Surface Mount

Bandpass Filter

BPF-C45+

50Ω 30 to 70 MHz



CASE STYLE: HU1186

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

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

INPUT	2
OUTPUT	9
NOT CONNECTED	6,13
GROUND	1,3,4,5,7,8,10,11,12,14

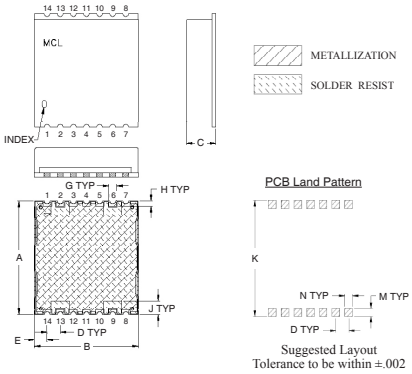
Features

- High Rejection
- Good VSWR, 1.2:1 Typ @ Passband
- Shielded case
- Aqueous washable

Applications

- Military communications
- Receivers / Transmitters
- Harmonic rejection

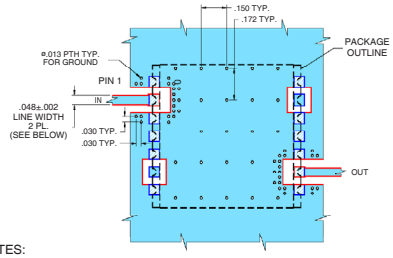
Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	G	H	J	K	M	N	wt.
.870	.800	.25	.100	.097	.060	.040	.105	.910	.060	.060	grams
22.10	20.32	6.35	2.54	2.46	1.52	1.02	2.67	23.11	1.52	1.52	2.85

Demo Board MCL P/N: TB-500+
Suggested PCB Layout (PL-294)



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B, DIELECTRIC THICKNESS: .030"± .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.

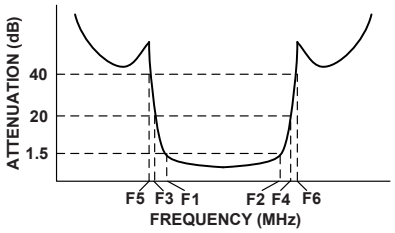
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

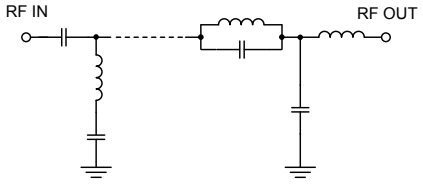
Bandpass Filter Electrical Specifications (T_{AMB}= 25°C)

CENTER FREQ. (MHz)	PASSBAND (MHz) (Loss < 1.5dB)	STOPBANDS (MHz)				VSWR (:1)		
		Loss > 20dB		Loss > 40dB		Passband		Stopband
Fc	F1 - F2	F3	F4	F5	F6	Typ.	Max.	Typ.
45	30 - 70	23	95	21	120 - 2500	1.2	1.5	18

Typical Frequency Response



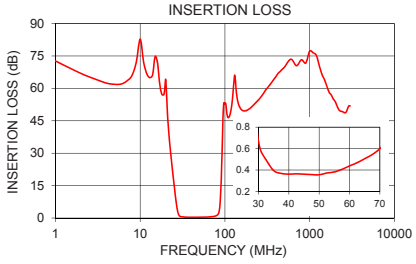
Functional Schematic



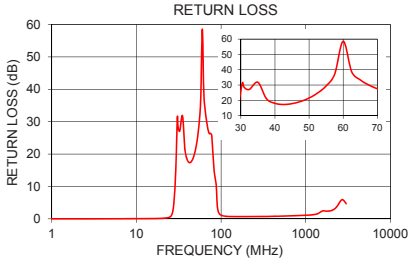
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB) x̄	Insertion Loss (dB) σ	Return Loss (dB)	Frequency (MHz)	Group Delay (nSec)
0.5	78.80	1.42	0.01	30.0	76.63
5.0	61.88	0.25	0.01	30.5	68.58
23.0	29.29	1.18	0.30	31.0	62.06
26.0	10.40	1.15	1.10	35.0	38.15
27.0	5.46	1.00	2.59	37.5	31.64
29.0	1.02	0.21	13.59	40.0	27.53
30.0	0.67	0.05	26.03	42.5	24.63
40.0	0.36	0.03	18.08	45.0	22.83
45.0	0.36	0.03	17.85	47.5	21.42
60.0	0.44	0.03	58.55	50.0	20.68
70.0	0.60	0.02	27.63	52.5	19.99
80.0	1.18	0.13	20.42	55.0	19.62
87.5	6.28	4.17	10.47	57.5	19.36
90.0	15.44	6.96	4.33	60.0	19.46
95.0	47.02	8.60	1.62	62.5	19.74
120.0	51.78	3.04	0.74	65.0	20.27
500.0	69.64	3.27	0.82	67.5	21.00
2500.0	49.02	1.51	4.97	70.0	22.16

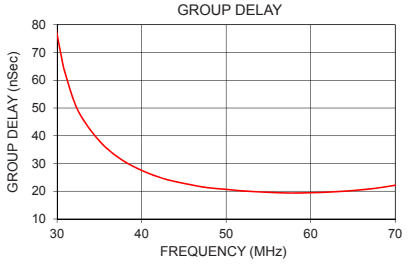
BPF-C45+
INSERTION LOSS



BPF-C45+
RETURN LOSS



BPF-C45+
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.
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