

# Surface Mount Bandpass Filter

## TBP-154+

50Ω      136 to 175 MHz



Generic photo used for illustration purposes only  
CASE STYLE: GQ1018

### The Big Deal

- Small size (0.25" x 0.25" x 0.10")
- High rejection
- Flat group delay, 17 ns typical
- Broad band filter (fractional bandwidth of 25%)
- Miniature shielded package

### Product Overview

The TBP-154+ is a broad-band bandpass filter in a shielded package (size of 0.25" x 0.25" x .10") fabricated using SMT technology. These units offer good matching within the passband and high rejection. In addition it has repeatable performance across production lots and consistent performance across temperature.

### Key Features

Feature	Advantages
Sharp shape factor	Sharp shape factor helps in adjacent rejection and increased selectivity.
High rejection	Achieving 70dB rejection at 700MHz; the TBP-154+ provides a versatile anti aliasing solution for high data rate receivers.
Flat group delay characteristics	The model has a group delay flatness of 17 ns which helps in reducing the signal distortion.
Shielded case	Reduced interference with the surrounding components.

#### Notes

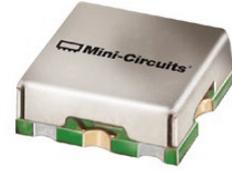
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### Features

- High rejection
- Flat group delay, 17 ns typical over passband
- Small size 0.25" x 0.25" x 0.10"
- Aqueous washable
- Miniature shielded package

### Applications

- Harmonic rejection
- Transmitters / Receivers
- Public safety radio

### Electrical Specifications at 25°C

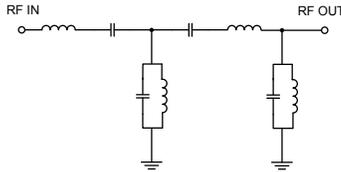
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	—	—	154	—	MHz	
	Insertion Loss	F1-F2	136-175	—	3.2	4.0	dB
	VSWR	F1-F2	136-175	—	1.8	2.5	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-108	20	28	—	dB
	VSWR	DC-F3	DC-108	—	37	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	220-3000	20	27	—	dB
	VSWR	F4-F5	220-3000	—	11	—	:1

### Maximum Ratings

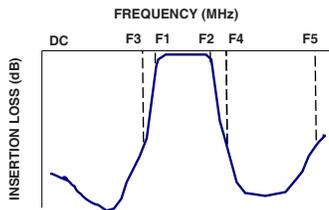
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	100mW max.

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

### Functional Schematic



### Typical Frequency Response

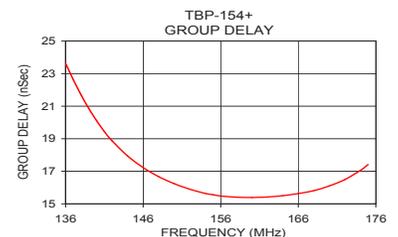
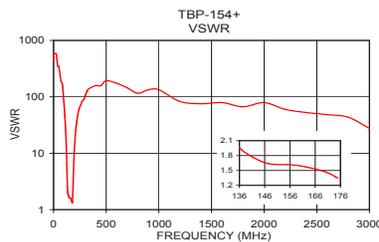
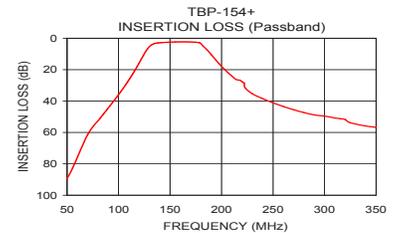
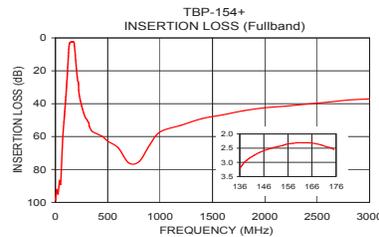


### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
0.5	96.94	434.30	136	23.63
40.0	86.62	347.44	137	22.62
85.0	48.57	157.93	138	21.69
108.0	28.55	43.44	140	20.11
120.0	15.75	15.00	141	19.44
126.0	8.83	6.21	142	18.87
130.0	5.32	3.24	146	17.23
136.0	3.22	1.96	150	16.24
154.0	2.40	1.62	152	15.90
156.0	2.35	1.62	154	15.64
175.0	2.55	1.34	156	15.48
179.0	2.96	1.35	158	15.41
186.0	7.45	2.79	160	15.39
190.0	10.45	4.86	162	15.42
194.0	13.53	7.97	164	15.50
220.0	27.71	35.46	166	15.63
320.0	51.79	124.09	168	15.81
500.0	62.76	193.02	172	16.49
1000.0	57.17	133.63	174	17.05
3000.0	37.09	27.59	175	17.41

### +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



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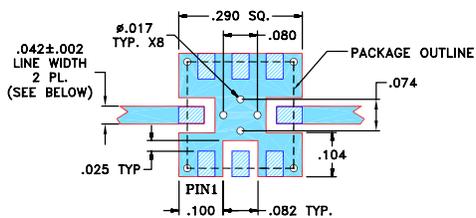
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REV. A  
M174392  
TBP-154+  
EDR-8859/1U  
RAV/URJ/1U  
190917  
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## Pad Connections

INPUT	4
OUTPUT	8
NOT CONNECTED	2
GROUND	1,3,5,6,7

**Demo Board MCL P/N: TB-540+**  
**Suggested PCB Layout (PL-310)**

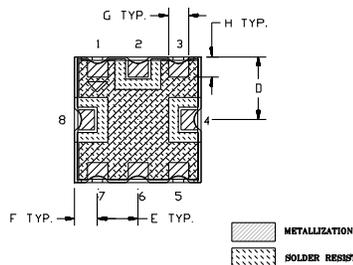
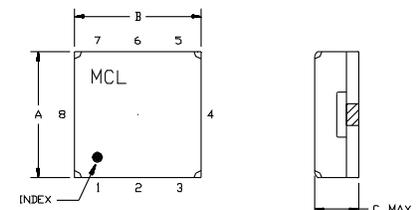


### NOTES:

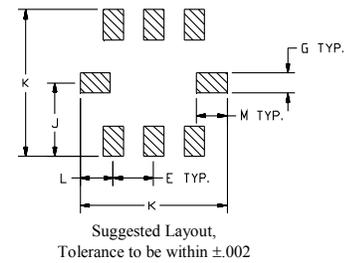
- TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .020"±.002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

## Outline Drawing



## PCB Land Pattern



## Outline Dimensions (inch)

A	B	C	D	E	F	G
.25	.25	.10	.065	.080	.045	.040
6.35	6.35	2.54	1.65	2.03	1.14	1.02
H	J	K	L	M	wt	
.040	.145	.290	.065	.060	grams	
1.02	3.68	7.37	1.65	1.52	0.25	

*Note: Please refer to case style drawing for details*

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