

Ceramic Directional Coupler

50Ω 11 dB Coupling 2400 to 7200 MHz

Maximum Ratings

Operating Temperature -55°C to 105°C

Storage Temperature -55°C to 105°C

Input Power¹ 1W

Permanent damage may occur if any of these limits are exceeded.

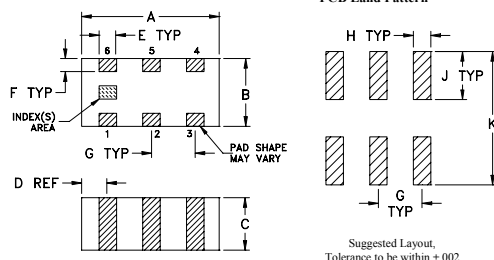
1. Derate linearly 0.5W at 0.5°C

Pad Connections

INPUT	1
OUTPUT	4
COUPLED	6
TERMINATION	3
GROUND	2.5

Outline Drawing

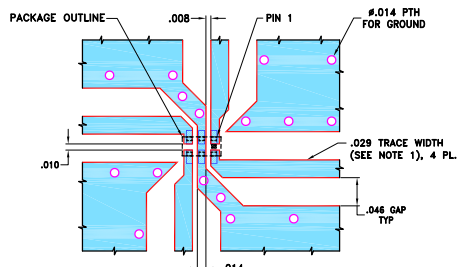
PCB Land Pattern



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-DCW-11-722+ Suggested PCB Layout (PL-572)



NOTES:

- TRACE WIDTH & GAP ARE SHOWN FOR FR4, GRADE IT-180TC (ITEQ CORP.) WITH DIELECTRIC THICKNESS .016±.0015, COPPER: 1/2 OZ EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
 - REFER TO MODEL DATASHEET FOR PIN OUTS.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

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-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Features

- Wideband, 2400-7200 MHz
- 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

- ISM
- UMTS
- WiMAX
- PCS
- Wi-Fi
- LTE



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

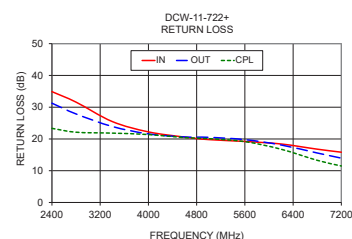
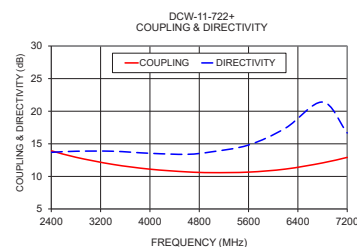
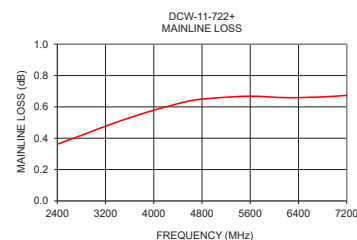
Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 4000

Electrical Specifications at 25°C

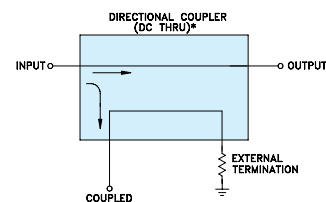
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		2400		7200	MHz
Mainline Loss	2400-7200	—	0.7	2.2	dB
Midband Coupling	2400-7200	—	11	—	dB
Coupling Flatness(±)	2400-7200	—	2.5	—	dB
Directivity	2400-7200	—	12	—	dB
Return Loss (Input)	2400-7200	9.5	17	—	dB
Return Loss (Output)	2400-7200	9.5	17	—	dB

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
2400	0.36	13.93	13.69	34.89	31.26	23.33
2800	0.42	12.93	13.86	31.59	27.87	22.12
3400	0.50	11.84	13.86	25.48	23.92	21.83
4000	0.58	11.11	13.54	22.22	21.59	21.39
4600	0.64	10.69	13.39	20.58	20.63	20.42
5000	0.66	10.58	13.77	19.80	20.51	20.09
5600	0.67	10.66	14.81	19.22	19.79	19.16
6200	0.66	11.12	17.41	18.42	18.10	16.77
6800	0.66	12.07	21.40	16.78	15.58	13.28
7200	0.67	12.92	16.67	15.83	13.96	11.49



Electrical Schematic



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



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