

Surface Mount High Pass Filter

THP-700+

50Ω 700 to 4000 MHz

The Big Deal

- Small size (0.25" X 0.25" X 0.10")
- Good matching
- Low insertion loss



Generic photo used for illustration purposes only
CASE STYLE: GQ1018

Product Overview

THP-700+ is a 50Ω high pass filter fabricated using SMT technology. This high pass filter covers from 700 to 4000 MHz. This series of filters are constructed in a tiny package offering dual advantage of superior lumped element filter performance in a space saving SMT package. These models are suitable for mass production without losing flexibility of small volume requirements. It has repeatable performance across lots and consistent performance across temperature.

Key Features

| Feature | Advantages |
|-----------------------------------|--|
| Low insertion loss | Can be used in high performance applications. |
| Good rejection | This enables the filter to attenuate spurious signals and reject harmonics for broad band frequency. |
| Small size, 0.25" X 0.25" X 0.10" | The small surface mount package enables the THP-700+ to be used compact designs. |

Notes

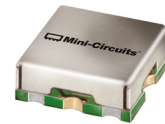
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B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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Features

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- Good matching
- Small size (0.25" X 0.25" 0.10")

Applications

- Defense system
- Public safety services
- Private and public mobile

Electrical Specifications at 25°C

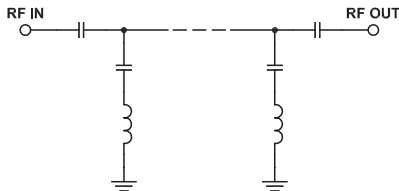
| Parameter | | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|-----------|----------------|-------|-----------------|------|------|------|------|
| Stop Band | Rejection Loss | DC-F1 | DC-395 | 20 | 30 | - | dB |
| | VSWR | DC-F1 | DC-395 | - | 20 | - | :1 |
| Pass Band | Insertion Loss | F2-F3 | 700-4000 | - | 0.5 | 2.0 | dB |
| | VSWR | F2-F3 | 700-4000 | - | 1.2 | 1.92 | :1 |

Maximum Ratings

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

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

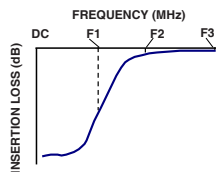
Functional Schematic



Typical Performance Data at 25°C

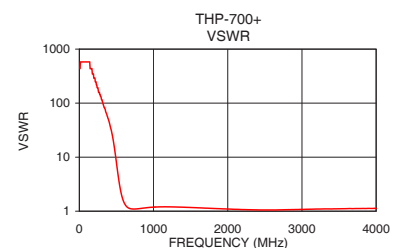
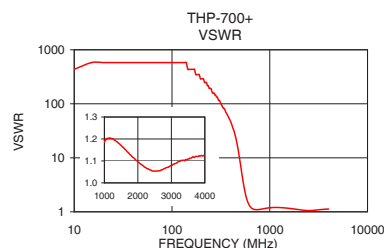
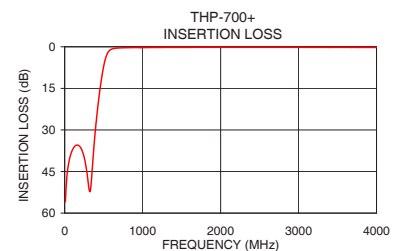
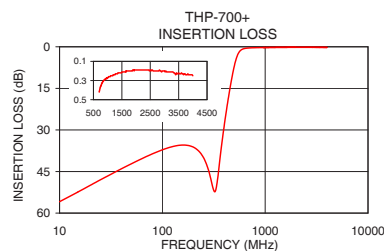
| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 10 | 55.89 | 434.30 |
| 75 | 39.09 | 579.06 |
| 100 | 37.17 | 579.06 |
| 250 | 39.85 | 193.02 |
| 390 | 31.23 | 51.10 |
| 395 | 29.71 | 48.26 |
| 400 | 28.26 | 45.72 |
| 430 | 20.46 | 31.60 |
| 450 | 15.98 | 23.18 |
| 470 | 12.01 | 15.67 |
| 500 | 7.05 | 7.87 |
| 530 | 3.64 | 3.90 |
| 570 | 1.47 | 1.97 |
| 600 | 0.88 | 1.47 |
| 700 | 0.42 | 1.10 |
| 1050 | 0.26 | 1.20 |
| 1000 | 0.27 | 1.19 |
| 2000 | 0.19 | 1.10 |
| 3000 | 0.20 | 1.08 |
| 4000 | 0.25 | 1.12 |

Typical Frequency Response



+RoHS Compliant

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



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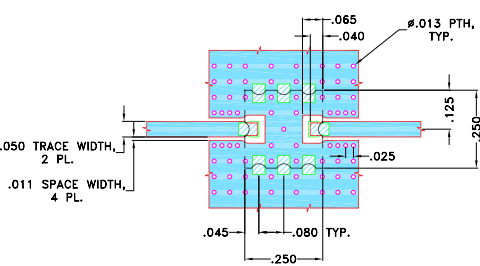
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Pad Connections

| | |
|--------|------------------|
| INPUT | 8 |
| OUTPUT | 4 |
| GROUND | 1, 2, 3, 5, 6, 7 |

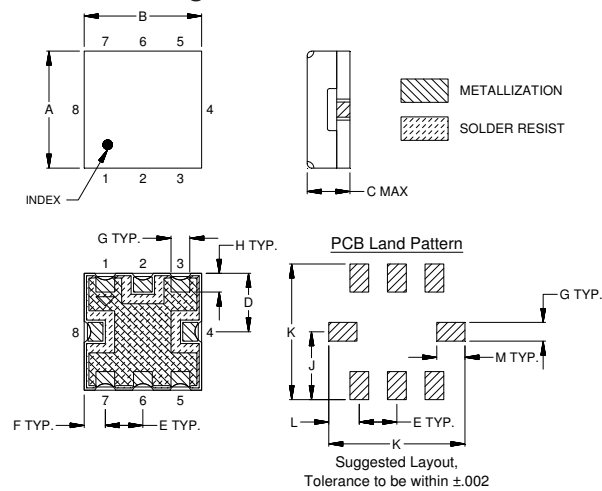
Demo Board MCL P/N: TB-680
Suggested PCB Layout (PL-372)



- NOTES:
1. TRACE WIDTH IS SHOWN FOR OAK (OAK-602) WITH DIELECTRIC THICKNESS .022"±.0015". 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 SOLDERMASK

Outline Drawing



Outline Dimensions (inch)

| A | B | C | D | E | F | G |
|------|------|------|------|------|------|-------|
| .25 | .25 | .10 | .125 | .080 | .045 | .040 |
| 6.35 | 6.35 | 2.54 | 3.18 | 2.03 | 1.14 | 1.02 |
| H | J | K | L | M | | Wt. |
| .040 | .145 | .290 | .065 | .060 | | grams |
| 1.02 | 3.68 | 7.37 | 1.65 | 1.52 | | .25 |

Note: Please refer to case style drawing for details

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