	2.16	800.0	1.23	1.01	1.10	1.06	1.09
1000.0	7.07	7.31	7.31	7.03	0.28	22.01	32.16	22.47	2.03	1000.0	1.07	1.11	1.17	1.18	1.15

¹Total Loss = Insertion Loss + 6dB Splitter Loss



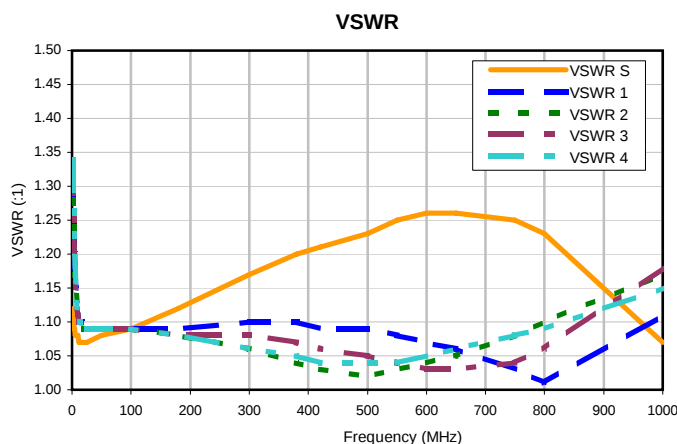
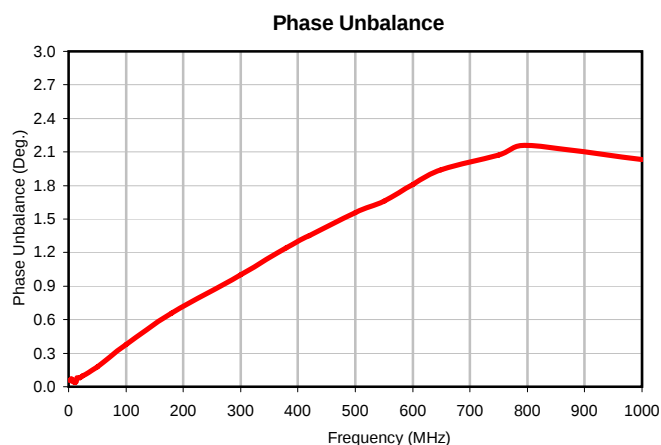
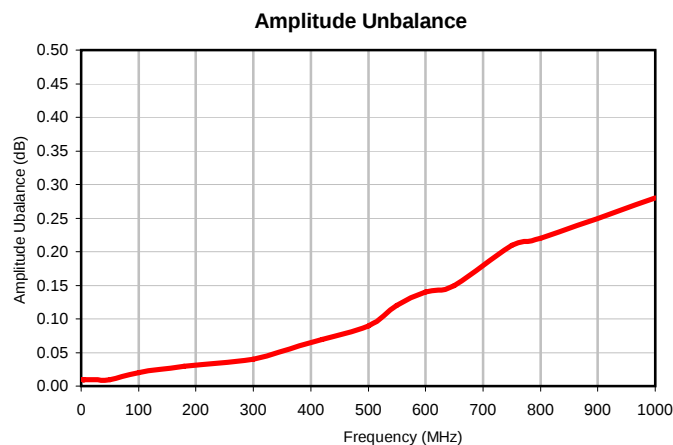
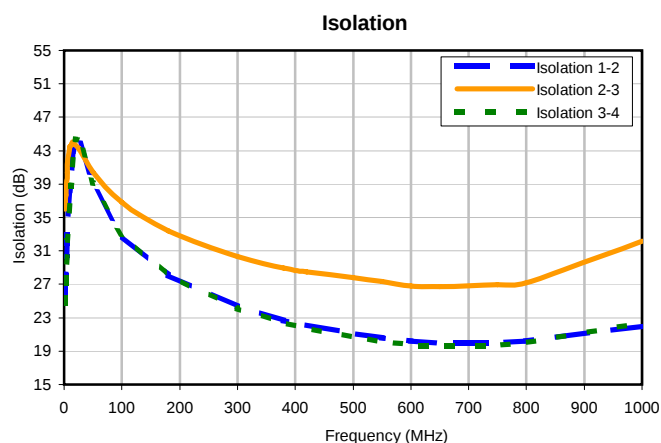
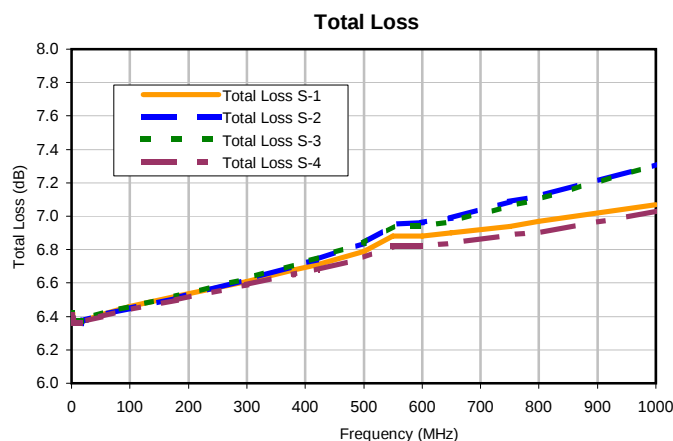
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Typical Performance Curves

