Engineering Development Model

Power Splitter/Combiner ADPQ-ED10603/1

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.

Please click "Back", and then click "Contact Us" for Applications support.

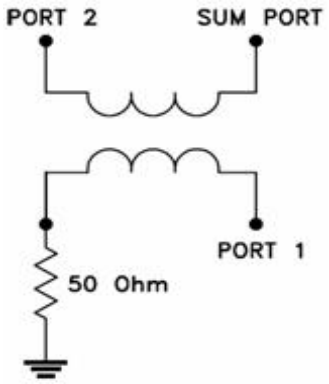
CASE STYLE : 99-01-775

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		70		170	MHz
Isolation	**70 - 170 MHz**		22		dB
Insertion Loss Average of Coupled Outputs above 3.0 dB	**70 - 170 MHz**		0.25		dB
Phase Unbalance	**70 - 170 MHz**		0.417		deg.
Amplitude Unbalance	**70 - 170 MHz**		0.359		dB
VSWR	**SUM Port**		1.20		(:1)
	OUT Ports		1.20		(:1)

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

PIN CONNECTIONS	
SUM PORT	1
PORT 1	6
PORT 2	4
GND EXT	2, 5
50Ω TERMINATION	3

Functional Diagram



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Typical Performance Data

FREQ. (MHz)	TOTAL LOSS[1] (dB) S-1	S-2	AVG.	AMP. UNBAL. (dB)	ISOLATION (dB) 1-2	PHASE UNBAL. (deg.)
70.0	4.16	2.34	3.25	1.82	21.48	89.15
80.0	3.68	2.71	3.20	0.97	21.50	89.20
90.0	3.33	3.02	3.18	0.31	21.65	89.31
91.0	3.30	3.05	3.18	0.25	21.66	89.31
92.0	3.27	3.08	3.18	0.19	21.69	89.34
93.0	3.25	3.11	3.18	0.14	21.70	89.35
94.0	3.22	3.14	3.18	0.08	21.73	89.34
95.0	3.19	3.16	3.18	0.03	21.76	89.36
96.0	3.17	3.19	3.18	0.02	21.78	89.38
97.0	3.15	3.21	3.18	0.07	21.80	89.40
98.0	3.13	3.24	3.19	0.11	21.83	89.43
99.0	3.10	3.26	3.18	0.16	21.86	89.44
100.0	3.08	3.28	3.18	0.20	21.89	89.44
110.0	2.92	3.48	3.20	0.55	22.18	89.64
120.0	2.85	3.61	3.23	0.76	22.55	89.90
130.0	2.83	3.65	3.24	0.82	22.92	90.18
140.0	2.90	3.62	3.26	0.72	23.18	90.60
150.0	3.07	3.50	3.29	0.43	23.11	91.16
151.0	3.09	3.48	3.29	0.39	23.07	91.20
152.0	3.11	3.46	3.29	0.35	23.02	91.29
153.0	3.13	3.44	3.29	0.31	22.97	91.36
154.0	3.16	3.42	3.29	0.26	22.90	91.44
155.0	3.19	3.40	3.30	0.21	22.83	91.51
156.0	3.22	3.38	3.30	0.15	22.74	91.61
157.0	3.25	3.36	3.31	0.10	22.64	91.71
158.0	3.29	3.33	3.31	0.04	22.54	91.79
159.0	3.32	3.31	3.32	0.01	22.42	91.89
160.0	3.36	3.28	3.32	0.08	22.30	92.00
170.0	3.86	2.97	3.42	0.89	20.40	93.37

FREQ. (MHz)	VSWR (:1) S	1	2
70.0	1.21	1.21	1.21
80.0	1.21	1.21	1.21
90.0	1.20	1.20	1.21
91.0	1.20	1.20	1.21
92.0	1.20	1.20	1.21
93.0	1.20	1.20	1.21
94.0	1.20	1.20	1.21
95.0	1.20	1.20	1.21
96.0	1.20	1.20	1.21
97.0	1.20	1.20	1.21
98.0	1.20	1.20	1.21
99.0	1.20	1.20	1.21
100.0	1.20	1.20	1.21
110.0	1.19	1.19	1.20
120.0	1.18	1.19	1.20
130.0	1.18	1.19	1.20
140.0	1.17	1.18	1.20
150.0	1.17	1.18	1.21
151.0	1.17	1.18	1.21
152.0	1.17	1.18	1.21
153.0	1.17	1.18	1.21
154.0	1.17	1.18	1.21
155.0	1.17	1.18	1.21
156.0	1.17	1.18	1.21
157.0	1.17	1.18	1.21
158.0	1.17	1.18	1.21
159.0	1.17	1.18	1.21
160.0	1.17	1.18	1.22
170.0	1.18	1.19	1.24

