

# LTCC Coupler

50Ω 2400 to 2500 MHz 10dB Coupling

## CPJC-10-252R+



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

### Maximum Ratings

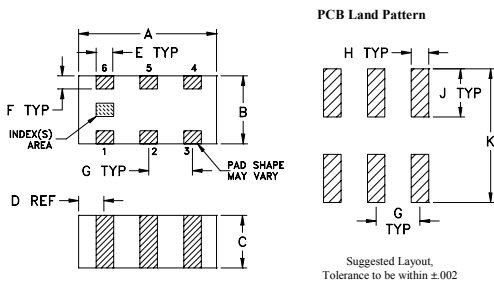
Operating Temperature	-40°C to 85°C
Storage Temperature*	-40°C to 85°C

\*Refer to product storage temperature after installation.  
Suggestion for T&R unused product storage condition: +5--+35°C, Humidity 45-75%RH, 12 Month max.  
Permanent damage may occur if any of these limits are exceeded.

### Pad Connections

Input	1
GND	2
Coupled	3
Termination	4
GND	5
Output	6

### Outline Drawing



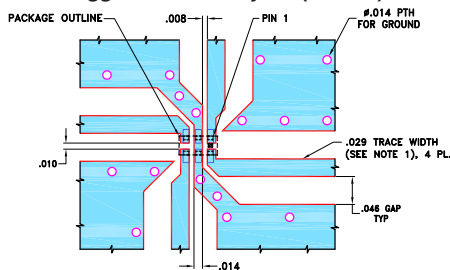
### Outline Dimensions (inch/mm)

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

### Evaluation Board MCL P/N: TB-1031-10+ 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

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuit's 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-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

### Features

- miniature size 0603
- low cost
- aqueous washable

### Applications

- ISM Band
- WLAN
- Bluetooth
- Zigbee

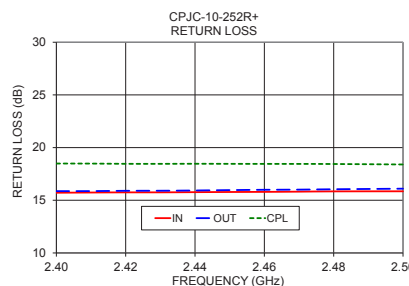
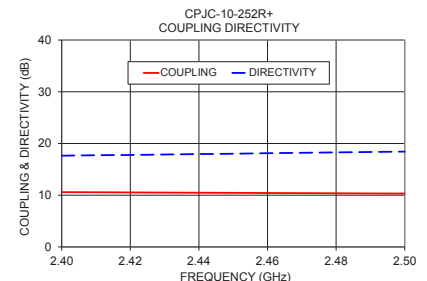
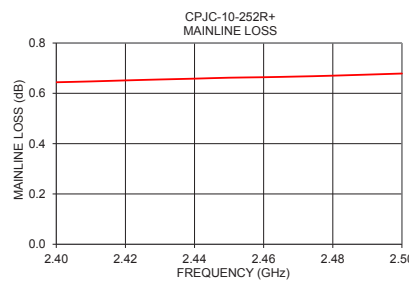
### Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		2400		2500	MHz
Mainline Loss	2400 - 2500	—	0.65	1.0	dB
Coupling	2400 - 2500	—	10±1.0	—	dB
Directivity	2400 - 2500	11	19	—	dB
Return Loss (Input)	2400 - 2500	10.8	17	—	dB
Return Loss (Output)	2400 - 2500	10.8	17	—	dB
Input Power <sup>1</sup>	2400 - 2500	—	—	2	W

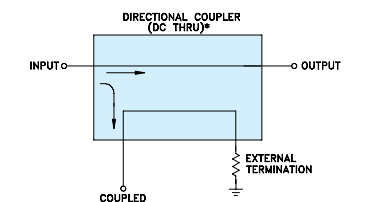
1. Derate linearly to 1W at 85°C.

### Typical Performance Data

Frequency (GHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
2.40	0.64	10.60	17.64	15.72	15.87	18.49
2.41	0.65	10.57	17.73	15.74	15.87	18.48
2.42	0.65	10.54	17.78	15.75	15.90	18.46
2.43	0.66	10.51	17.87	15.75	15.91	18.46
2.44	0.66	10.49	17.96	15.77	15.93	18.47
2.45	0.66	10.46	18.02	15.79	15.97	18.46
2.46	0.66	10.43	18.13	15.80	16.00	18.45
2.47	0.67	10.40	18.20	15.82	16.01	18.45
2.48	0.67	10.38	18.28	15.84	16.05	18.44
2.49	0.68	10.35	18.36	15.84	16.07	18.43
2.50	0.68	10.32	18.43	15.85	16.10	18.40



### Electrical Schematic



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

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