

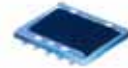
Engineering Development Model

Power Splitter/Combiner 4 Way-0°

SCA-ED13277/4

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 : DZ944

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency		1000		2000	MHz
Isolation	1000-2000 MHz		22		dB
Insertion Loss Above 6.0 dB	1000-2000 MHz		0.75		dB
Phase Unbalance	1000-2000 MHz		2.90		deg.
Amplitude Unbalance	1000-2000 MHz		0.60		dB
VSWR	SUM Port		1.30		(:1)
	OUT Ports		1.36		(:1)

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

PIN CONNECTIONS	
SUM PORT	3
PORT 1	6
PORT 2	7
PORT 3	9
PORT 4	10
GROUND	1,2,4,5,8

Functional Diagram



4 Way-0° Power Splitter/Combiner

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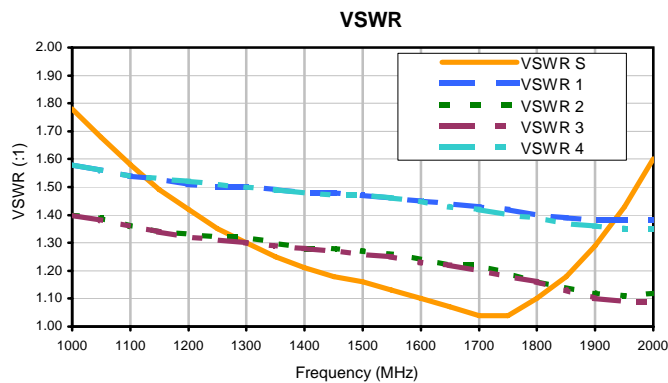
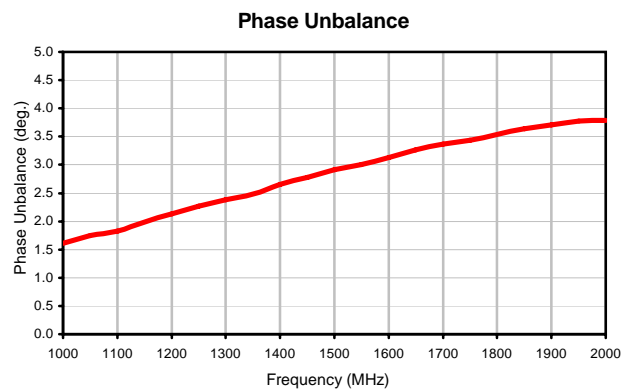
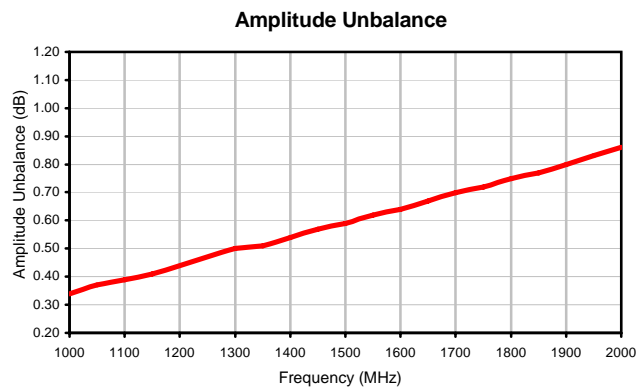
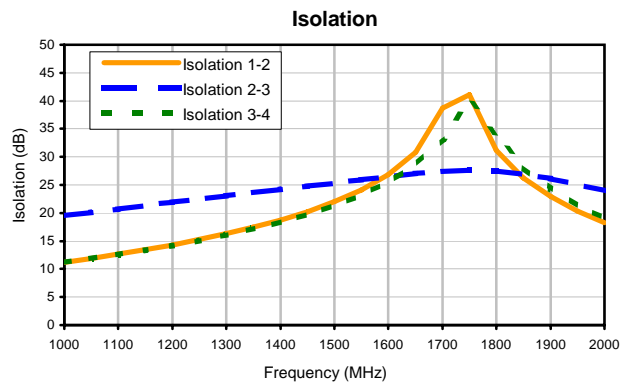
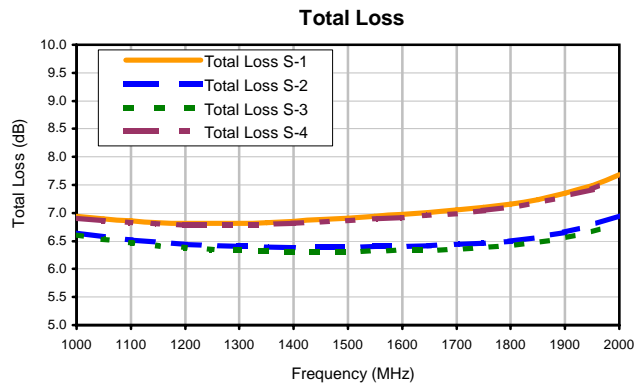
Typical Performance Data

