

# Ceramic Diplexer

## LDPW-162-242+

50Ω DC to 6000 MHz (DC-1650, 2400-6000 MHz)



CASE STYLE: JC0603C

### Maximum Ratings

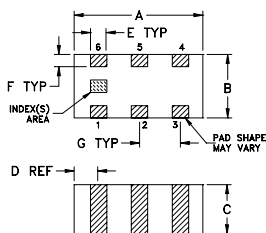
Operating Temperature	-55°C to 100°C
Storage Temperature*	-55°C to 100°C
RF Power Input**	2W at 25°C

\* 12 months max.  
\*\* passband rating, derate linearly to 1W at 100°C ambient.  
Permanent damage may occur if any of these limits are exceeded.

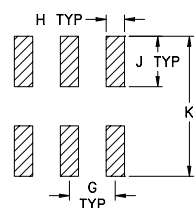
### Pad Connections

Low Pass Port	6
High Pass Port	4
Common Port	2
Ground	1,3,5

### Outline Drawing



### PCB Land Pattern

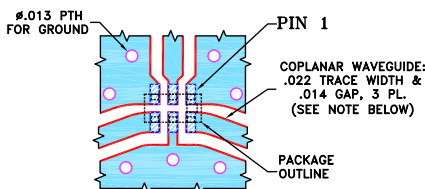


Suggested Layout,  
Tolerance to be within ±0.02

### 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-796+ Suggested PCB Layout (PL-428)



### NOTES:

- 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.
  - 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.

### 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

- small size 0603 (1.6 x 0.8 mm)
- low insertion loss, 0.6 dB typ.
- high rejection
- temperature stable
- LTCC construction

### Applications

- communication systems
- cellular
- GPS
- WCDMA

### +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<sup>1,2</sup> at 25°C

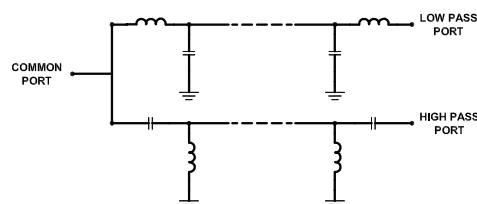
Parameter	Port	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	Low Pass	DC - 1650	—	0.6	0.9	dB
		High Pass	2400 - 2500 4900 - 6000	—	0.6 0.3	1.3 0.8	
	Return Loss	Low Pass	DC - 1650	10	20	—	dB
		High Pass	2400 - 2500 4900 - 6000	10	23 16	—	
Stop Band Isolation	High Pass	DC - 200	—	25	—	dB	
		200 - 1400	—	15	—		
Stop Band Isolation	Low Pass	1400 - 1650	—	20	—	dB	
		2500 - 6000	—	20	—		

