Engineering Development Model

Power Splitter/Combiner QCV-ED13423C/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.

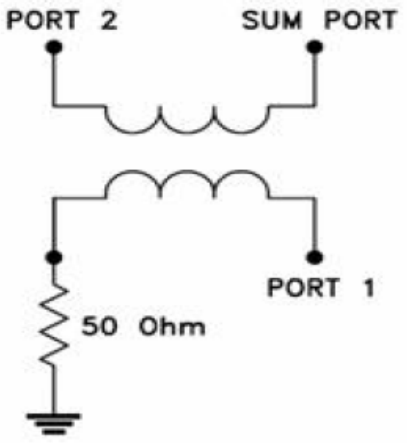
CASE STYLE : JV1210C-1

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		90		150	MHz
Isolation			21		dB
Insertion Loss Average of Coupled Outputs above 3.0 dB			0.50		dB
Phase Unbalance			1.00		deg.
Amplitude Unbalance			0.35		dB
VSWR	**SUM Port**		1.25		(:1)
	OUT Ports		1.25		(:1)

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

PIN CONNECTIONS	
SUM PORT	1
PORT 1 (0°)	4
PORT 2 (90°)	6
50 TERM. EXTERNAL	3
GND	2,5

Functional Diagram



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Typical Performance Data

FREQ.	TOTAL LOSS[1]		AMP. UNBAL.	ISOLATION	PHASE UNBAL.
(MHz)	(dB)		(dB)	(dB)	(Deg.)
	S-1	S-2		1-2	
60.0	1.91	5.53	3.62	31.31	88.03
65.0	2.10	5.14	3.05	30.56	88.04
70.0	2.28	4.81	2.53	29.80	88.06
75.0	2.45	4.53	2.08	29.06	88.08
80.0	2.62	4.29	1.67	28.29	88.12
85.0	2.78	4.09	1.31	27.51	88.16
90.0	2.92	3.91	0.99	26.73	88.22
95.0	3.05	3.77	0.72	25.92	88.29
100.0	3.17	3.66	0.49	25.10	88.39
105.0	3.27	3.58	0.30	24.27	88.52
110.0	3.36	3.52	0.15	23.42	88.70
115.0	3.43	3.48	0.05	22.56	88.93
120.0	3.49	3.48	0.01	21.66	89.23
125.0	3.53	3.50	0.03	20.73	89.60
130.0	3.55	3.55	0.01	19.77	90.09
135.0	3.55	3.64	0.09	18.77	90.71
140.0	3.54	3.77	0.24	17.76	91.54
145.0	3.51	3.96	0.45	16.73	92.64
150.0	3.48	4.20	0.73	15.68	94.11
155.0	3.44	4.53	1.09	14.63	96.14
160.0	3.41	4.94	1.53	13.60	98.91

FREQ.	VSWR		
(MHz)	(:1)		
	S	1	2
60.0	1.10	1.10	1.11
65.0	1.11	1.10	1.11
70.0	1.11	1.11	1.12
75.0	1.12	1.11	1.13
80.0	1.12	1.12	1.13
85.0	1.13	1.12	1.14
90.0	1.13	1.13	1.15
95.0	1.14	1.14	1.16
100.0	1.15	1.15	1.17
105.0	1.16	1.16	1.18
110.0	1.18	1.17	1.20
115.0	1.19	1.19	1.22
120.0	1.21	1.20	1.24
125.0	1.24	1.23	1.27
130.0	1.27	1.26	1.29
135.0	1.30	1.29	1.33
140.0	1.34	1.33	1.37
145.0	1.38	1.37	1.42
150.0	1.44	1.43	1.48
155.0	1.50	1.50	1.55
160.0	1.58	1.58	1.64

