

Engineering Development Model

Power Splitter/Combiner

ADP-ED7781/1

3 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 : CJ725

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		0.7		340 MHz
Isolation	0.7 - 7 MHz		39	dB
	7 - 170 MHz		37	dB
	170 - 340 MHz		24	dB
Insertion Loss Above 4.8 dB	0.7 - 7 MHz		0.32	dB
	7 - 170 MHz		0.36	dB
	170 - 340 MHz		0.82	dB
Phase Unbalance	0.7 - 7 MHz		0.034	deg.
	7 - 170 MHz		0.591	deg.
	170 - 340 MHz		2.098	deg.
Amplitude Unbalance	0.7 - 7 MHz		0.010	dB
	7 - 170 MHz		0.008	dB
	170 - 340 MHz		0.079	dB
VSWR	SUM Port		1.15	(:1)
	OUT Ports		1.16	(:1)

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

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

Functional Diagram



3 Way-0° Power Splitter/Combiner

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Typical Performance Data

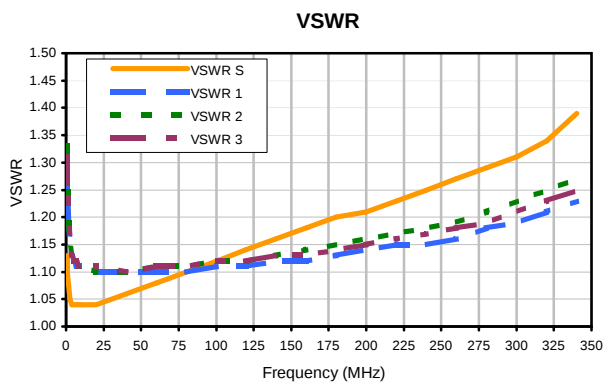
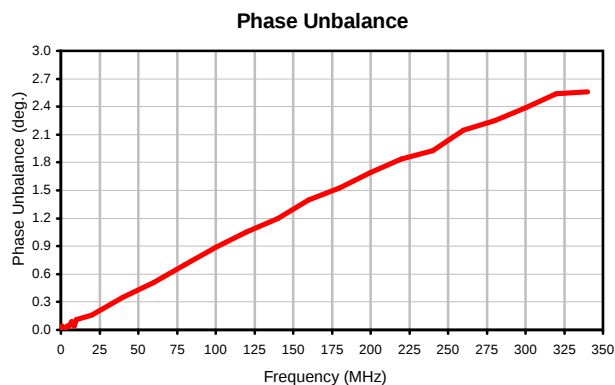
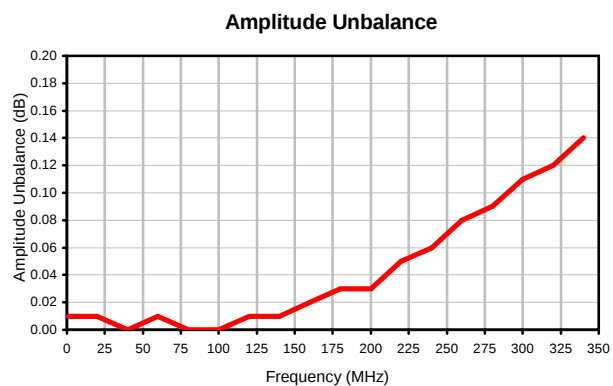
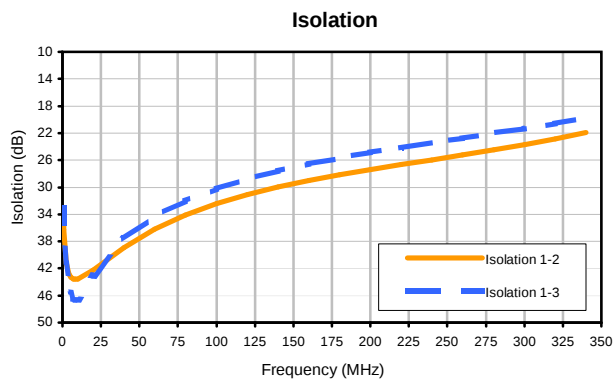
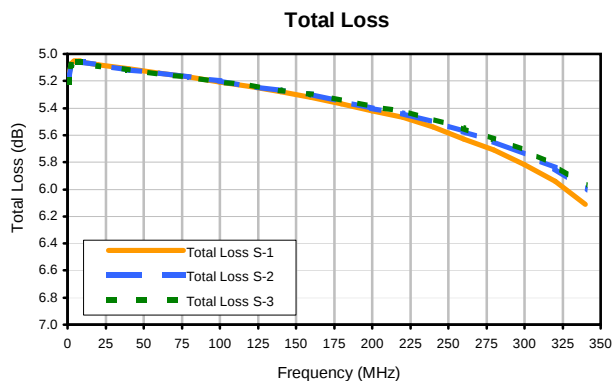
FREQ. (MHz)	TOTAL LOSS ¹ (dB)			AMP. UNBAL. (dB)	ISOLATION (dB)		PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)			
	S-1	S-2	S-3		1-2	1-3			S	1	2	3
0.7	5.20	5.21	5.21	0.01	34.04	33.02	0.03	0.7	1.13	1.30	1.33	1.31
0.8	5.19	5.19	5.19	0.01	34.91	33.88	0.02	0.8	1.12	1.27	1.30	1.28
0.9	5.17	5.17	5.18	0.01	35.64	34.65	0.01	0.9	1.11	1.25	1.28	1.26
1.0	5.15	5.16	5.17	0.01	36.32	35.31	0.04	1.0	1.10	1.24	1.26	1.25
2.5	5.07	5.08	5.08	0.01	41.23	41.20	0.00	2.5	1.05	1.15	1.16	1.16