[1] Total Loss = Insertion Loss + 3dB Splitter Loss

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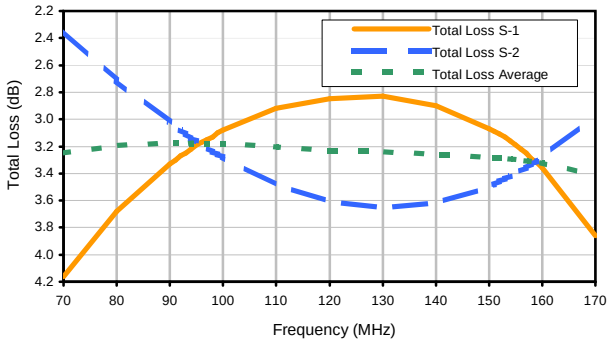
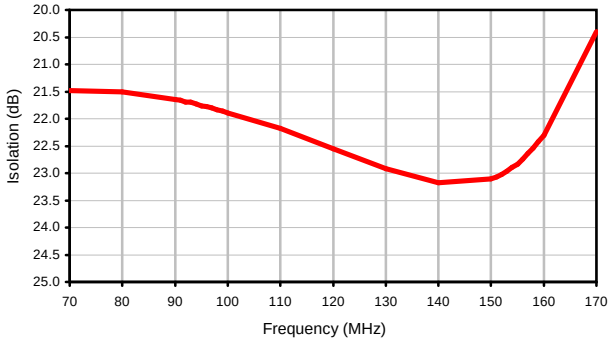
Typical Performance Curves