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

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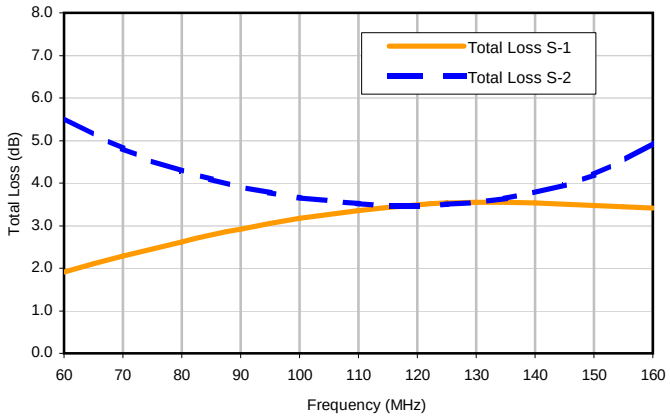
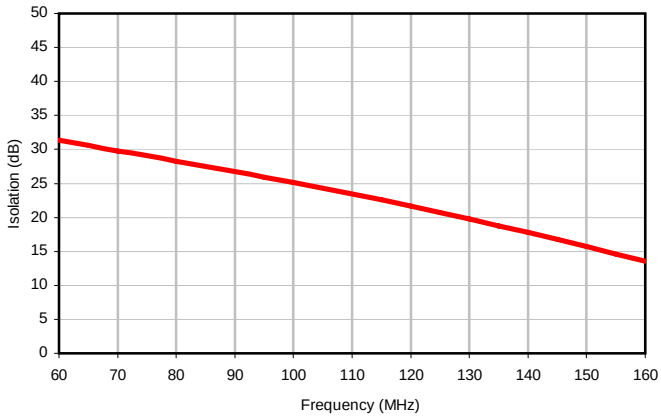
Typical Performance Curves