4.0	5.05	5.06	5.06	0.01	42.83	44.11	0.04	4.0	1.04	1.13	1.13	1.13
5.5	5.05	5.06	5.06	0.01	43.31	45.59	0.04	5.5	1.04	1.12	1.12	1.12
7.0	5.05	5.06	5.06	0.01	43.56	46.46	0.09	7.0	1.04	1.11	1.12	1.12
8.5	5.05	5.06	5.06	0.01	43.58	46.69	0.04	8.5	1.04	1.11	1.11	1.11
10.0	5.06	5.06	5.06	0.01	43.53	46.58	0.11	10.0	1.04	1.11	1.11	1.11
20.0	5.08	5.08	5.09	0.01	42.24	43.05	0.16	20.0	1.04	1.10	1.10	1.11
40.0	5.11	5.12	5.12	0.00	38.90	37.60	0.35	40.0	1.06	1.10	1.10	1.10
60.0	5.14	5.14	5.15	0.01	36.16	34.33	0.51	60.0	1.08	1.10	1.11	1.11
80.0	5.17	5.17	5.17	0.00	34.11	32.02	0.70	80.0	1.10	1.10	1.11	1.11
100.0	5.21	5.20	5.21	0.00	32.45	30.23	0.89	100.0	1.12	1.11	1.12	1.12
120.0	5.24	5.24	5.23	0.01	31.12	28.79	1.05	120.0	1.14	1.11	1.12	1.12
140.0	5.28	5.27	5.27	0.01	29.99	27.59	1.20	140.0	1.16	1.12	1.13	1.13
160.0	5.32	5.30	5.30	0.02	29.02	26.57	1.40	160.0	1.18	1.12	1.14	1.13
180.0	5.37	5.35	5.34	0.03	28.16	25.68	1.53	180.0	1.20	1.13	1.15	1.14
200.0	5.42	5.40	5.39	0.03	27.39	24.87	1.69	200.0	1.21	1.14	1.16	1.15
220.0	5.47	5.44	5.42	0.05	26.68	24.14	1.84	220.0	1.23	1.15	1.17	1.16
240.0	5.54	5.50	5.48	0.06	25.96	23.43	1.93	240.0	1.25	1.15	1.18	1.17
260.0	5.63	5.57	5.55	0.08	25.24	22.74	2.15	260.0	1.27	1.16	1.19	1.18
280.0	5.71	5.65	5.63	0.09	24.50	22.04	2.25	280.0	1.29	1.18	1.21	1.19
300.0	5.82	5.74	5.71	0.11	23.71	21.33	2.39	300.0	1.31	1.19	1.23	1.21
320.0	5.94	5.84	5.82	0.12	22.86	20.57	2.54	320.0	1.34	1.21	1.25	1.23
340.0	6.11	6.00	5.97	0.14	21.93	19.74	2.56	340.0	1.39	1.23	1.27	1.25

