

Engineering Development Model

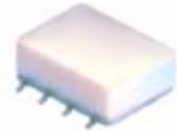
Power Splitter/Combiner

ADQ-ED12470/1

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.

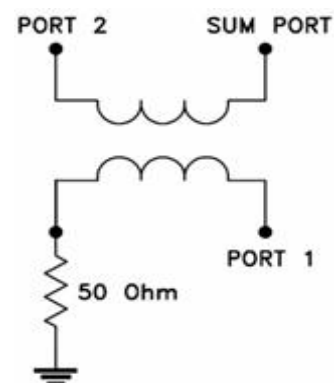
CASE STYLE : CJ725

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		50		400 MHz
Isolation	50 - 400 MHz		20	
Insertion Loss				
Average of Coupled Outputs	50 - 400 MHz		1.00	
above 3.0 dB				
Phase Unbalance	50 - 400 MHz		92.056	
				deg.
Amplitude Unbalance	50 - 400 MHz		1.531	
				dB
VSWR	SUM Port		1.22	
	OUT Ports		1.25	
				(:1)
				(:1)

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

PIN CONNECTIONS	
SUM PORT	1
PORT 1 (0°)	5
PORT 2 (90°)	8
50Ω TERMINATION	4
GND	2, 3, 6, 7

Functional Diagram



2 Way-90° Power Splitter/Combiner

ADQ-ED12470/1

Typical Performance Data

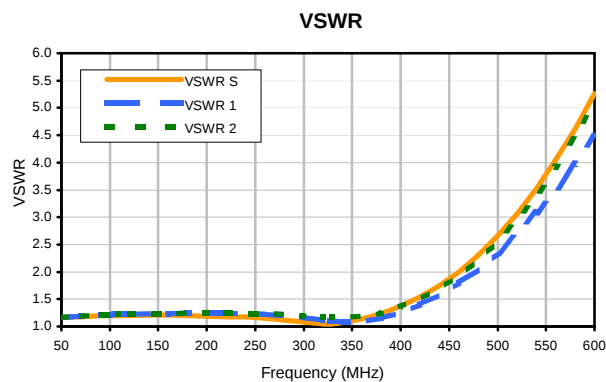
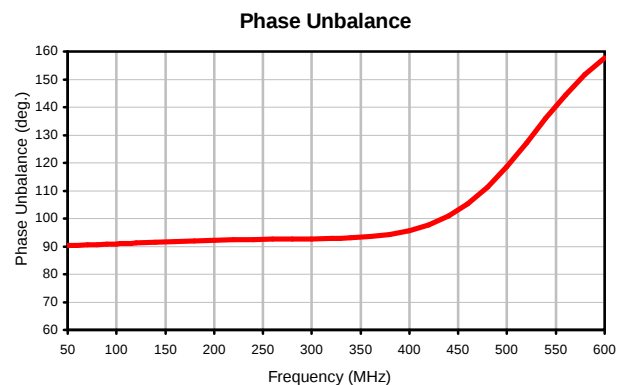
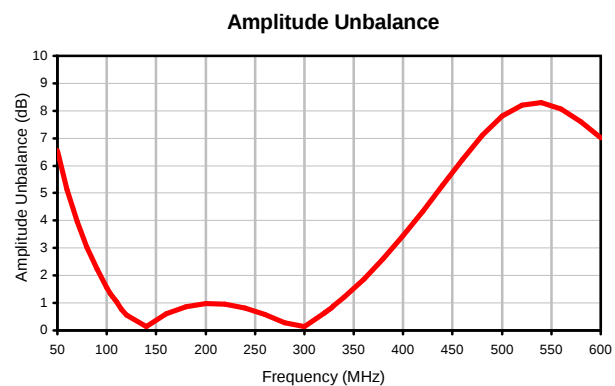
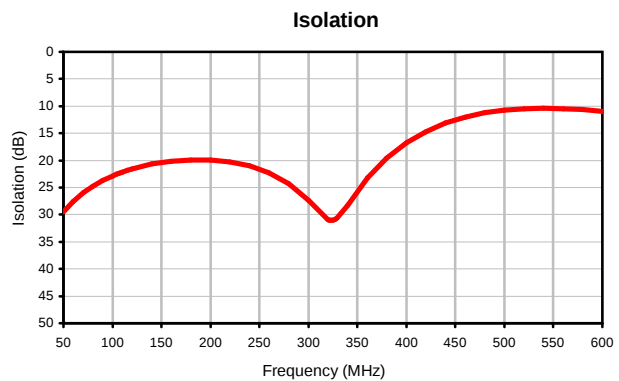
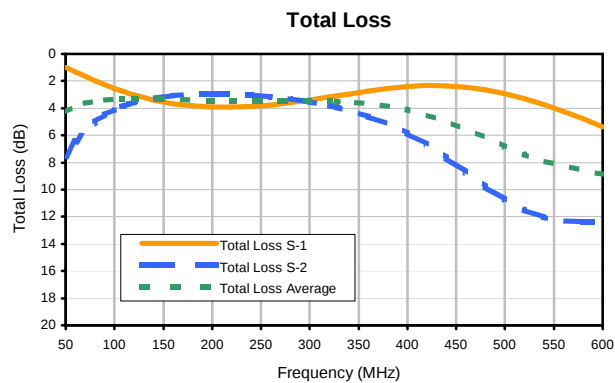
FREQ. (MHz)	TOTAL LOSS ¹			AMP. UNBAL. (dB)	ISOLATION (dB) 1-2	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR		
	S-1	S-2	AVG.					S	1	2
50.0	1.01	7.55	4.28	6.54	29.51	90.37	50.0	1.16	1.16	1.16
60.0	1.33	6.45	3.89	5.12	27.55	90.45	60.0	1.17	1.17	1.18
70.0	1.65	5.62	3.64	3.97	25.99	90.54	70.0	1.18	1.19	1.19
80.0	1.97	4.99	3.48	3.02	24.72	90.63	80.0	1.19	1.20	1.20
90.0	2.27	4.50	3.39	2.23	23.70	90.75	90.0	1.20	1.21	1.21
100.0	2.55	4.12	3.34	1.57	22.86	90.89	100.0	1.20	1.21	1.21
104.0	2.65	3.99	3.32	1.34	22.56	90.93	104.0	1.20	1.22	1.22
106.0	2.70	3.93	3.32	1.23	22.43	90.97	106.0	1.20	1.22	1.22
108.0	2.75	3.87	3.31	1.12	22.29	90.99	108.0	1.20	1.22	1.22
110.0	2.80	3.82	3.31	1.02	22.15	91.02	110.0	1.20	1.22	1.22
115.0	2.92	3.69	3.31	0.77	21.86	91.09	115.0	1.20	1.22	1.22