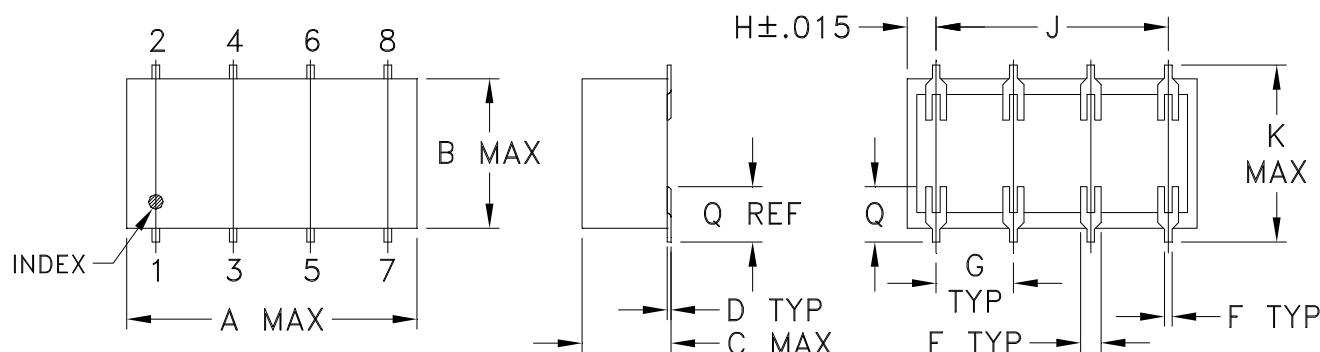


Case Style

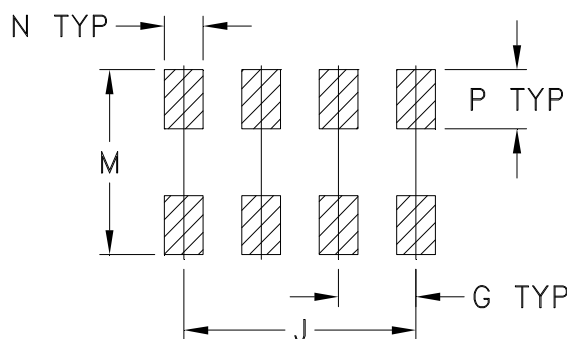
YY

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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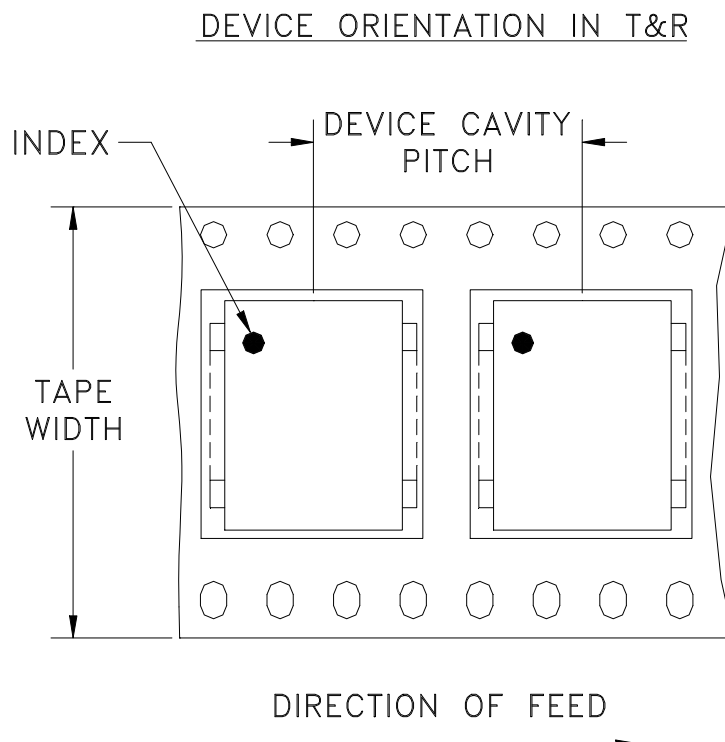
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Tape & Reel Packaging TR-F5



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

