LTCC Coupler

CPJC-21-252R+

50Ω 2400 to 2500 MHz 21dB Coupling



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	-55°C to 100°C
Storage Temperature*	-55°C to 100°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 Out	3
Termination	4
GND	5
Main Out	6

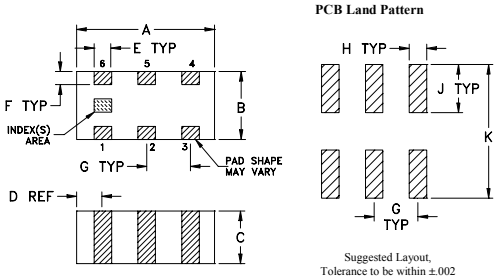
Features

- miniature size 0603 (0.063"[1.6mm]) x 0.031"[0.8mm] x 0.024"[0.6mm])
- low cost
- aqueous washable

Applications

- ISM Band
- WLAN
- Bluetooth
- Zigbee

Outline Drawing

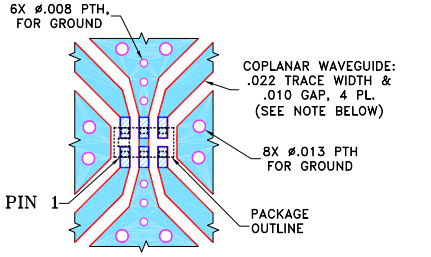


Outline Dimensions (inch / mm)

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-CPJC21-252R+
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.

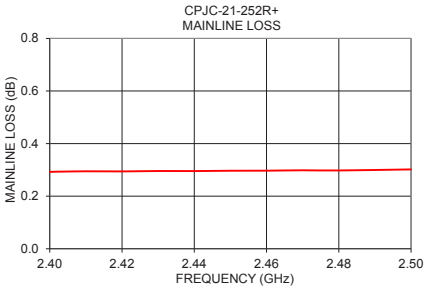
Electrical Specifications at 25°C

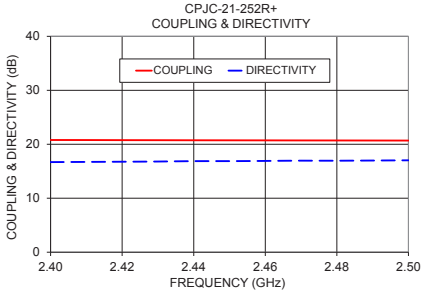
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		2400		2500	MHz
Mainline Loss	2400 - 2500	—	0.3	0.4	dB
Coupling	2400 - 2500	19.5	21	22.5	dB
Directivity	2400 - 2500	12.5	19	—	dB
Return Loss (Input)	2400 - 2500	14.7	26	—	dB
Return Loss (Output)	2400 - 2500	14.7	27	—	dB
Input Power[1]	2400 - 2500	—	—	2	W

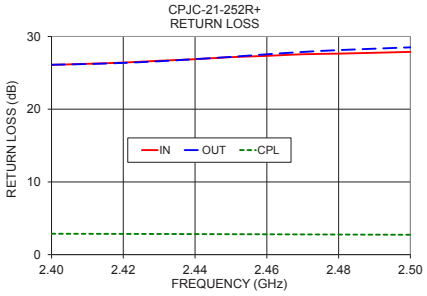
1. Derate linearly to 1W at 100°C

Typical Performance Data

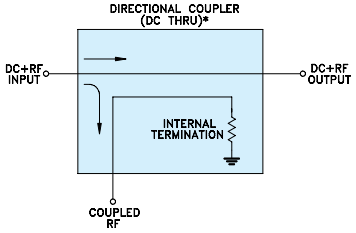
Frequency (GHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In	Return Loss (dB) Out	Return Loss (dB) Cpl
2.40	0.29	20.79	16.70	26.10	26.11	2.87
2.41	0.29	20.78	16.73	26.24	26.21	2.86
2.42	0.29	20.77	16.77	26.41	26.37	2.85
2.43	0.30	20.76	16.80	26.66	26.59	2.84
2.44	0.30	20.74	16.88	26.87	26.89	2.83
2.45	0.30	20.73	16.88	27.16	27.19	2.81
2.46	0.30	20.72	16.91	27.33	27.55	2.80
2.47	0.30	20.71	16.96	27.56	27.87	2.78
2.48	0.30	20.71	16.95	27.64	28.13	2.76
2.49	0.30	20.70	16.99	27.77	28.33	2.75
2.50	0.30	20.69	17.03	27.88	28.51	2.73







Electrical Schematic



* ELECTRICAL SCHEMATIC FOR DIRECTIONAL COUPLER 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-Circuit's applicable established test performance criteria and measurement instructions.
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