

Bi-Directional Coupler

LRDC-ED10249A/1

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 : QQQ569

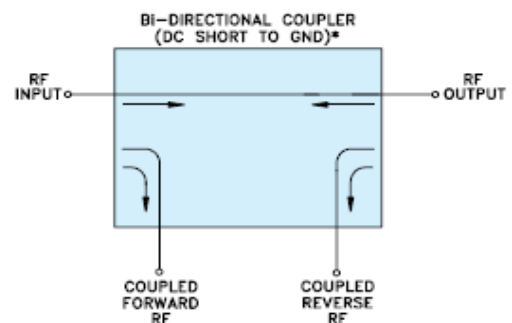
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		4		72 MHz
Coupling	Nominal		20.7 ± 0.5	dB
	Flatness		± 0.2	dB
Mainline Loss **	4-40 MHz		0.18	dB
	36-72 MHz		0.14	dB
Directivity	4-40 MHz		49	dB
	36-72 MHz		34	dB
VSWR	4-72 MHz		1.3	(:1)
RF Power Input	4-72 MHz			5 W

Note: ** Mainline loss includes theoretical coupled power loss of 0.037 dB at 20.7 dB coupling.

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

PIN CONNECTIONS	
INPUT	6
OUTPUT	1
COUPLED FORWARD	4
COUPLED REVERSE	3
GROUND	2, 5

Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

Directional Coupler

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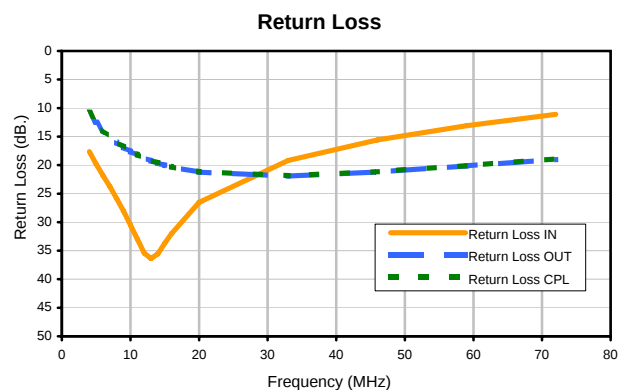
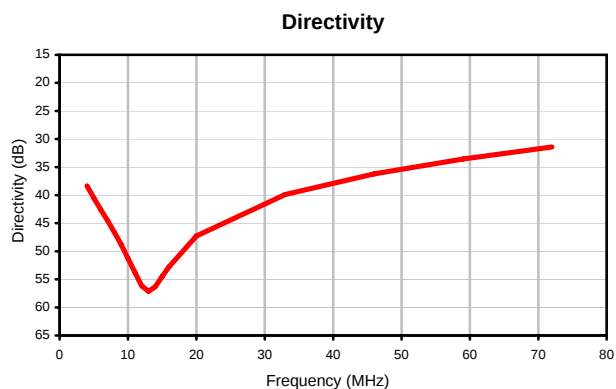
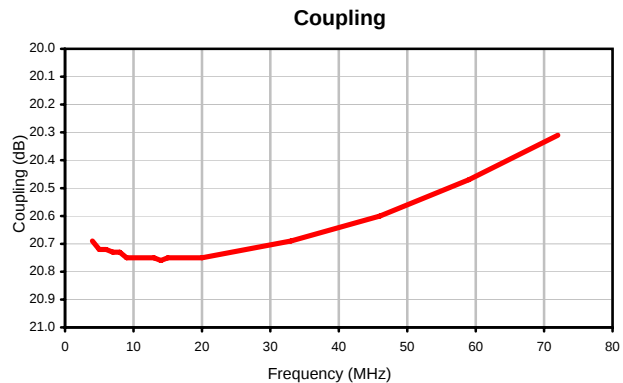
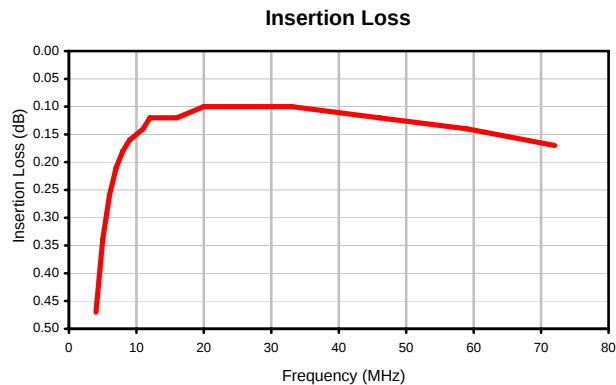
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS		
				IN	(dB) OUT	CPL
4.0	0.47	20.69	38.34	17.65	10.81	10.77
5.0	0.34	20.72	40.50	19.79	12.52	12.47
6.0	0.26	20.72	42.53	21.81	13.90	13.86
7.0	0.21	20.73	44.49	23.76	15.05	15.02
8.0	0.18	20.73	46.62	25.88	16.04	15.99
9.0	0.16	20.75	48.81	28.06	16.87	16.83
10.0	0.15	20.75	51.27	30.52	17.60	17.55
11.0	0.14	20.75	53.73	32.98	18.22	18.18
12.0	0.12	20.75	56.17	35.42	18.76	18.72
13.0	0.12	20.75	57.12	36.37	19.25	19.20
14.0	0.12	20.76	56.30	35.55	19.65	19.61
15.0	0.12	20.75	54.47	33.72	20.02	19.97
16.0	0.12	20.75	52.75	32.00	20.34	20.29
20.0	0.10	20.75	47.28	26.53	21.22	21.18
33.0	0.10	20.69	39.89	19.19	21.92	21.85
46.0	0.12	20.60	36.20	15.60	21.20	21.15
59.0	0.14	20.47	33.56	13.09	20.14	20.07
72.0	0.17	20.31	31.42	11.11	19.01	18.89

