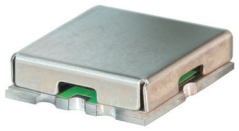
Metal Shield

Low Pass Filter

RLP-176+

50Ω DC to 176 MHz



CASE STYLE: GP731

+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"	10, 20, 50, 100, 200
13"	500,1000

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5W Max

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

Pin Connections

RF IN	2
RF OUT	6
GROUND	1, 3, 4, 5, 7, 8

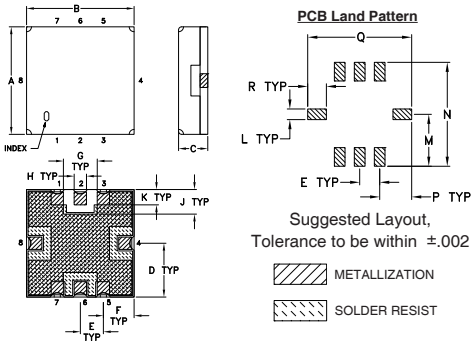
Features

- high rejection
- sharp insertion loss roll off
- excellent VSWR, 1.1:1 typ.@ passband
- aqueous washable

Applications

- wireless communications
- receivers / transmitters

Outline Drawing



Outline Dimensions (inch / mm)

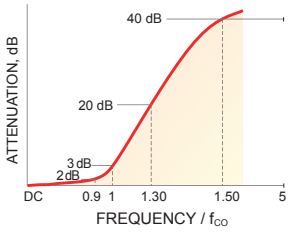
A	B	C	D	E	F	G	H	J
.350	.350	.100	.175	.075	.100	.110	.040	.080
8.89	8.89	2.54	4.45	1.93	2.54	2.79	1.02	2.03

K	L	M	N	P	Q	R	wt.
.050	.040	.195	.390	.120	.390	.070	grams
1.27	1.02	4.95	9.91	3.05	9.91	1.78	0.25

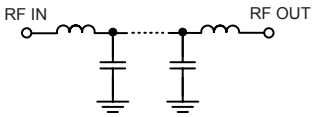
Low Pass Filter Electrical Specifications (T_{AMB} = 25°C)

PASSBAND (MHz)	fco, MHz Nom.	STOPBAND (MHz)		VSWR (:1)	
(Loss < 2dB)	(Loss 3dB)	(Loss > 20dB)	(Loss > 40dB)	Passband Typ.	Stopband Typ.
DC - 176	191	245 - 285	285 - 1000	1.1	20

Typical Frequency Response



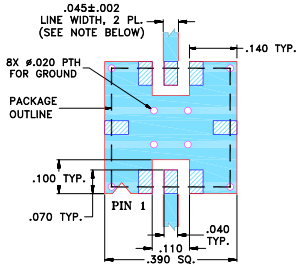
Functional Schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB) x̄	Insertion Loss (dB) σ	Return Loss (dB)	Frequency (MHz)	Group Delay (nSec)
0.5	0.08	0.01	39.59	2.0	4.36
50.0	0.30	0.01	22.96	5.0	3.96
100.0	0.48	0.01	24.93	10.0	3.99
150.0	0.78	0.01	36.17	20.0	4.01
176.0	1.23	0.02	21.44	30.0	3.95
185.0	1.97	0.06	11.39	40.0	3.98
188.0	2.47	0.09	8.93	60.0	4.08
191.0	3.19	0.12	6.89	70.0	4.26
200.0	6.60	0.19	3.06	80.0	4.33
206.0	9.64	0.21	1.89	90.0	4.47
225.0	19.92	0.19	0.77	100.0	4.65
245.0	29.97	0.18	0.55	110.0	4.82
255.0	34.74	0.17	0.48	130.0	5.35
285.0	49.18	0.26	0.38	140.0	5.79
300.0	57.36	0.55	0.33	150.0	6.29
500.0	76.65	8.71	0.13	160.0	7.08
900.0	77.53	6.17	0.14	176.0	9.25
1000.0	74.82	4.14	0.14	180.0	10.17

Demo Board MCL P/N: TB-332
Suggested PCB Layout (PL-176)

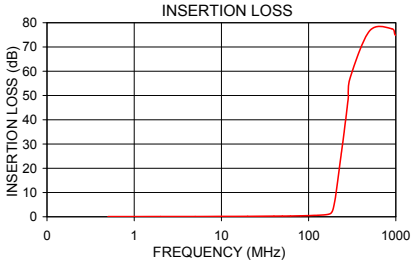


NOTES:
1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .025" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

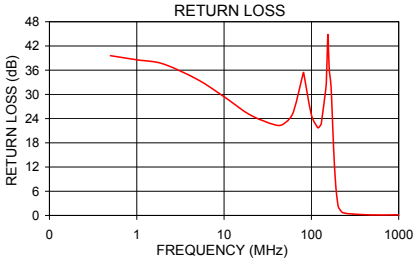
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

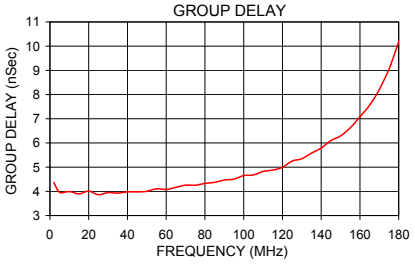
RLP-176+
INSERTION LOSS



RLP-176+
RETURN LOSS



RLP-176+
GROUP DELAY



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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