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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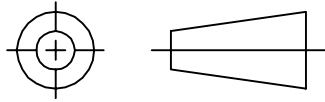
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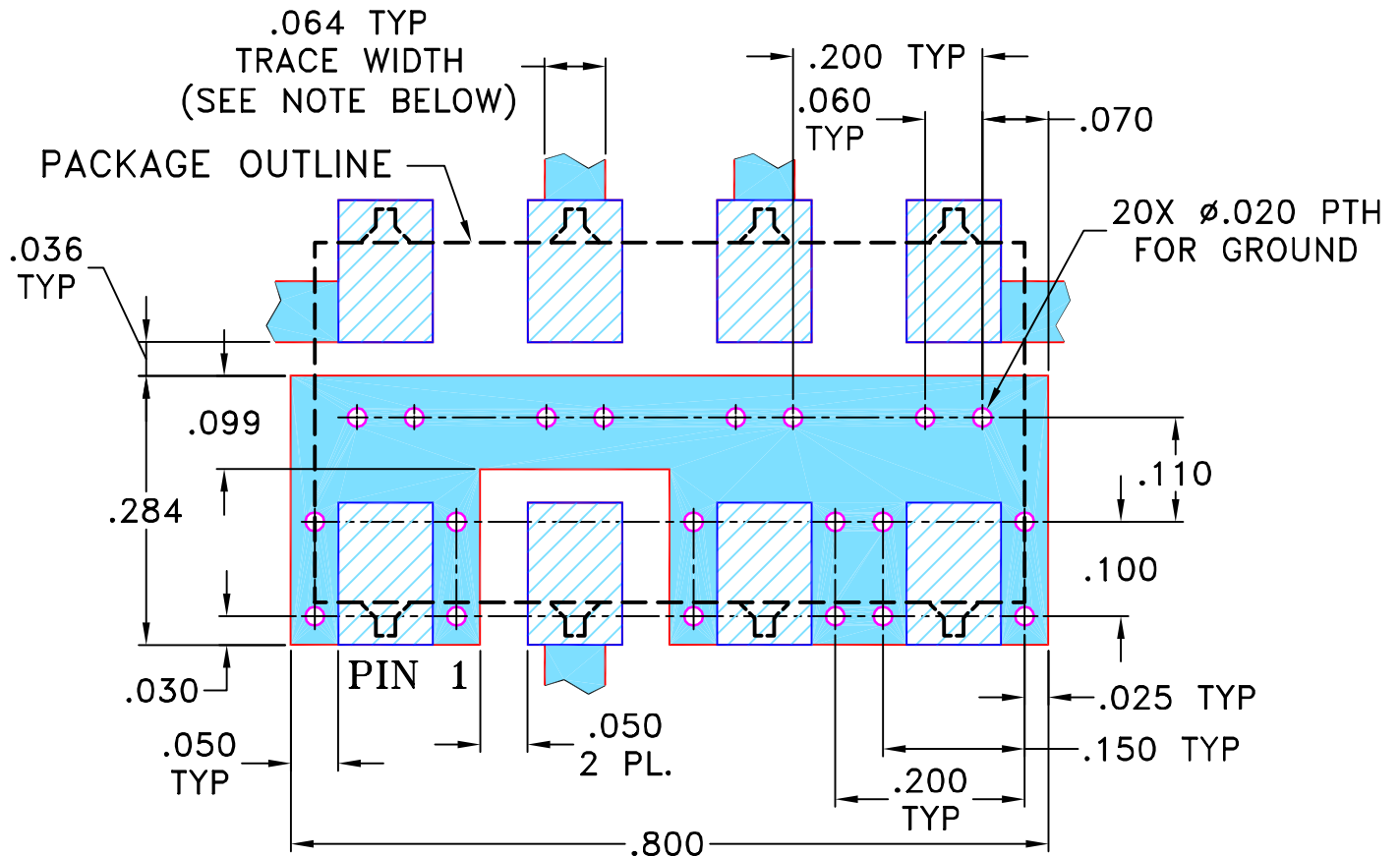
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M82272	NEW RELEASE	08/05/02	MMG	DJ
A	M102713	UPDATED NOTES	01/14/06	GF	IL