120.0	3.03	3.58	3.31	0.55	21.58	91.15	120.0	1.20	1.22	1.23
140.0	3.40	3.26	3.33	0.14	20.67	91.41	140.0	1.21	1.23	1.23
160.0	3.67	3.07	3.37	0.60	20.12	91.68	160.0	1.21	1.24	1.24
180.0	3.84	2.98	3.41	0.87	19.90	91.94	180.0	1.20	1.25	1.25
200.0	3.92	2.95	3.44	0.98	19.96	92.15	200.0	1.19	1.25	1.25
220.0	3.93	2.97	3.45	0.95	20.34	92.31	220.0	1.18	1.25	1.25
240.0	3.86	3.04	3.45	0.82	21.04	92.47	240.0	1.17	1.24	1.24
260.0	3.75	3.16	3.46	0.59	22.28	92.56	260.0	1.15	1.22	1.23
280.0	3.59	3.32	3.46	0.27	24.27	92.65	280.0	1.12	1.20	1.22
300.0	3.39	3.53	3.46	0.14	27.41	92.73	300.0	1.08	1.16	1.19
320.0	3.18	3.81	3.50	0.63	30.93	92.86	320.0	1.05	1.12	1.17
321.0	3.17	3.83	3.50	0.66	30.99	92.87	321.0	1.05	1.12	1.17
323.0	3.14	3.86	3.50	0.71	31.06	92.88	323.0	1.05	1.12	1.17
325.0	3.12	3.89	3.51	0.77	31.02	92.91	325.0	1.05	1.11	1.17
327.0	3.10	3.92	3.51	0.82	30.90	92.93	327.0	1.05	1.11	1.17
329.0	3.08	3.96	3.52	0.88	30.66	92.95	329.0	1.05	1.10	1.17
340.0	2.95	4.16	3.56	1.21	28.27	93.11	340.0	1.07	1.08	1.17
360.0	2.73	4.60	3.67	1.87	23.28	93.54	360.0	1.14	1.08	1.19
380.0	2.54	5.16	3.85	2.62	19.53	94.34	380.0	1.24	1.15	1.25
400.0	2.40	5.84	4.12	3.44	16.76	95.67	400.0	1.37	1.26	1.36
420.0	2.33	6.67	4.50	4.34	14.69	97.72	420.0	1.54	1.40	1.50
440.0	2.34	7.63	4.99	5.28	13.14	100.82	440.0	1.75	1.58	1.69
460.0	2.45	8.68	5.57	6.23	12.00	105.23	460.0	2.00	1.80	1.93
480.0	2.65	9.75	6.20	7.10	11.21	111.22	480.0	2.30	2.05	2.22
500.0	2.94	10.73	6.84	7.80	10.72	118.69	500.0	2.66	2.35	2.56
520.0	3.31	11.51	7.41	8.21	10.47	127.23	520.0	3.06	2.70	2.95
540.0	3.74	12.03	7.89	8.29	10.41	136.07	540.0	3.52	3.08	3.40
560.0	4.24	12.30	8.27	8.06	10.48	144.35	560.0	4.04	3.50	3.91
580.0	4.78	12.38	8.58	7.60	10.67	151.65	580.0	4.62	3.97	4.47
600.0	5.36	12.37	8.87	7.01	10.91	157.70	600.0	5.26	4.48	5.10

