

Ceramic Directional Coupler

50Ω 30 dB Coupling 700 to 2700 MHz

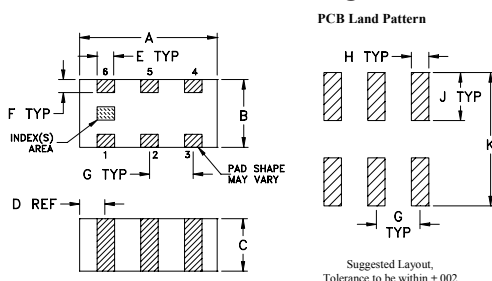
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Permanent damage may occur if any of these limits are exceeded.	

Pad Connections

INPUT	1
OUTPUT	6
COUPLED	3
TERMINATION	4
GROUND	2,5

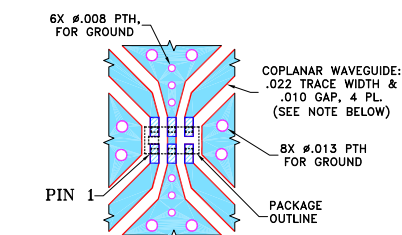
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F
.063	.031	.024	.012	.008	.006
1.60	0.79	0.61	0.30	0.20	0.15
G	H	J	K	wt	
.020	.010	.022	.053	grams	
0.51	0.25	0.56	1.35	0.005	

Demo Board MCL P/N: TB-794+ Suggested PCB Layout (PL-440)



- NOTES:
1. COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001", COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP 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.

Features

- Wideband, 700-2700 MHz
- Low insertion loss, 0.2 dB typ.
- Excellent return loss for input/output ports ideal for signal-tap
- Ultra small size, 0603 (1.6 x 0.8 mm)
- Temperature stable
- LTCC construction

Applications

- GSM • LTE
- SMR • Wi-Fi
- ISM • UMTS



Generic photo used for illustration purposes only

CASE STYLE: JC0603C

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 4000

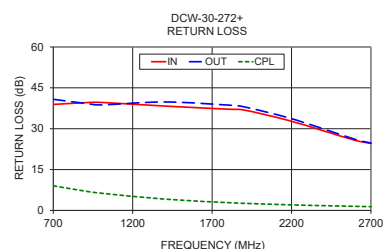
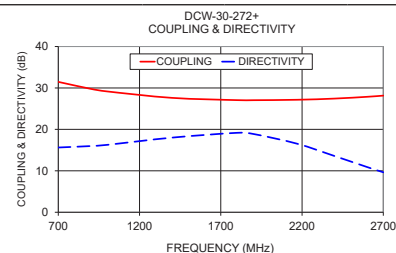
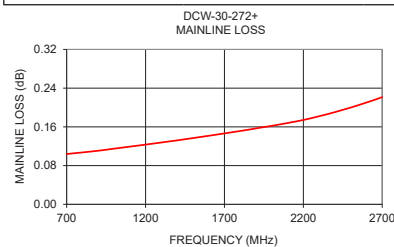
Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		700		2700	MHz
Mainline Loss	700-2700	—	0.2	0.5	dB
Coupling	700-1000 1000-2700	—	30±1.5 28±1.5	—	dB
Coupling Flatness(±)	700-1000 1000-2700	—	1.5 1.5	—	dB
Directivity	700-2170 2170-2700	10 —	14 8	—	dB
Return Loss (Input)	700-2700	15	23	—	dB
Return Loss (Output)	700-2700	15	23	—	dB
Input Power ¹	700-2700	—	2	—	W

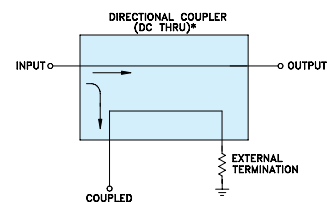
1. Derate linearly 1W at 100°C.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In	Return Loss (dB) Out	Cpl
700	0.10	31.46	15.63	38.90	40.79	9.02
900	0.11	29.78	15.98	39.56	39.29	7.08
1000	0.11	29.16	16.26	39.65	38.74	6.32
1400	0.13	27.60	18.01	38.31	39.82	4.14
1800	0.15	27.06	19.17	37.16	38.66	2.85
1900	0.16	27.04	18.89	36.87	38.05	2.60
2170	0.17	27.15	16.54	33.21	34.18	2.08
2400	0.19	27.43	13.57	29.23	29.95	1.74
2600	0.21	27.86	10.92	25.74	26.09	1.49
2700	0.22	28.15	9.64	24.61	24.73	1.37



Electrical Schematic



* ELECTRICAL SCHEMATIC FOR DIRECTIONAL COUPLERS REQUIRING EXTERNAL TERMINATION THAT IS DESIGNED WITHOUT INTERNAL TRANSFORMERS.

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
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