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
1000.0	6.94	6.64	6.61	6.91	0.34	11.24	19.52	11.22	1.61	1000.0	1.78	1.58	1.40	1.40	1.58
1050.0	6.90	6.58	6.53	6.86	0.37	11.92	20.12	11.88	1.75	1050.0	1.68	1.56	1.39	1.38	1.56
1100.0	6.86	6.52	6.47	6.83	0.39	12.65	20.70	12.59	1.83	1100.0	1.58	1.54	1.36	1.36	1.54
1150.0	6.83	6.48	6.42	6.80	0.41	13.44	21.29	13.36	1.98	1150.0	1.49	1.53	1.34	1.34	1.53
1200.0	6.82	6.44	6.38	6.78	0.44	14.31	21.87	14.20	2.13	1200.0	1.42	1.51	1.33	1.32	1.52
1250.0	6.82	6.42	6.35	6.78	0.47	15.27	22.47	15.11	2.27	1250.0	1.35	1.50	1.32	1.31	1.51
1300.0	6.82	6.40	6.33	6.78	0.50	16.32	23.05	16.11	2.38	1300.0	1.30	1.50	1.32	1.30	1.50
1350.0	6.83	6.39	6.32	6.80	0.51	17.48	23.63	17.20	2.48	1350.0	1.25	1.49	1.30	1.29	1.49
1400.0	6.85	6.38	6.31	6.81	0.54	18.77	24.21	18.42	2.65	1400.0	1.21	1.48	1.28	1.28	1.48
1450.0	6.88	6.39	6.31	6.84	0.57	20.25	24.80	19.77	2.78	1450.0	1.18	1.48	1.28	1.27	1.47
1500.0	6.91	6.39	6.31	6.86	0.59	21.98	25.38	21.33	2.91	1500.0	1.16	1.47	1.27	1.26	1.47
1550.0	6.94	6.40	6.32	6.89	0.62	24.07	25.96	23.15	3.00	1550.0	1.13	1.46	1.26	1.25	1.46
1600.0	6.97	6.40	6.33	6.92	0.64	26.81	26.52	25.43	3.13	1600.0	1.10	1.45	1.24	1.23	1.45
1650.0	7.01	6.42	6.34	6.96	0.67	30.85	27.03	28.52	3.27	1650.0	1.07	1.44	1.22	1.22	1.43
1700.0	7.05	6.44	6.35	6.99	0.70	38.72	27.43	33.27	3.37	1700.0	1.04	1.43	1.22	1.20	1.42
1750.0	7.10	6.46	6.38	7.04	0.72	41.11	27.62	39.96	3.44	1750.0	1.04	1.42	1.19	1.18	1.40
1800.0	7.16	6.50	6.42	7.10	0.75	31.15	27.49	33.99	3.54	1800.0	1.10	1.40	1.16	1.16	1.39
1850.0	7.24	6.56	6.47	7.18	0.77	26.24	26.98	28.14	3.64	1850.0	1.18	1.39	1.14	1.13	1.37
1900.0	7.35	6.65	6.55	7.29	0.80	22.89	26.13	24.27	3.71	1900.0	1.29	1.38	1.12	1.10	1.36
1950.0	7.49	6.78	6.66	7.42	0.83	20.32	25.08	21.38	3.77	1950.0	1.43	1.38	1.11	1.09	1.35
2000.0	7.68	6.95	6.83	7.61	0.86	18.21	23.96	19.08	3.79	2000.0	1.60	1.38	1.12	1.09	1.35

