

LTCC

Bandpass Filter

50Ω 4900 to 5950 MHz

BPNK-542R+



Generic photo used for illustration purposes only

CASE STYLE: NK0402C-1

+RoHS Compliant

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

Features

- Miniature size 0402 (0.039"[1.0mm] x 0.020"[0.5mm] x 0.015"[0.37mm])
- Low Insertion Loss, 1.3 dB typ.
- Low cost
- Aqueous washable

Applications

- ISM Band
- WLAN
- Bluetooth
- Zigbee

Electrical Specifications at 25°C

Parameter		Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	5425	—	MHz
	Insertion Loss	4900 – 5950	—	1.3	1.6	dB
	Return Loss	4900 – 5950	10	14	—	dB
Stop Band, Lower	Rejection	2400 – 2500	—	23	—	dB
Stop Band, Upper	Rejection	9800 - 11900	—	32	—	dB
		14700 - 17850	—	38	—	dB

* Tested on Evaluation Board TB-1039+

Maximum Ratings

Operating Temperature	-40°C to +85°C
Storage Temperature*	-40°C to +85°C
RF Power Input**	3W at 25°C

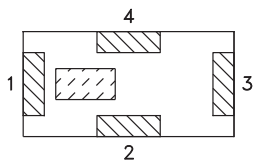
*Refer to product storage temperature after installation
Suggestion for T&R unused product storage condition:
+5 ~ +35 °C, Humidity 45-75%RH, 12 month Max

** Derate linearly to 1.5W at 85°C.

Block Diagram



Top View

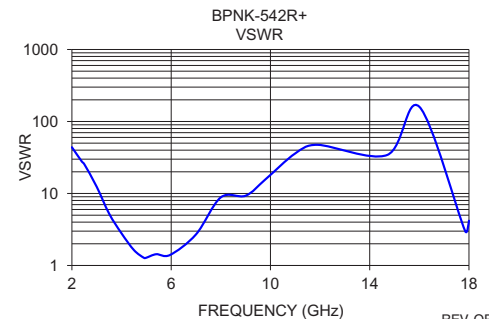
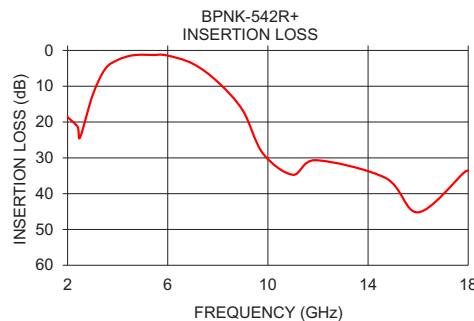


Pad Connections

Input	3
Output	1
Ground	2,4

Typical Performance Data at 25°C

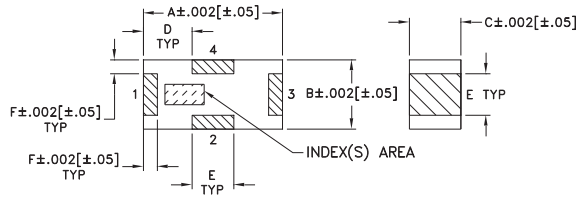
Frequency (GHz)	Insertion Loss (dB)	VSWR (:1)
2.00	18.63	43.86
2.40	21.32	27.79
2.50	24.26	25.50
3.00	12.51	12.38
3.50	5.19	5.25
4.00	2.67	2.79
4.90	1.20	1.28
5.00	1.19	1.28
5.95	1.37	1.40
7.00	3.70	2.70
8.00	8.82	8.83
9.00	16.79	9.32
9.80	28.76	15.72
11.00	34.73	36.02
11.90	30.65	47.41
14.70	35.63	34.20
16.00	45.22	160.16
17.85	34.00	2.99
18.00	33.53	4.18



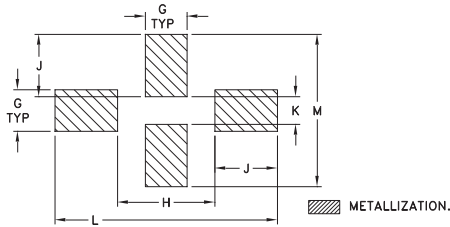
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Outline Drawing



PCB Land Pattern

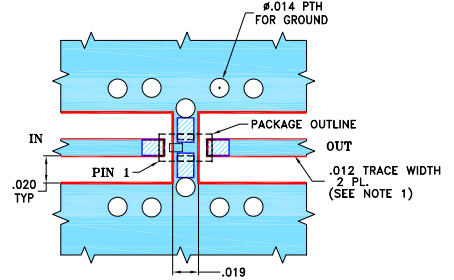


Suggested Layout,
Tolerance to be within .002



Pad Connections

Input	3
Output	1
Ground	2,4

Evaluation Board MCL P/N: TB-1039+ Suggested PCB Layout (PL-569)



NOTES:

1. PCB IS MULTILAYER PCB, SEE STACK-UP DIAGRAM.
 2. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .008±.0005. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
 3. LAYERS 2,3,4 OF THE PCB ARE CONTINUOUS GROUND PLANES.
-  DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

Outline Dimensions ($\frac{\text{inch}}{\text{mm}}$)

A	B	C	D	E	F	G
.039	.020	.015	.014	.012	.004	.012
0.99	0.51	0.38	0.36	0.30	0.10	0.30
H	J	K	L	M		wt
.028	.018	.008	.063	.043		grams
0.71	0.46	0.20	1.60	1.09		.0007

Additional 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