¹ Total Loss = Insertion Loss + 4.8dB Splitter Loss

3 Way-0° Power Splitter/Combiner

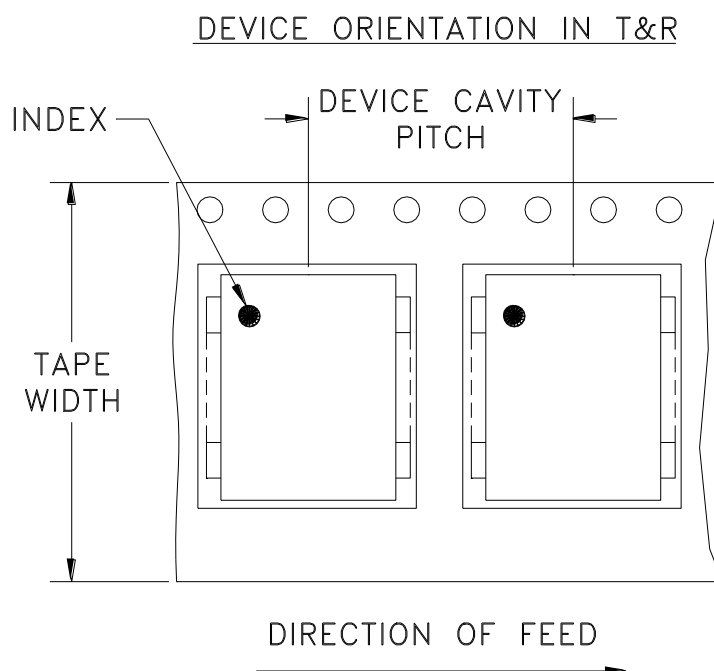
ADP-ED7781/1

Typical Performance Curves



REV. X2
ADP-ED7781/1
100707
Page 1 of 1

Tape & Reel Packaging TR-F10



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
24	16	7	10,20,50,100,200
		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.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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



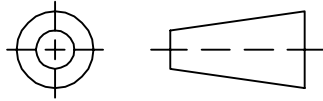
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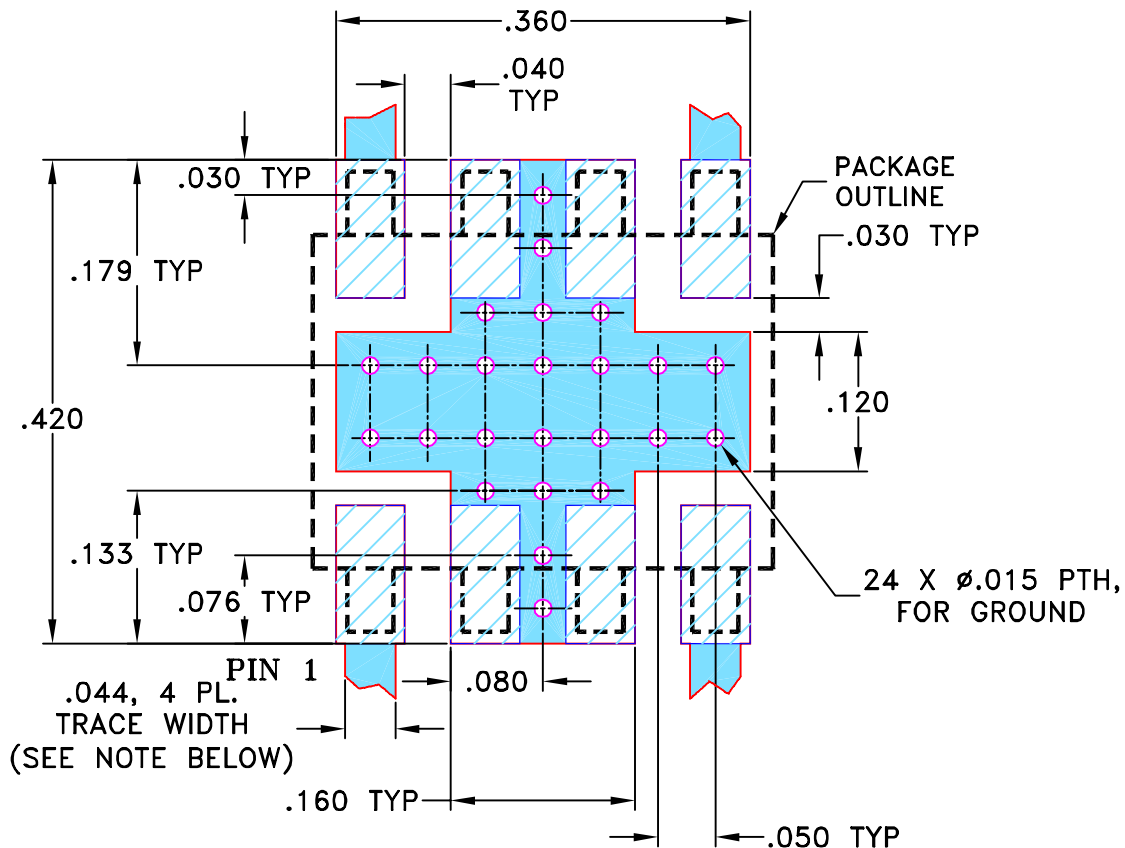
THIRD ANGLE PROJECTION