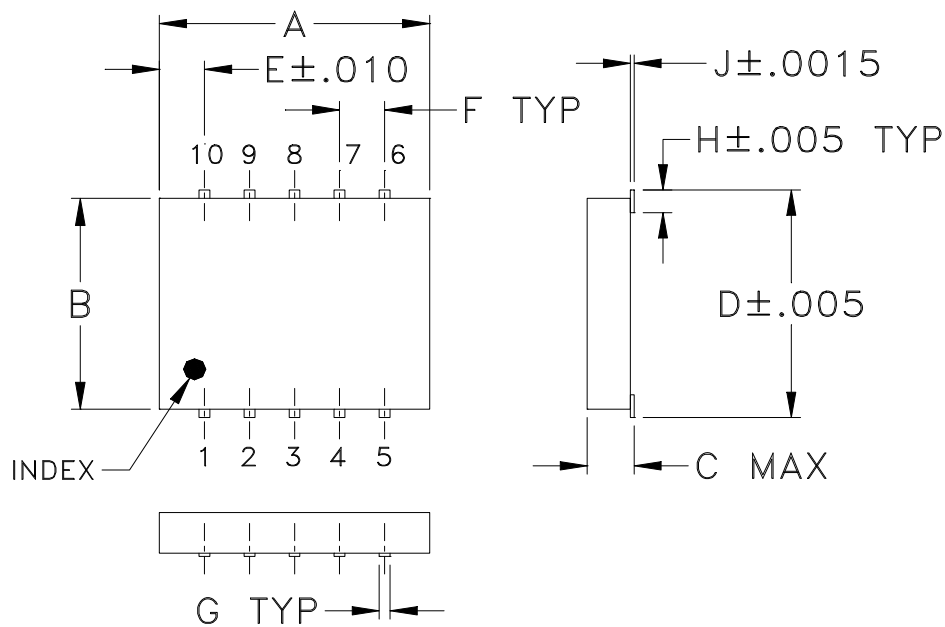
¹Total Loss = Insertion Loss + 6dB Splitter Loss



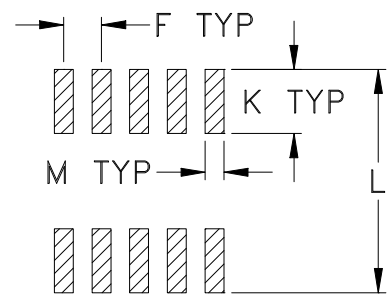
Typical Performance Curves



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	WT. GRAMS
DZ944	.30 (7.62)	.250 (6.35)	.052 (1.32)	.266 (6.76)	.050 (1.27)	.050 (1.27)	.012 (0.30)	.029 (0.74)	.004 (0.10)	.085 (2.16)	.296 (7.52)	.030 (0.76)	0.25

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

Notes:

- Case material: Ceramic.
- Termination finish:
 - For RoHS Case Styles: Tin plate. All models, (+) suffix.
 - For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.



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Tape & Reel Packaging TR-F34



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
16	12	7	Small quantity standard (see note)	20
				50
				100
				200
		13	Standard	500
				1000

Note: Availability of small reel quantity varies by model.
Refer to pricing and availability on individual model dashboard.

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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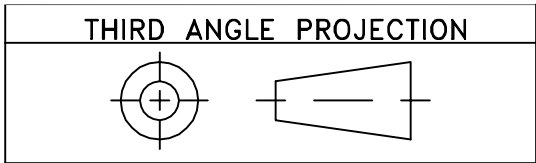