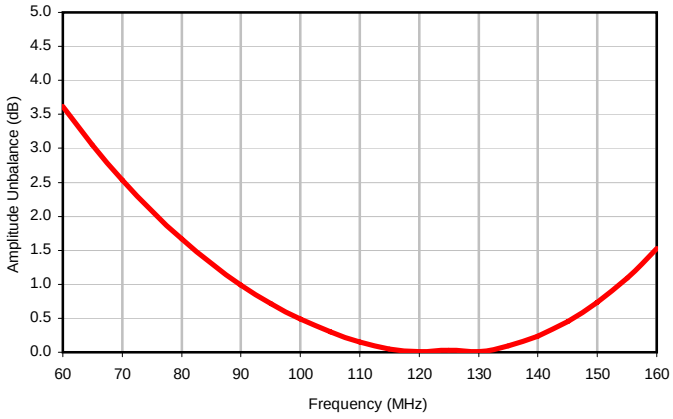
Total Loss



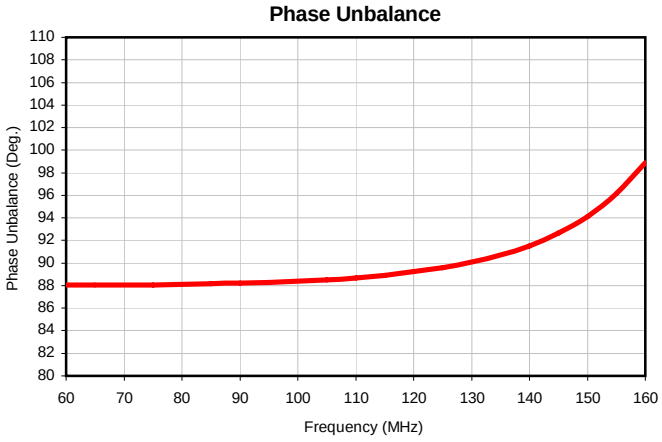
Isolation



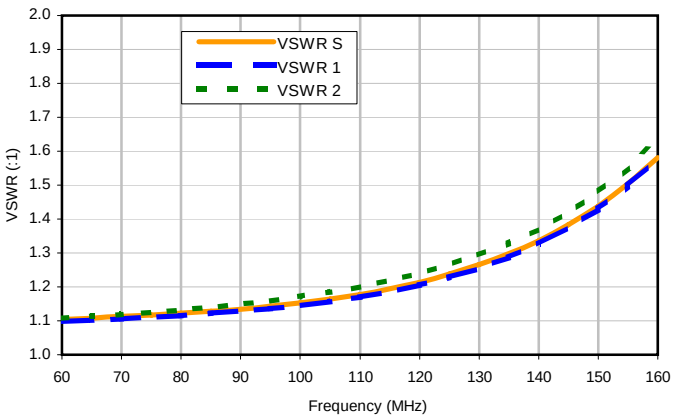
Amplitude Unbalance



Phase Unbalance

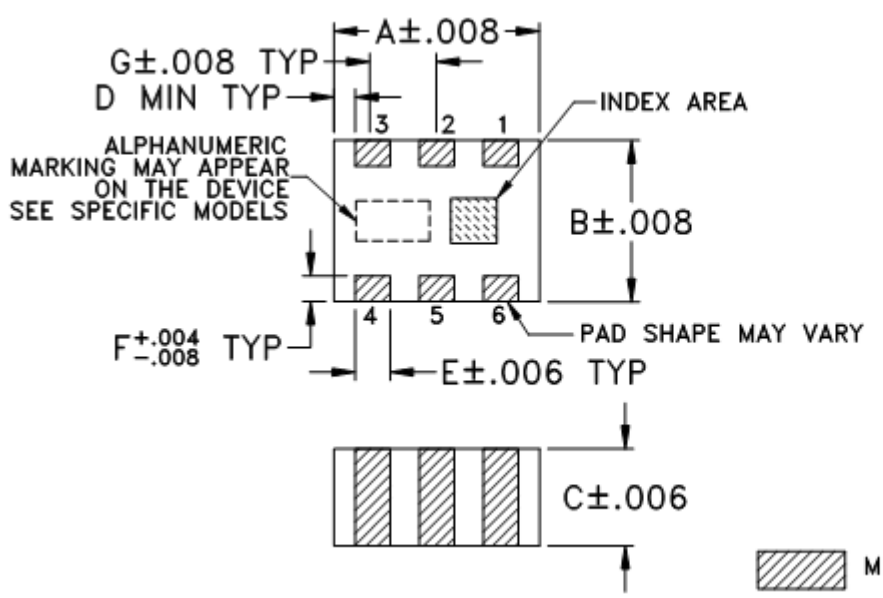


VSWR

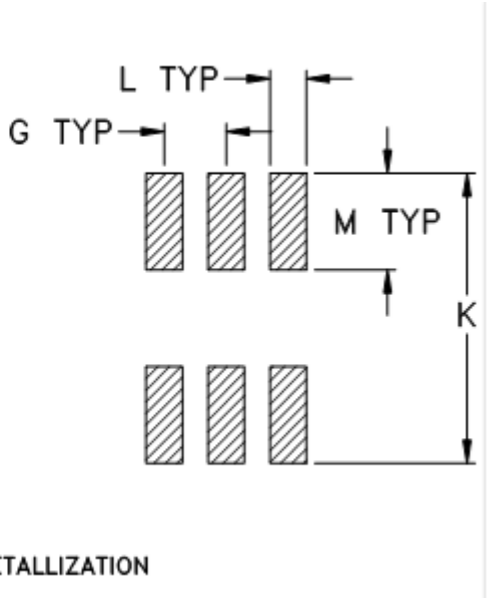


Case Style JV

Outline Dimensions JV1210C-1



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAM
JV1210C-1	.126 (3.2)	.098 (2.5)	.059 (1.50)	.004 (.1)	.022 (.56)	.016 (.4)	.039 (1.0)	- -	- -	.177 (4.5)	.024 (.6)	.059 (1.5)	.03