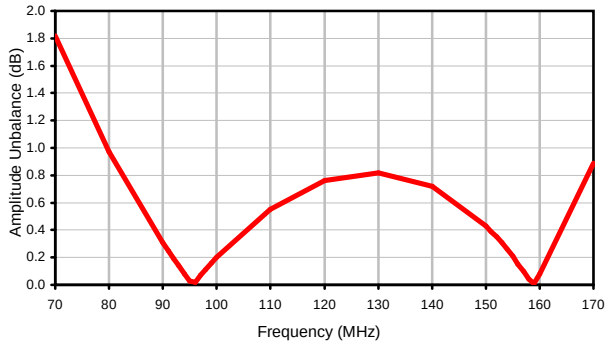
Total Loss



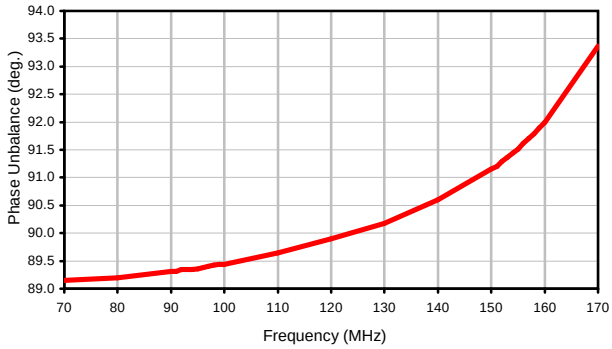
Isolation



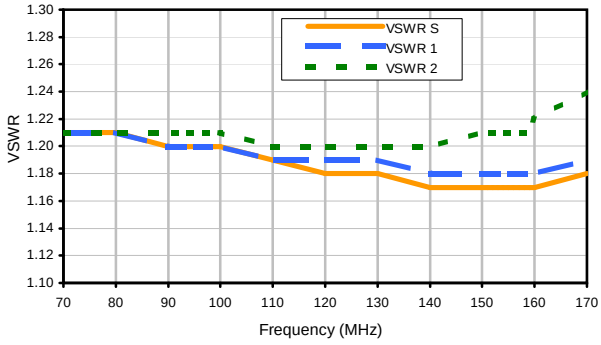
Amplitude Unbalance



Phase Unbalance



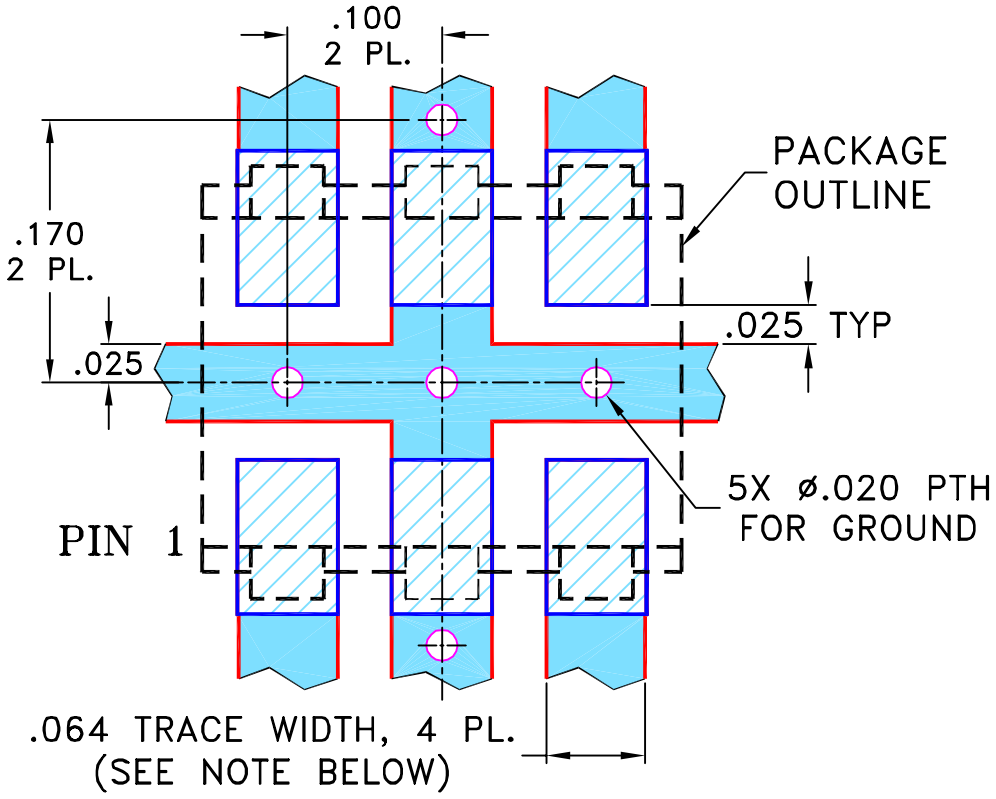
VSWR



THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M82476	NEW RELEASE	11/26/02	MMG	HY
A	M102713	ADDED "ay", "ls" PIN CONNECTIONS,	01/17/06	MMG	IL
		CD636/637 CASE STYLES & "...WITH SMOBC"			

SUGGESTED MOUNTING CONFIGURATION FOR BH292, CD636/CD637 CASE STYLES, "ay", "jg", "ls" PIN CONNECTIONS



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .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	10/30/02
TOLERANCES ON:	CHECKED	AV	11/26/02
2 PL DECIMALS ±	APPROVED	HY	11/26/02
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

ASHEETA1.DWG REV:A DATE:01/12/95

Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

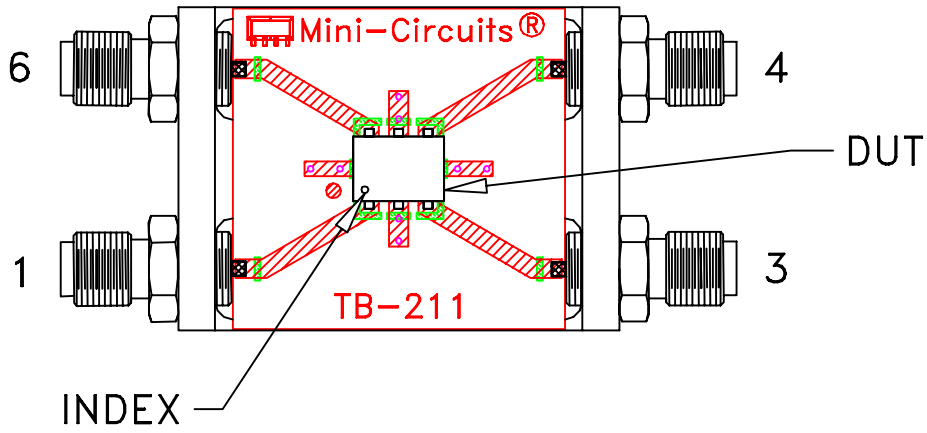
PL, ay/jg/lb, BH292, CD636/637, ADPQ/AMT/JPS, TB-211

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-097	A

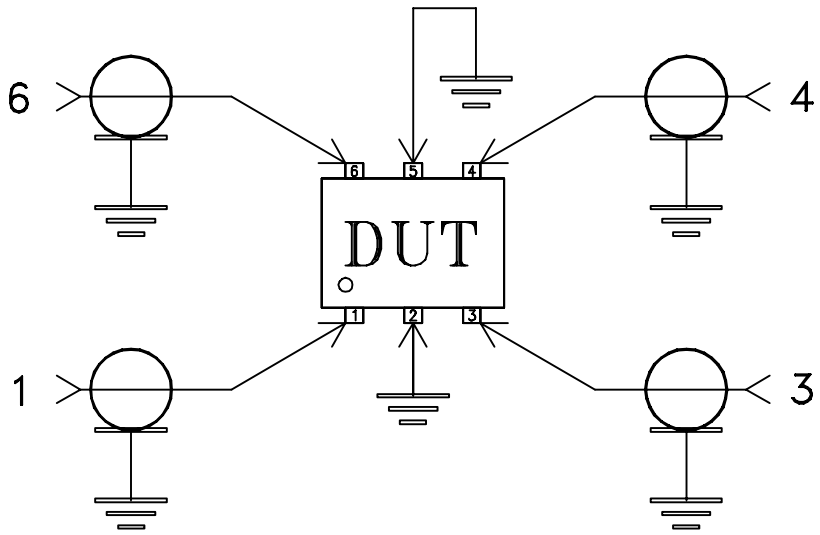
FILE:	SCALE:	SHEET:
98PL097	8:1	1 OF 1

Evaluation Board and Circuit

For Pin Connections refer to Data Sheet of the DUT



TB-211



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

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Environmental Specifications ENV02T1

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