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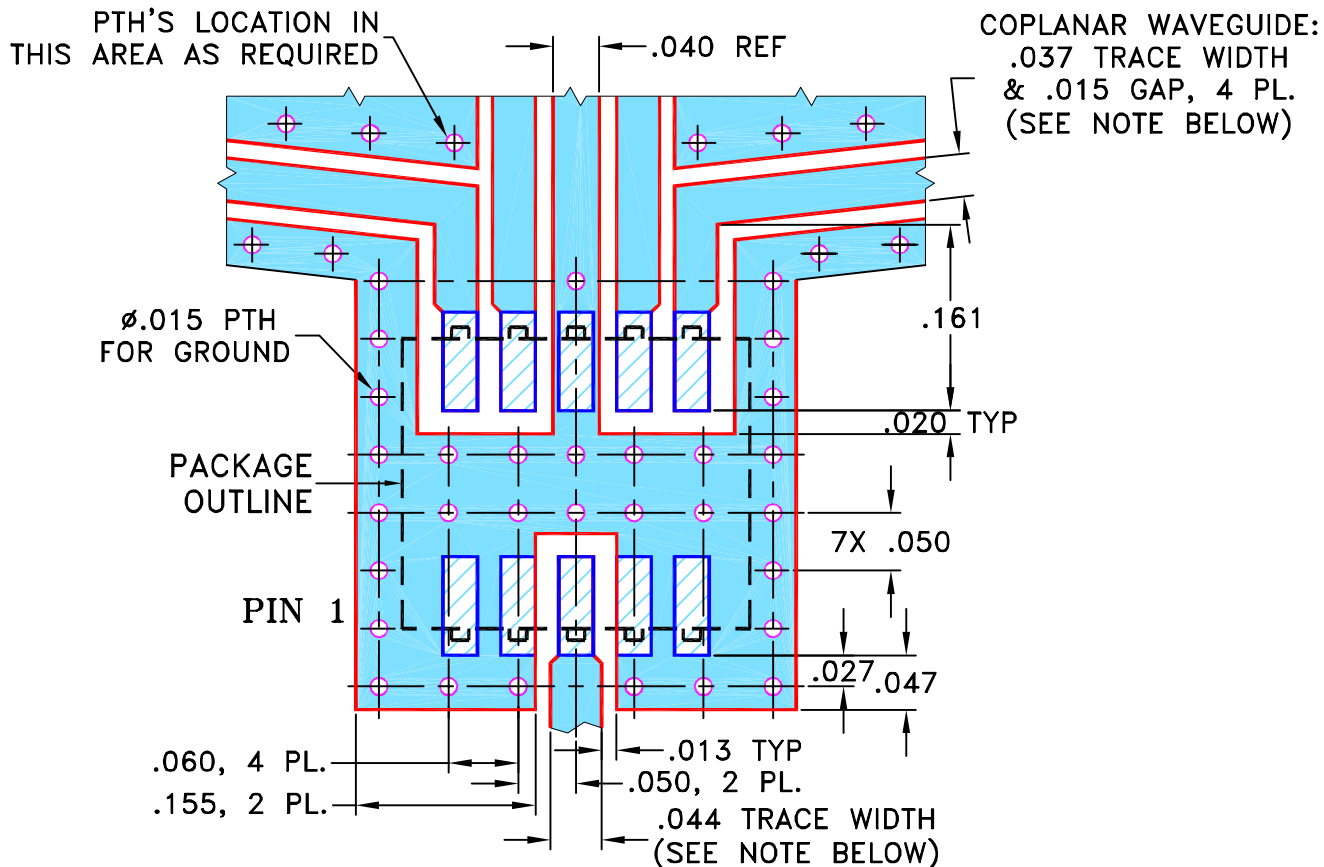
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REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M84705	NEW RELEASE	01/02/03	MMG	ABD
A	M91639	REMOVED NOTE 2, UPDATED DIMENSIONS	04/14/04	AV	DJ
B	M102713	UPDATED DWG. ACCORDING AS B14-TB-241 & ADDED "...WITH SMOBC"	01/25/06	MMG	ABD

**SUGGESTED MOUNTING CONFIGURATION
FOR DZ944 CASE STYLE, "ny" PIN CONNECTION.**



- NOTES:**
- TRACE WIDTH AND GAP ARE SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015".
COPPER: 1/2 OZ. EACH SIDE.
FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
 - 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	MMG	12/30/02
TOLERANCES ON:	AV	01/02/03
2 PL DECIMALS ±	ABD	01/02/03
3 PL DECIMALS ± .005		
ANGLES ±		
FRACTIONS ±		