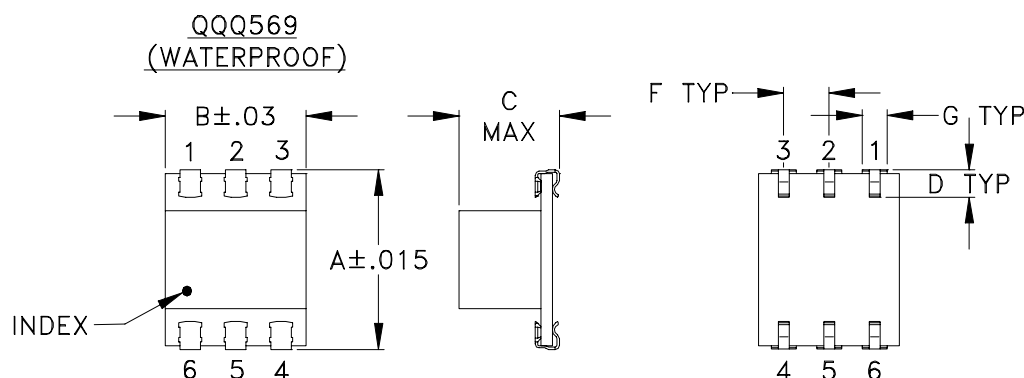
Directional Coupler

Typical Performance Curves

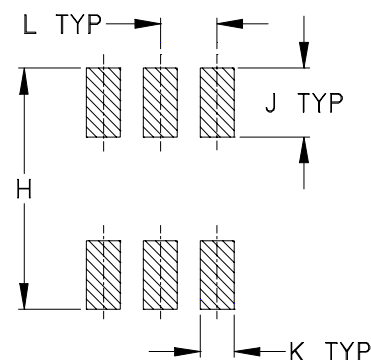
LRDC-ED10249A/1



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, GRAM
QQQ569	.390 (9.90)	.31 (7.87)	.225 (5.72)	.060 (1.52)	-	.100 (2.54)	.045 (1.14)	.420 (10.67)	.120 (3.05)	.060 (1.52)	.100 (2.54)	-	.50

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

Notes:

- Case material: Ceramic.
- Termination finish:
 - For RoHS Case Styles: Tin plate over Nickel plate.
 - For RoHS-5 Case Styles: Tin-Lead plate.

