

LTCC

# Low Pass Filter

50Ω 2400 to 2500 MHz

## Features

- Miniature size 0402
- Low Insertion Loss and High stop band rejection.
- Low cost
- Aqueous washable

## Applications

- ISM Band
- WLAN
- Bluetooth
- Zigbee

## LPNK-252R+



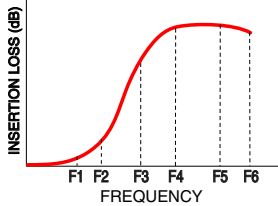
Generic photo used for illustration purposes only  
CASE STYLE: NK0402C-1

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

**Available Tape and Reel at no extra cost**

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 4000

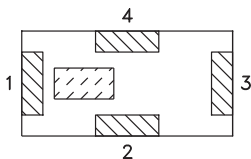
### Specification Definition



### Block Diagram



### Top View



### Pad Connections

Input	1
Output	3
Ground	2,4

### Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss*	F1-F2	2400 - 2500	—	0.5	0.7	dB
	VSWR	F1-F2	2400 - 2500	—	1.4	1.9	:1
Stop Band	Rejection Loss	F3-F4	4800 - 5000	28	42	—	dB
		F5-F6	7200 - 7500	33	40	—	dB

\* Tested on Evaluation Board TB-1038+

### Maximum Ratings

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

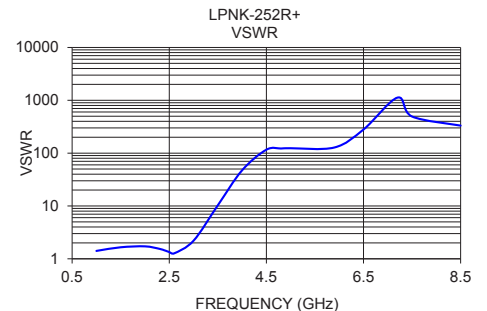
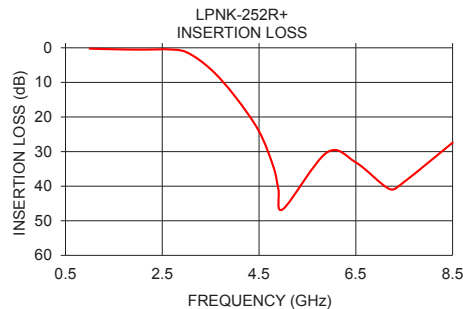
\*\*Refer to product storage temperature after installation  
Suggestion for T&R unused product storage condition:  
+5 ~ +35 °C, Humidity 45~75%RH, 12 month Max.

† Derate linearly to 1.5W at 85°C

### Typical Performance Data at 25°C\*\*\*

Frequency (GHz)	Insertion Loss (dB)	VSWR (:1)
1.00	0.24	1.41
1.50	0.43	1.65
2.00	0.52	1.72
2.30	0.49	1.54
2.40	0.46	1.45
2.44	0.45	1.41
2.50	0.44	1.34
2.60	0.44	1.27
3.00	1.27	2.20
3.50	6.17	10.28
4.00	13.99	47.29
4.50	24.15	116.20
4.80	34.54	122.35
4.90	40.91	123.79
5.00	46.58	123.88
5.90	30.28	127.84
6.50	33.13	280.05
7.20	40.84	1124.55
7.50	38.75	493.11
8.50	27.43	332.01

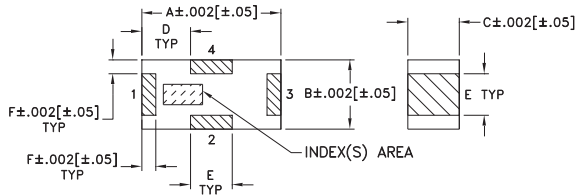
\*\*\* Measured with Agilent E5071B network analyzer using port extension.



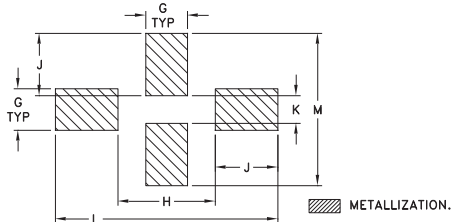
# Low Pass Filter

# LPNK-252R+

## Outline Drawing

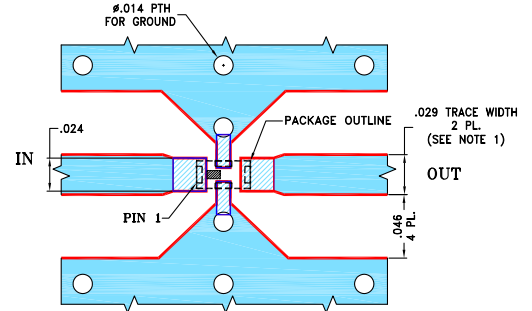


## PCB Land Pattern





Suggested Layout,  
Tolerance to be within .002

## Evaluation Board MCL P/N: TB-1038+ Suggested PCB Layout (PL-568)



### NOTES:

- TRACE WIDTH IS SHOWN FOR FR4, GRADE IT-180TC (ITEQ CORP.) WITH DIELECTRIC THICKNESS .016±.0015. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP 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 SOLDER MASK.

## Pad Connections

Input	1
Output	3
Ground	2,4

## 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

- 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.
- 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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