¹ Total Loss = Insertion Loss + 3dB Splitter Loss

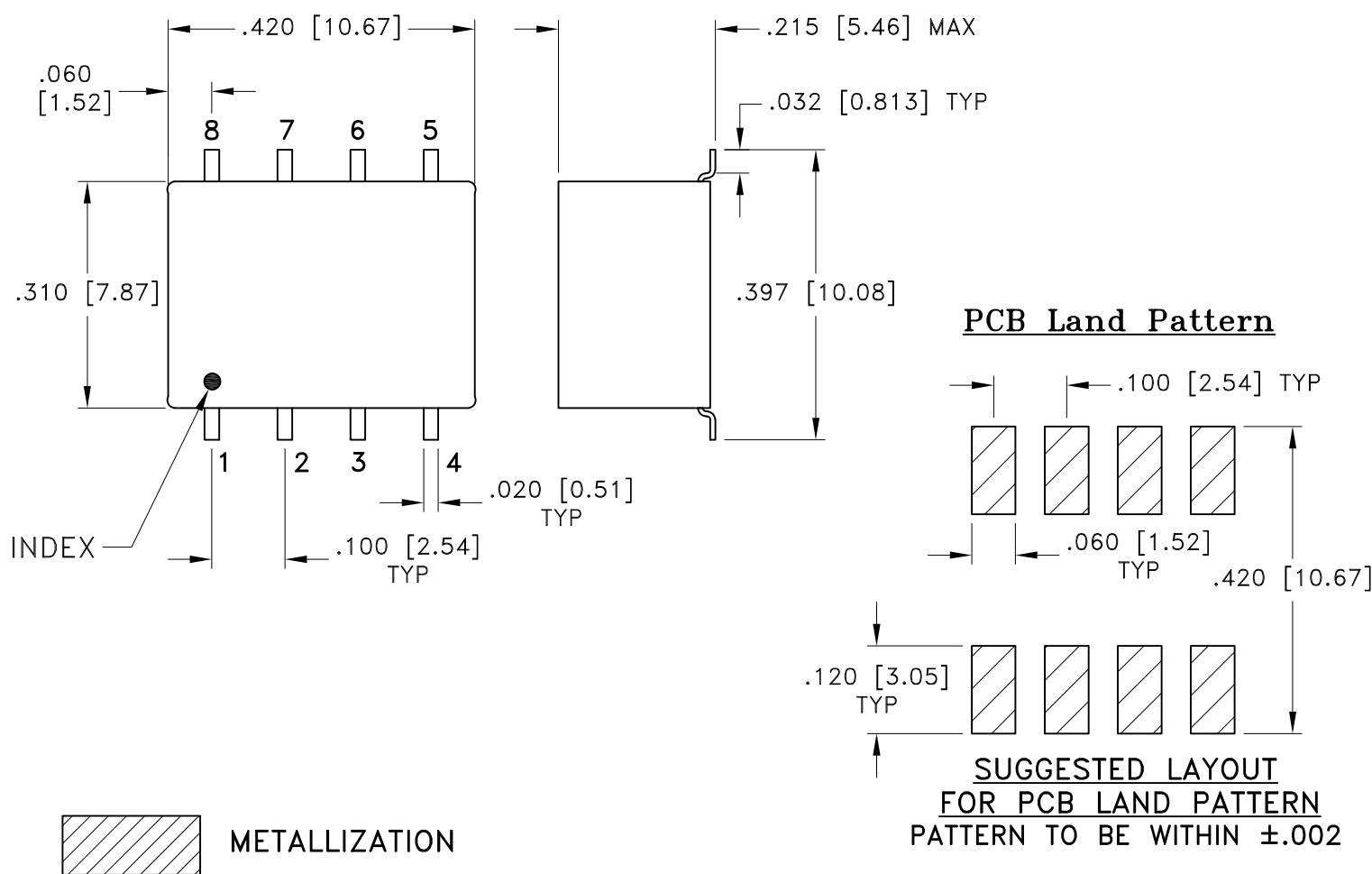
2 Way-90° Power Splitter/Combiner

ADQ-ED12470/1

Typical Performance Curves



REV. X2
ADQ-ED12470/1
100707
Page 1 of 1



Weight: .40 gram

Dimensions are in inches [mm]. Tolerances: 2 Pl. ± 0.01 ; 3 Pl. ± 0.005 Inch

Notes:

1. Case material: Plastic.
2. Termination finish:
Tin plate over Nickel plate.



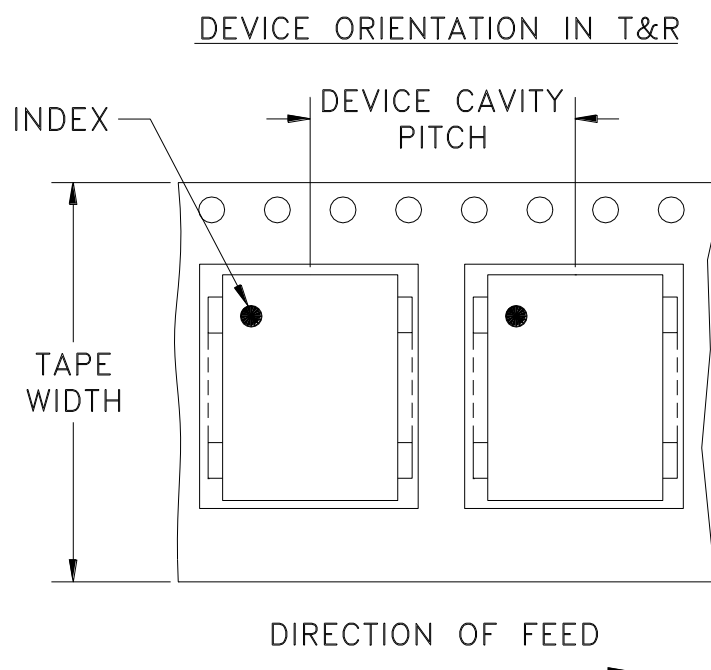
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Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
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REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M82272	NEW RELEASE	08/06/02	GF	DJ
A	M102713	UPDATED NOTES, ADDED "...WITH SMOBC"	01/16/06	GT	IL

Top view of a 16-pin package. The package is rectangular with a central area containing 24 circular through-holes arranged in a 4x6 grid. The package outline is shown with a dashed line. Dimensions are given in inches. Key dimensions include: overall width of .360, overall height of .420, pin pitch of .080, and pin width of .040. The package has a central area with a width of .120 and a height of .133. The package is labeled with dimensions and features: .030 TYP, .179 TYP, .040 TYP, .030 TYP, .120, .133 TYP, .076 TYP, .044, 4 PL. TRACE WIDTH (SEE NOTE BELOW), .160 TYP, .080, .050 TYP, 24 X ϕ .015 PTH, FOR GROUND, and PACKAGE OUTLINE.

FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

 DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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Brooklyn NY 11235

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

SIZE
A

CODE IDENT
15542

DRAWING NO:
98-PL-063

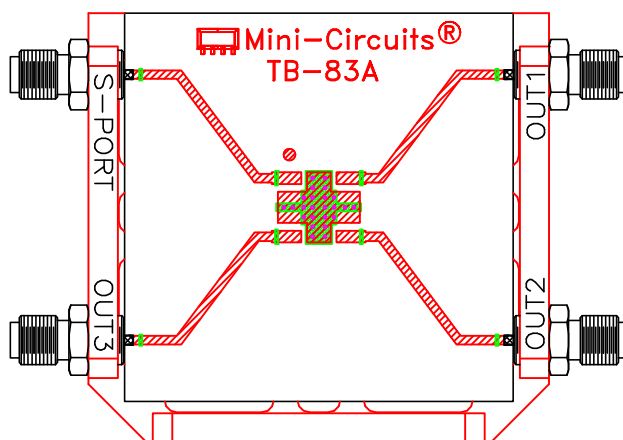
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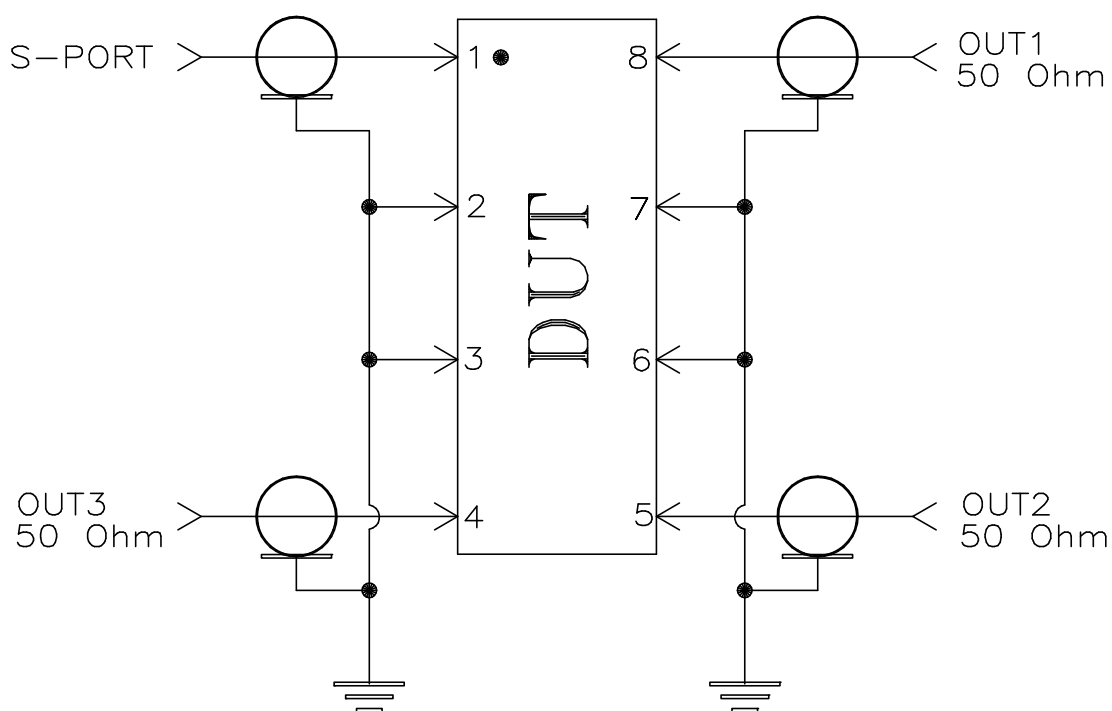
SCALE: 6:1

SHEET:	1 OF 1
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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