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PL, ny, DZ944, SCA, TB-241

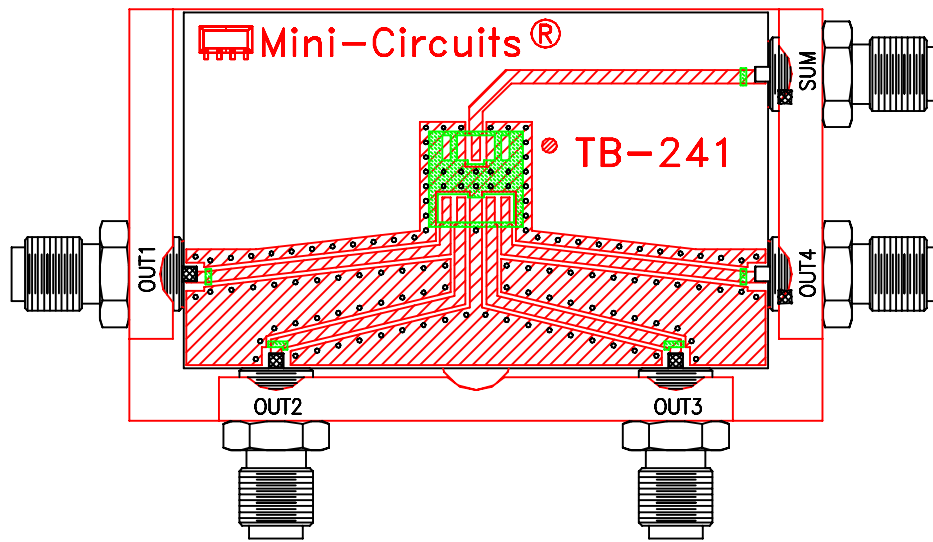
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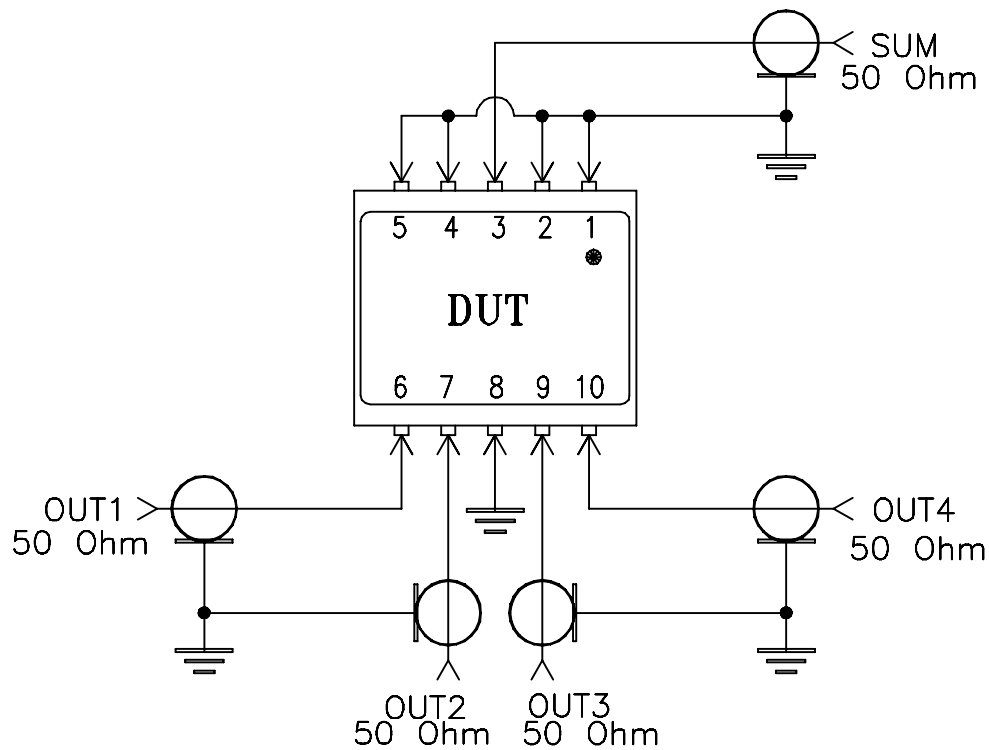
ASHEETA1.DWG REV:A DATE:01/12/95

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-125	B
FILE:	98PL125	SCALE:	SHEET:
		6:1	1 OF 1

Evaluation Board and Circuit




TB-241



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.020 inch.

 **Mini-Circuits®**

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
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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
Autoclave	15 psig, 100% RH, 121°C, 96 hours	JESD22-A102-C, Condition C
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Solder Reflow Heat	Sn-Pb Eutectic Process: 225°C peak Pb-Free Process: 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2; Figure 5-1
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