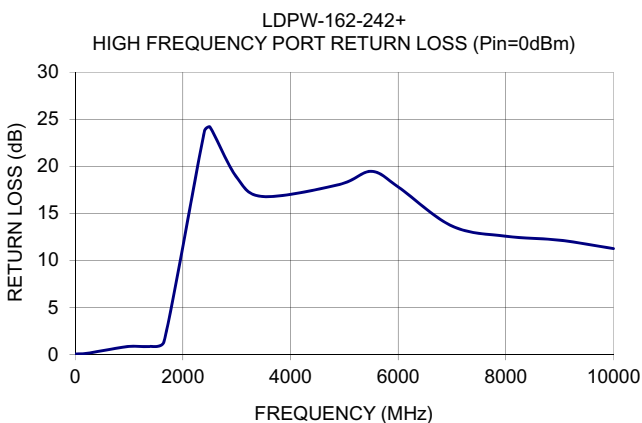
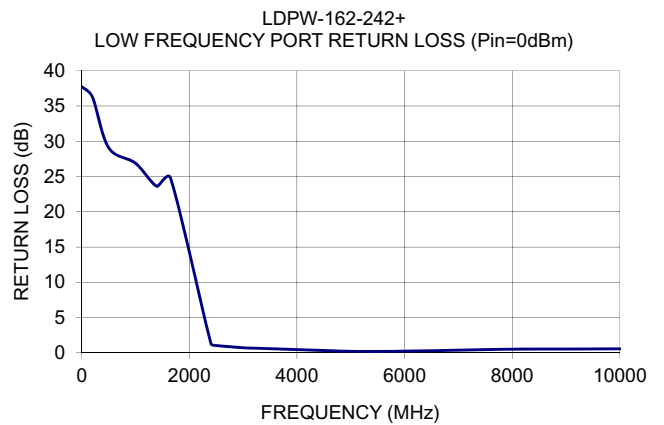
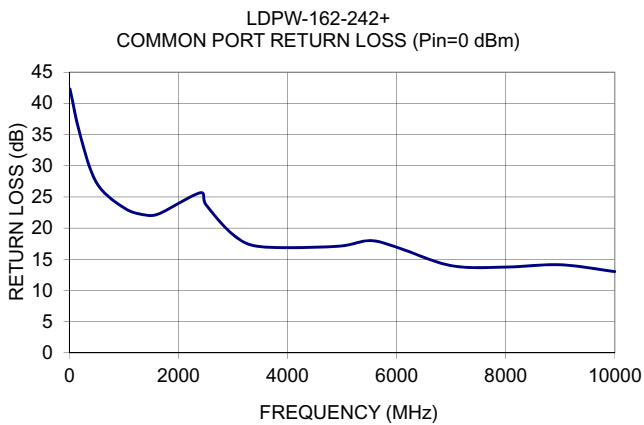
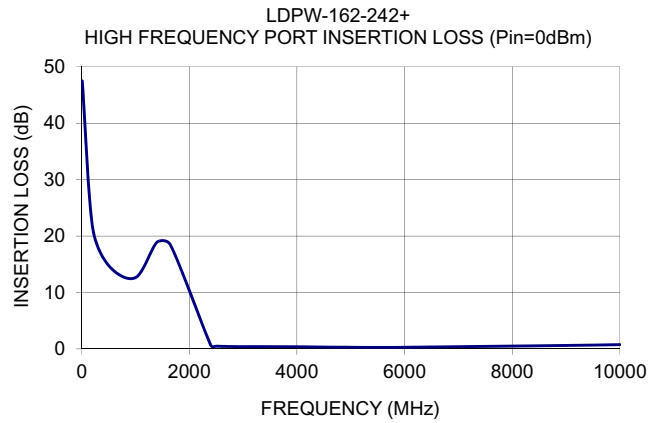
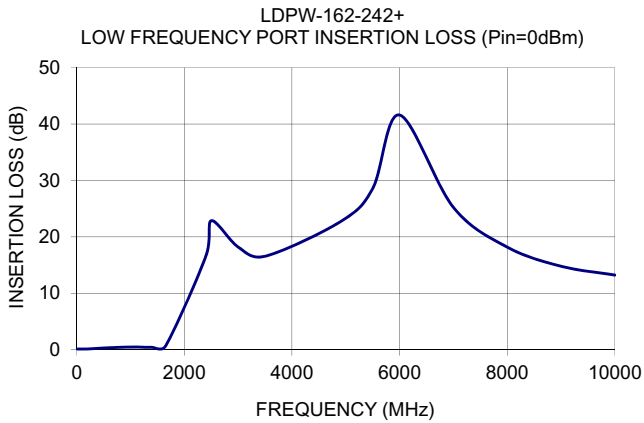
- In Application where DC voltage is present at either input or output port, coupling capacitors are required.
- Measured on Mini-Circuits Characterization Test Board TB-796+

### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)		Return Loss (dB)		
	Low Pass Port	High Pass Port	Common Port	Low Pass Port	High Pass Port
10	0.13	47.51	42.31	37.69	0.04
200	0.14	21.72	34.81	36.27	0.09
500	0.30	14.79	27.23	29.10	0.38
1000	0.48	12.64	23.25	26.89	0.84
1400	0.43	18.92	22.09	23.60	0.84
1650	0.63	18.42	22.33	24.79	1.38
2400	16.56	0.63	25.67	1.37	23.73
2500	22.87	0.49	23.79	1.06	24.19
3000	18.21	0.40	18.95	0.73	18.81
3500	16.56	0.41	17.03	0.60	16.78
4900	22.69	0.30	17.07	0.23	18.05
5500	28.56	0.26	18.00	0.20	19.46
6000	41.60	0.28	16.94	0.24	17.80
7000	25.23	0.39	13.98	0.39	13.64
8000	18.18	0.49	13.75	0.52	12.56
9000	14.80	0.61	14.12	0.55	12.14
10000	13.22	0.76	13.03	0.58	11.24

### Functional Schematic





**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](http://www.minicircuits.com/MCLStore/terms.jsp)