SUGGESTED MOUNTING CONFIGURATION
FOR YY101 CASE STYLE, "bv" PIN CONNECTION



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $0.030" \pm 0.002"$; 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

MMG

07/19/02

TOLERANCES ON:
2 PL DECIMALS $\pm$
3 PL DECIMALS $\pm$.005

CHECKED

HY

08/01/02

APPROVED

DJ

08/05/02

ANGLES $\pm$
FRACTIONS $\pm$

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PL, bv, YY101, SCP-4, TB-36

SIZE
A

CODE IDENT
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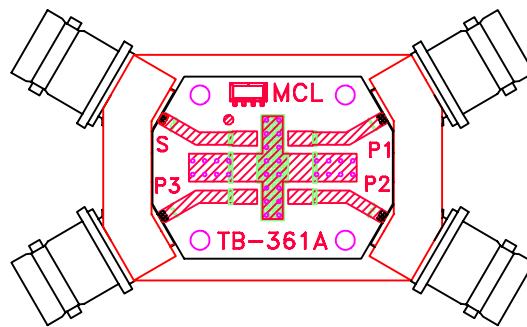
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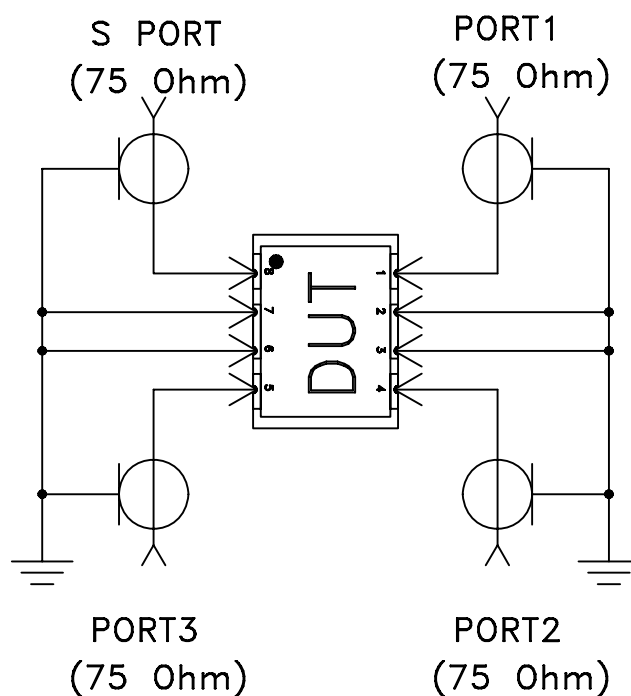
SCALE: 5:1

SHEET: 1 OF 1

Evaluation Board and Circuit



TB-361



Schematic Diagram

Notes:

1. 75 Ohm BNC-type Female connectors.
2. PCB Material: Rogers R04350 or its equivalent, Dielectric Constant=3.5, Thickness=.060"

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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