

LTCC

Bandpass Filter

50Ω 2400 to 2500 MHz

BPNK-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

Features

- Miniature size 0402 (0.039" [1.0mm] x 0.020" [0.5mm] x 0.015" [0.37mm])
- High rejection up to 8.5GHz.
- 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 | — | — | 2450 | — | MHz |
| | Insertion Loss | 2400-2500 | — | 3.3 | 3.8 | dB |
| | VSWR | 2400-2500 | — | 1.6 | 2 | :1 |
| Stop Band, Lower | Rejection | 695 – 800 | 25 | 40 | — | dB |
| | | 1910 | 22 | 25 | — | dB |
| Stop Band, Upper | Rejection | 3200 | 30 | 36 | — | dB |
| | | 4800 - 5000 | 17.5 | 23 | — | dB |
| | | 7200 - 7500 | 15.5 | 22 | — | dB |

* Tested on Evaluation Board TB-1024+

Maximum Ratings

| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to +85°C |
| Storage Temperature* | -40°C to +85°C |
| RF Power Input** | 2W at 25°C |

*Refer to product storage temperature after installation
Suggestion for T&R unused product storage condition:

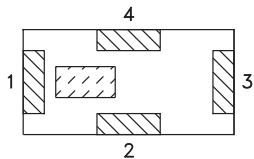
+5 ~ +35 °C, Humidity 45-75%RH, 12 month Max

** Derate linearly to 1W at 85°C

Block Diagram



Top View

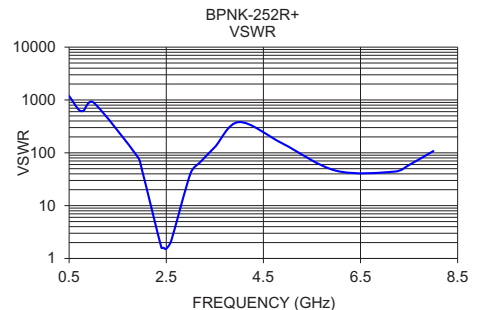
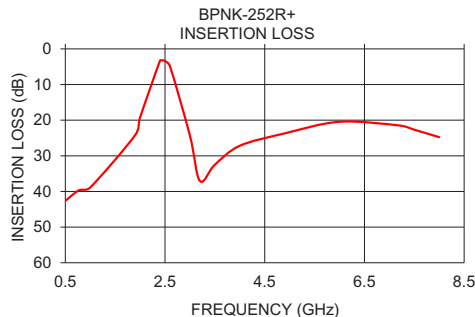


Pad Connections

| | |
|--------|-----|
| Input | 3 |
| Output | 1 |
| Ground | 2,4 |

Typical Performance Data at 25°C

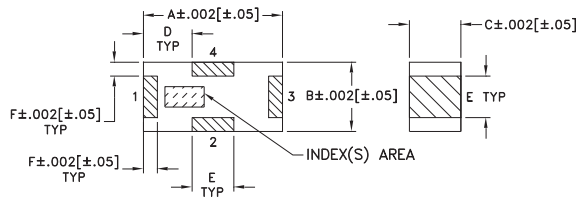
| Frequency (GHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 0.50 | 42.66 | 1191.08 |
| 0.70 | 40.32 | 651.00 |
| 0.80 | 39.54 | 629.67 |
| 1.00 | 38.89 | 899.24 |
| 1.90 | 24.20 | 86.63 |
| 2.00 | 19.22 | 47.47 |
| 2.40 | 3.29 | 1.60 |
| 2.44 | 3.25 | 1.60 |
| 2.50 | 3.40 | 1.53 |
| 2.60 | 4.89 | 2.13 |
| 3.00 | 24.36 | 40.79 |
| 3.20 | 37.06 | 66.49 |
| 3.50 | 32.49 | 128.11 |
| 4.00 | 27.18 | 381.82 |
| 4.80 | 24.02 | 193.10 |
| 4.90 | 23.71 | 148.98 |
| 5.00 | 23.38 | 142.17 |
| 6.00 | 20.45 | 45.73 |
| 7.20 | 21.49 | 44.04 |
| 7.50 | 22.67 | 58.78 |
| 8.00 | 24.77 | 107.96 |



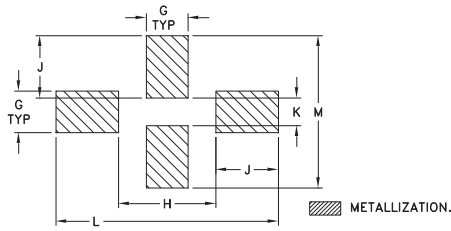
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Outline Drawing



PCB Land Pattern

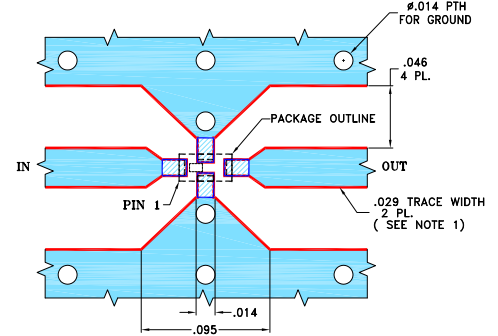


Suggested Layout,
Tolerance to be within .002

Pad Connections

| | |
|--------|-----|
| Input | 3 |
| Output | 1 |
| Ground | 2,4 |

Evaluation Board MCL P/N: TB-1024+ Suggested PCB Layout (PL-552)



- 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.

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.
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