

# Surface Mount Bandpass Filter

## BPF-BC300+

50Ω 290 to 310 MHz



Generic photo used for illustration purposes only

CASE STYLE: TS2825

### The Big Deal

- Narrow bandwidth
- High Rejection
- Miniature shielded package

### Product Overview

BPF-BC300+ is a 50Ω bandpass filter in a shielded package fabricated using SMT technology. This bandpass filter covers from 290 to 310 MHz. This filter build with high Q capacitors and wire welded inductors for high reliability. This filter offers sharp rejection and low insertion loss for use in Test and measurement system applications.

### Key Features

Feature	Advantages
Low insertion loss	Can be used in Transmitters/Receivers application
Good rejection	This enables the filter attenuate spurious signals and reject harmonics for broad frequency band
Shielded package	The small surface mount package enables the BPF-BC300+ to used in compact design

#### 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)



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### Features

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- Miniature shielded package

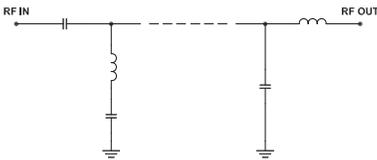
### Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	—	—	300	—	MHz	
	Insertion Loss	F1-F2	290 - 310	—	2.2	3.0	dB
	VSWR	F1-F2	290 - 310	—	1.4	1.57	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 240	40	50	—	dB
	VSWR	DC-F3	DC - 240	—	20	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	350 - 1000	40	45	—	dB
		F5-F6	1000 - 3000	30	40	—	dB
		F6-F7	3000 - 4000	20	25	—	dB
	VSWR	F4-F7	350 - 4000	—	20	—	:1

### Applications

- Test and measurement
- Harmonic rejection
- Transmitters / Receivers

### Functional Schematic



### Maximum Ratings

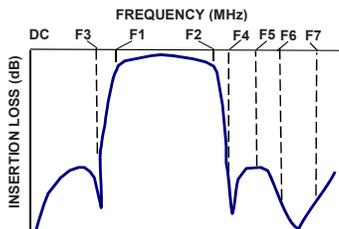
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5 W

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

### Typical Performance Data at 25°C

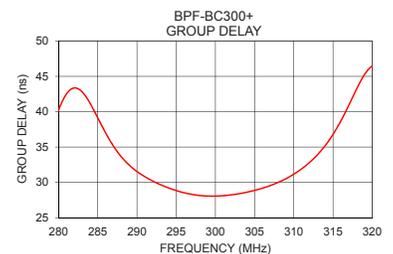
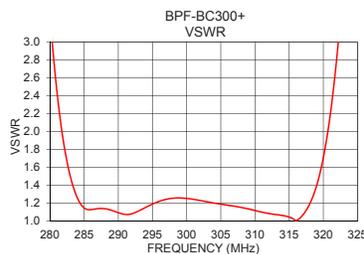
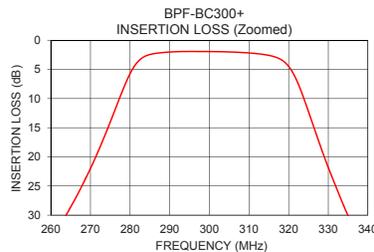
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	106.97	353.00	290	31.52
10	96.68	347.32	291	30.80
100	83.47	183.51	292	30.19
240	50.46	68.80	293	29.67
264	29.82	35.32	294	29.22
270	22.00	23.10	295	28.85
282	3.65	1.88	296	28.53
290	2.02	1.09	297	28.30
300	1.95	1.25	298	28.14
310	2.18	1.12	299	28.07
318	3.29	1.19	300	28.06
325	12.24	6.08	301	28.11
335	30.14	21.35	302	28.23
350	48.25	41.49	303	28.39
500	68.44	98.08	304	28.60
1000	65.53	154.18	305	28.86
1650	44.89	118.38	306	29.17
1700	56.67	275.53	307	29.54
3000	64.64	149.24	308	29.99
4000	51.06	73.35	310	31.16

### Typical Frequency Response



### +RoHS Compliant

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



### Notes

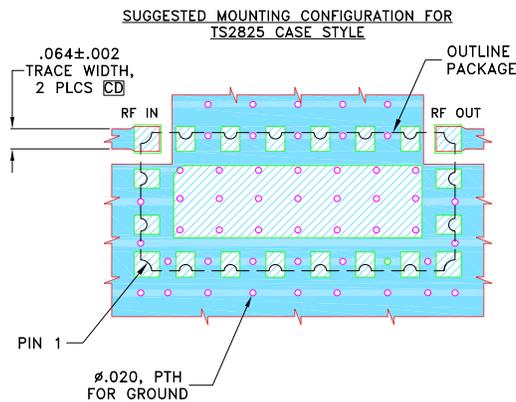
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## Pad Connections

INPUT	18
OUTPUT	11
GROUND	1-10, 12-17, 19, 20

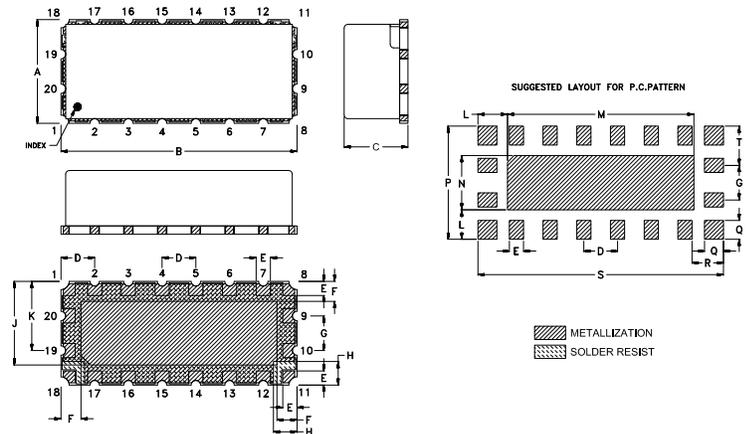
## Demo Board MCL P/N: TB-1097+ Suggested PCB Layout (PL-639)



### NOTES:

- TRACE WIDTH IS SHOWN FOR ROGERS (RO4350B) WITH DIELECTRIC THICKNESS .030"±.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



## Outline Dimensions (inch)

A	B	C	D	E	F	G	H	J	K
.440	1.000	.270	.143	.060	.085	.147	.100	.355	.293
11.18	25.40	6.86	3.63	1.52	2.16	3.73	2.54	9.02	7.45
L	M	N	P	Q	R	S	T	Wt.	
.125	.790	.230	.480	.080	0.133	1.040	.167	grams	
3.18	20.07	5.84	12.19	2.03	3.37	26.42	4.23	2	

Note: Please refer to case style drawing for details

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