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

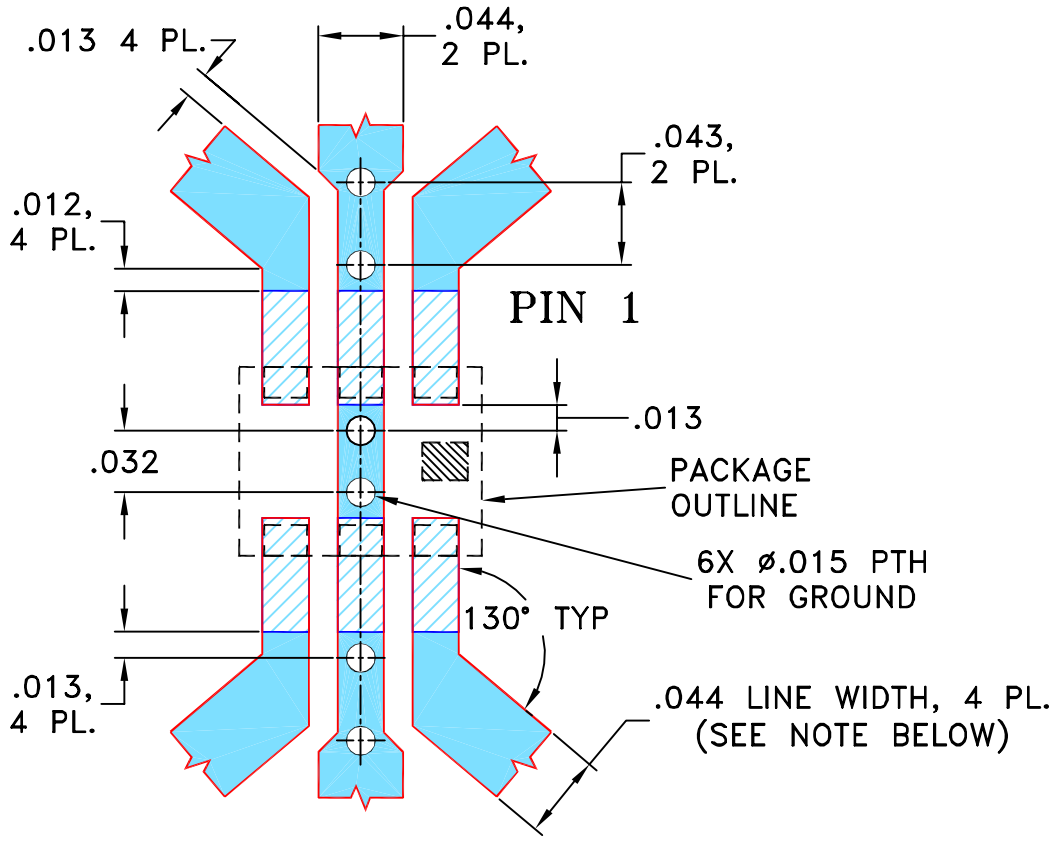
Notes:

1. Open style, ceramic base.
2. Termination finish: **as shown below or indicated on Data Sheet.**
   For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.
3. Pad tolerance is non-cumulative. Minimum spacing between each pad is .004.

THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M130278	NEW RELEASE	02/16/11	PW	ABD

SUGGESTED MOUNTING CONFIGURATION
FOR JV1210C-1 CASE STYLE, "06SQ07" PIN CONNECTION



NOTES: 1.TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 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	PW	02/04/11
TOLERANCES ON:	CHECKED	IL	02/16/11
2 PL DECIMALS ±	APPROVED	ABD	02/16/11
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

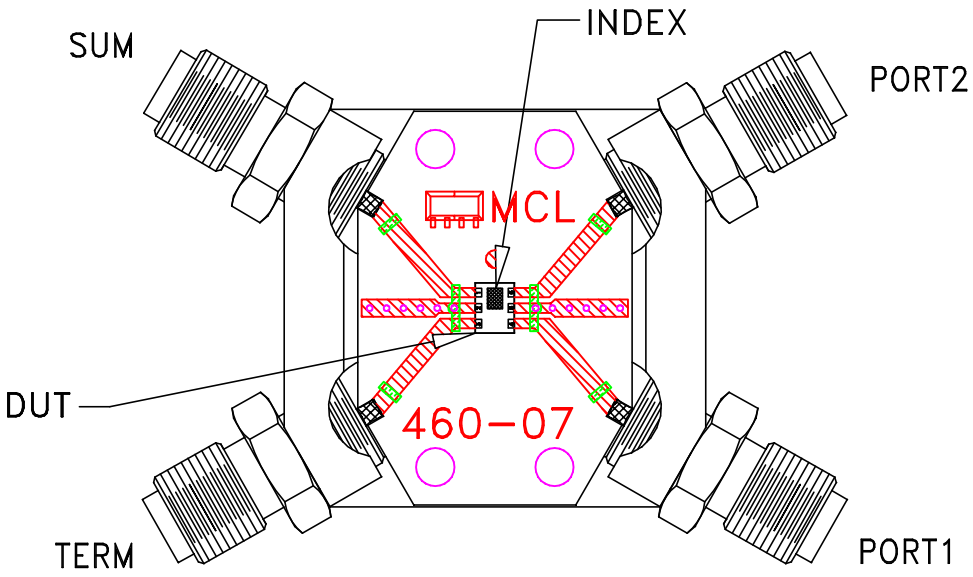
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, 06SQ07, JV1210C-1, TB-610+