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 CJ725 CASE STYLE, "ma", "nf" PIN CONNECTIONS



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

07/18/02

TOLERANCES ON:

CHECKED

HY

08/01/02

2 PL DECIMALS $\pm$

APPROVED

DJ

08/06/02

3 PL DECIMALS $\pm$.005ANGLES $\pm$ FRACTIONS $\pm$

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PL, ma/nf, CJ725, AD3PS/ADQ, TB-83

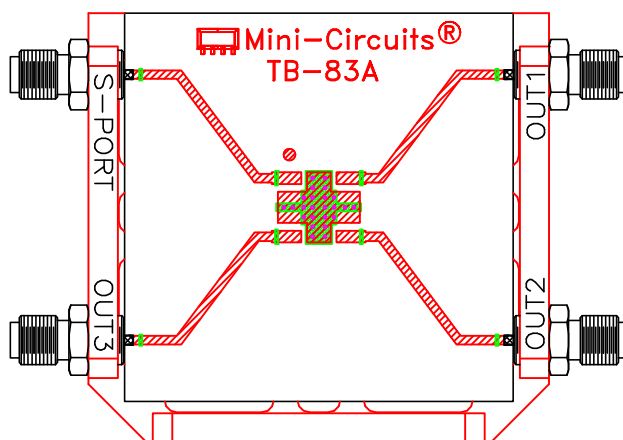
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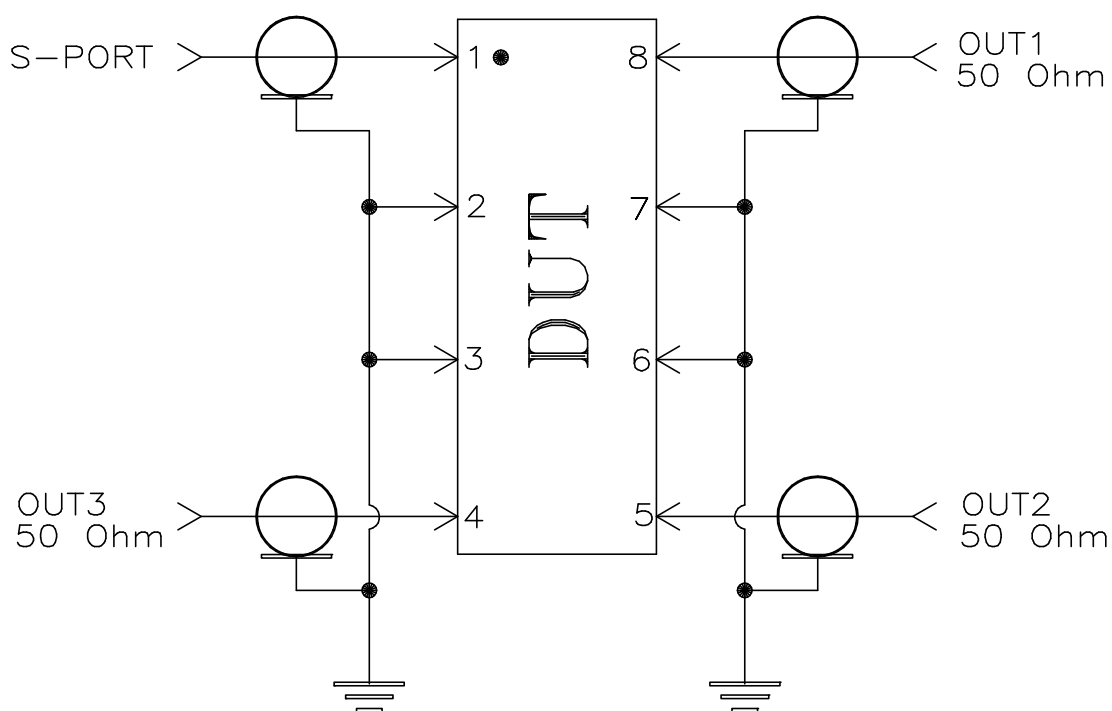
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SHEET: 1 OF 1

Evaluation Board and Circuit



TB-83



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	-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