Tape & Reel Packaging TR-F5



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
32	16	13	500

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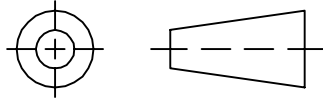
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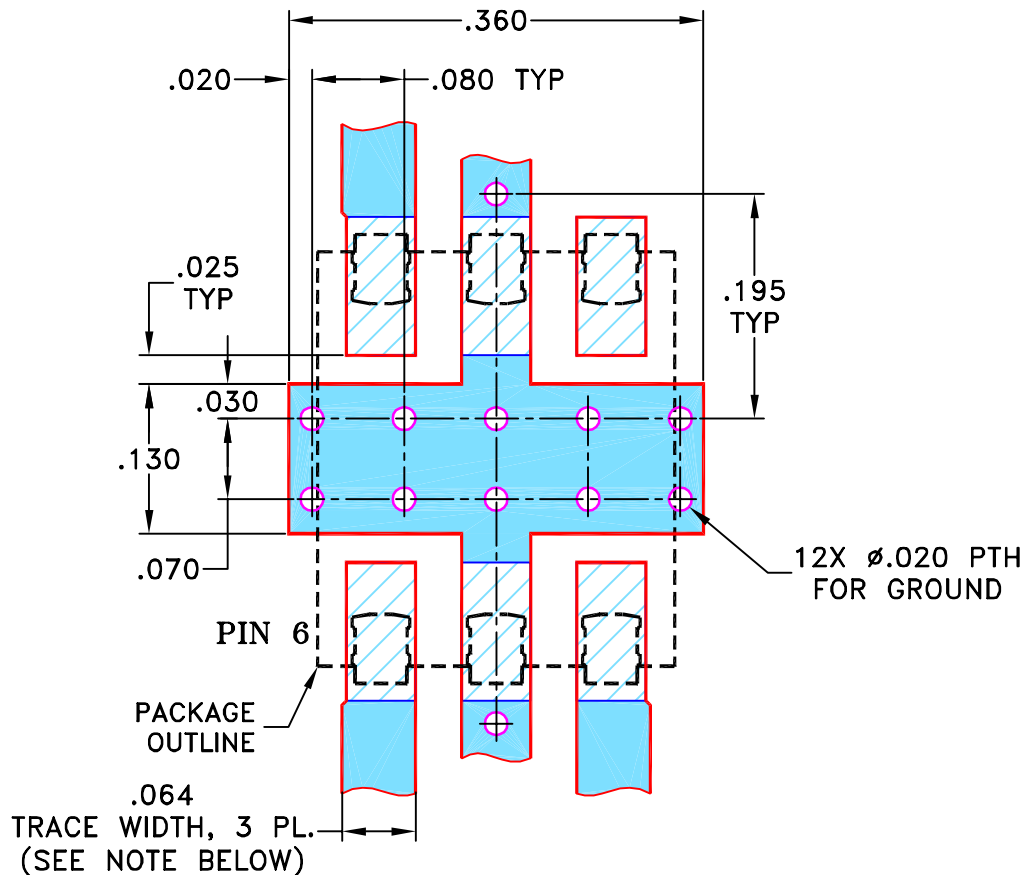
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M82272	NEW RELEASE	08/06/02	AV	DJ
A	M102713	UPDATED NOTES, ADDED "...WITH SMOBC"	01/16/06	GT	IL

SUGGESTED MOUNTING CONFIGURATION FOR QQQ569 CASE STYLE, "cz" PIN CONNECTION

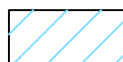


NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $0.030'' \pm 0.002''$. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

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

AV

07/23/02

TOLERANCES ON:

CHECKED

LC

08/06/02

2 PL DECIMALS $\pm$

APPROVED

DJ

08/06/02

3 PL DECIMALS $\pm$.005

ANGLES $\pm$

FRACTIONS $\pm$

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



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Brooklyn NY 11235

PL, cz, QQQ569, LRDC-J, TB-31

SIZE
A

CODE IDENT
15542

DRAWING NO:
98-PL-087

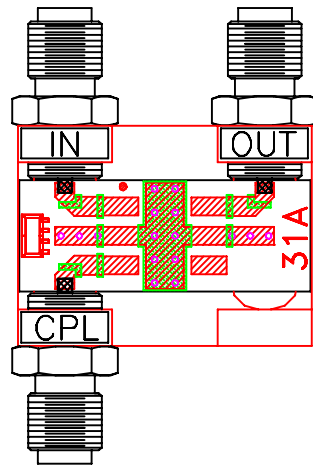
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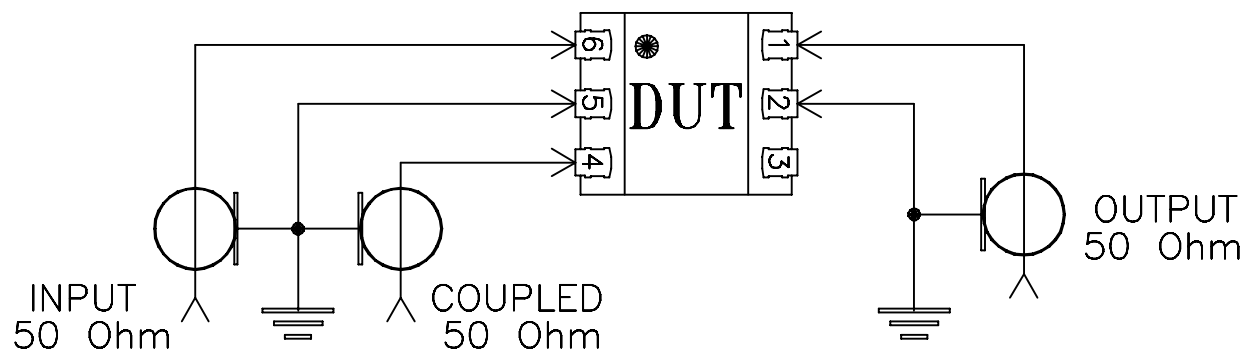
SCALE: 6:1

SHEET: 1 OF 1

Evaluation Board and Circuit



TB-31



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.030 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