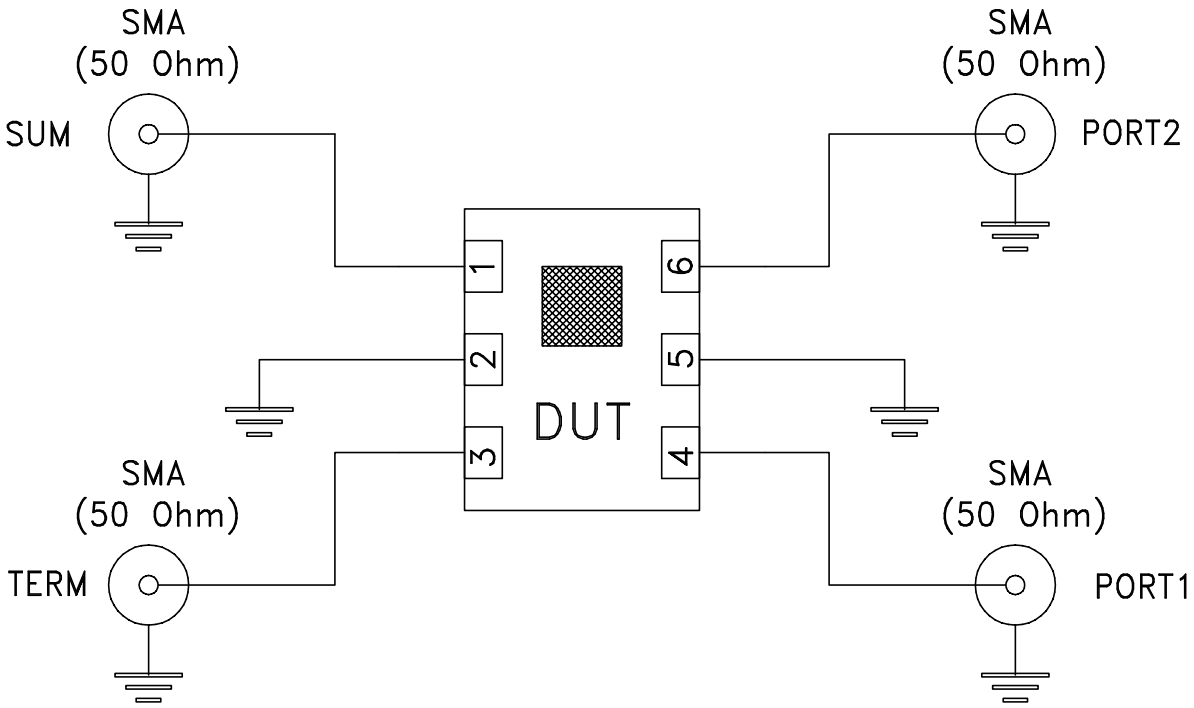
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-340	OR

FILE:	SCALE:	SHEET:
98PL340	10:1	1 OF 1

Evaluation Board and Circuit



TB-610+



Schematic Diagram

NOTES:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.020 inch.

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Environmental Specifications ENV06

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	-55° to 100°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
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, Para 4.2.5, Test S, 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