

Satellite Triplex Filter 950 - 1450 / 1650 - 2150 / 2500 - 3000 MHz

Rev. V3

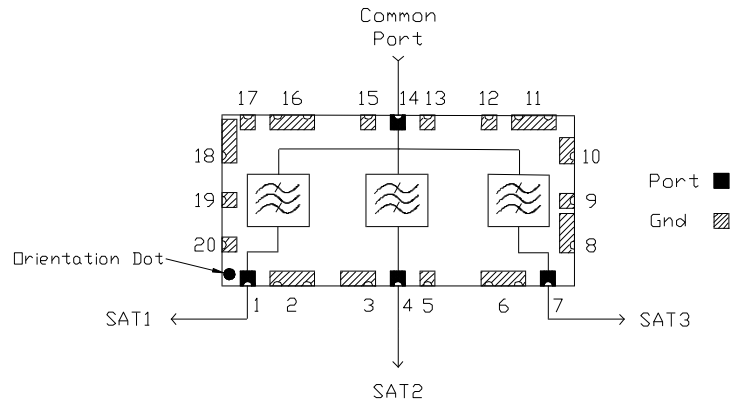
Description

- MACOM Technology Solutions MAFL-010609 is a surface mount triplex filter unit designed for Satellite applications.

Features

- 75 Ohm
- SMT unit
- RoHS* Compliant
- SAT1 BPF 950-1450 MHz
- SAT2 BPF 1650-2150 MHz
- SAT3 BPF 2500-3000 MHz

Functional Schematic



Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 75\Omega$

| Parameter | Units | Min | Typ | Max | Parameter | Units | Min | Typ | Max |
|--------------------|-------|-----|------|-----|---------------------------------------|-------|-------------------------|-------|-----|
| SAT1 Band | | | | | Isolation | | | | |
| Insertion Loss | | | | | SAT1 - SAT2 / SAT2 - SAT1 | | | | |
| 950 - 1450 MHz | dB | - | 1.5 | 3.0 | 950 - 1450 MHz | dB | 36 | 45 | - |
| Rejection | | | | | 1650 - 2150 MHz | dB | 30 | 35 | - |
| 500 - 875 MHz | dB | 30 | - | - | SAT1 - SAT3 / SAT3 - SAT1 | | | | |
| 1550 MHz | dB | 9 | 15 | - | 950 - 1450 MHz | dB | 37 | 45 | - |
| 1630 - 2150 MHz | dB | 30 | 40 | - | 2500 - 3000 MHz | dB | 35 | 43 | - |
| 2400 - 4500 MHz | dB | 35 | 45 | - | SAT2 - SAT3 / SAT3 - SAT2 | | | | |
| SAT2 Band | | | | | 1650 - 2150 MHz | dB | 37 | 45 | - |
| Insertion Loss | dB | - | 2.0 | 3.0 | 2500 - 3000 MHz | dB | 35 | 43 | - |
| Rejection | | | | | Parameter Pass Band Flatness | | | | |
| 500 - 1470 MHz | dB | 36 | 45 | - | P-P over the band | | | Units | Max |
| 1550 MHz | dB | 9 | 15 | - | SAT1 / SAT2 / SAT3 | | | dB | 3 |
| 2400 - 2420 MHz | dB | 27 | 40 | - | P-P, Any 40MHz band for the | | | dB | 1 |
| 2420 - 2440 MHz | dB | 31 | 40 | - | Parameter Group Delay Flatness | | | | |
| 2440 - 4500 MHz | dB | 35 | 45 | - | SAT 1 / SAT 2 / SAT 3 | | | Units | Max |
| SAT3 Band | | | | | P-P, over each of the bands | | | nSec | 25 |
| Insertion Loss | dB | - | 2.75 | 3.0 | SAT 1 / SAT 2 / SAT 3 | | | nSec | 12 |
| Rejection | | | | | Pin Configuration | | | | |
| 500 - 875 MHz | dB | 40 | 60 | - | Function | | Pin Number | | |
| 950 - 2230 MHz | dB | 37 | 45 | - | SAT1 Port | | 1 | | |
| 2230 - 2240 MHz | dB | 33 | 40 | - | SAT2 Port | | 4 | | |
| 2240 - 2250 MHz | dB | 29 | 40 | - | SAT3 Port | | 7 | | |
| 3500 - 4500 MHz | dB | 20 | 25 | - | Common Port | | 14 | | |
| Return Loss | | | | | Ground | | 2, 3, 5, 6, 8-13, 15-20 | | |
| Common Port | | | | | | | | | |
| 950 - 1450MHz | | | | | | | | | |
| 1650 - 2150 MHz | | | | | | | | | |
| 2500 - 3000 MHz | | | | | | | | | |
| SAT1 Port | | | | | | | | | |
| 950 - 1450 MHz | | | | | | | | | |
| SAT 2 Port | | | | | | | | | |
| 1650 - 2150 MHz | | | | | | | | | |
| SAT 3 Port | | | | | | | | | |
| 2500 - 3000 MHz | | | | | | | | | |

* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC

* Temperature Data available upon request

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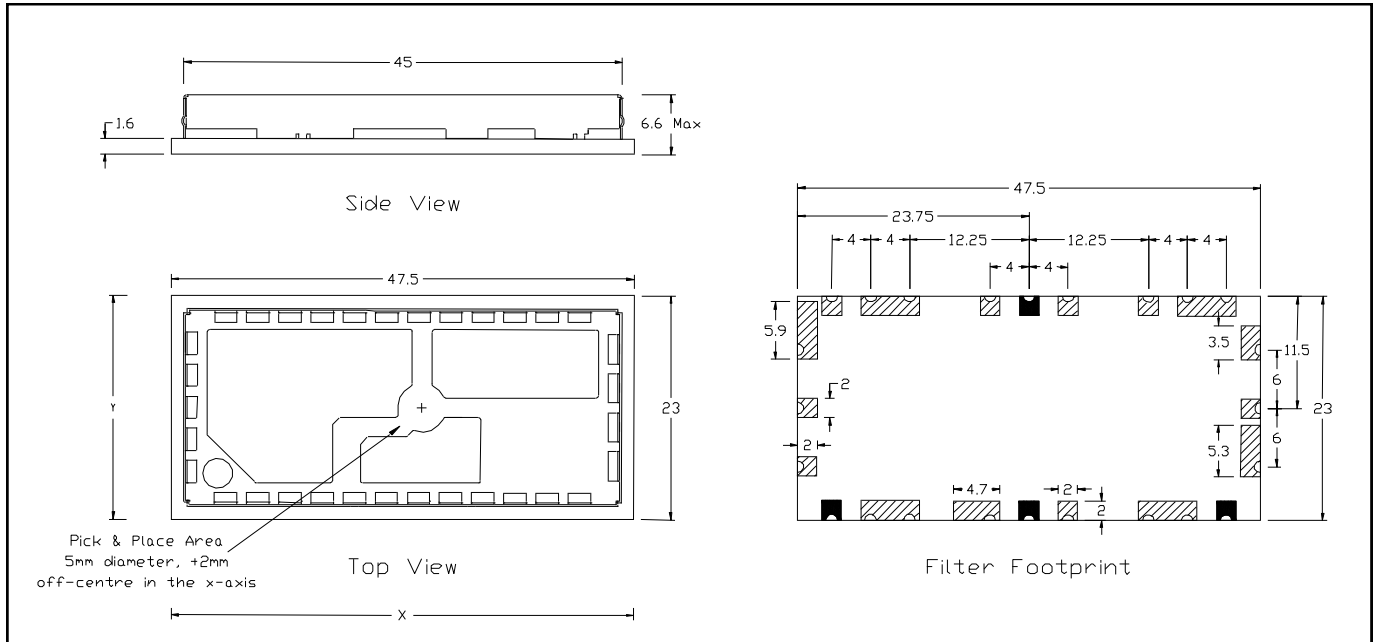
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Outline Drawing:



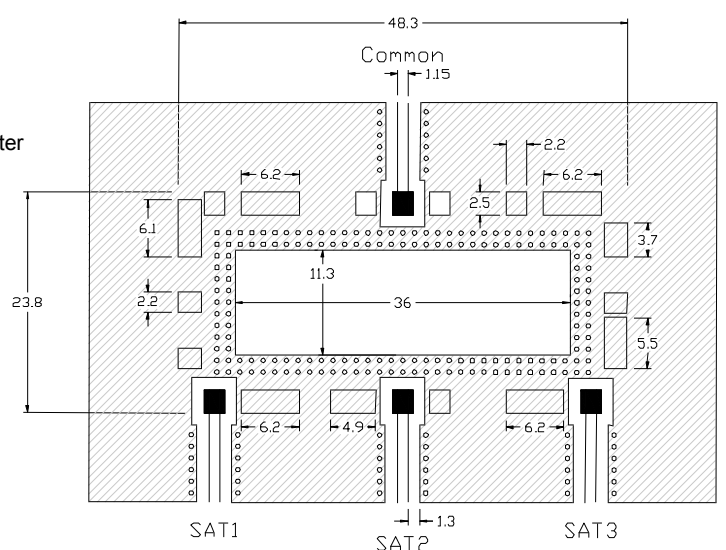
Dimensions in mm. Tolerance: $.x \pm 0.1$ unless otherwise noted

Recommended Maximum Ratings

| Parameter | Value |
|-----------------------|----------------|
| Storage Temperature | -25°C to +70°C |
| Operating Temperature | 0°C to +70°C |

Recommended PCB Configuration

- Track dimension = 1.15mm
- Gap dimension = 1.3mm
- It is not recommended to run tracks under the filter unless they are greater than 1.6mm below the base.
- RF shield should be kept a minimum of 10mm above the filter



NOTE: Substrate is 1.6mm thick FR4

2 Dimensions in mm. Tolerance: $.x \pm 0.1$ unless otherwise noted

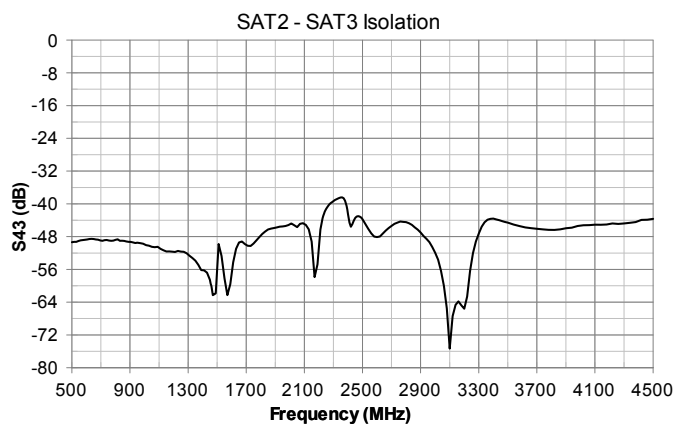
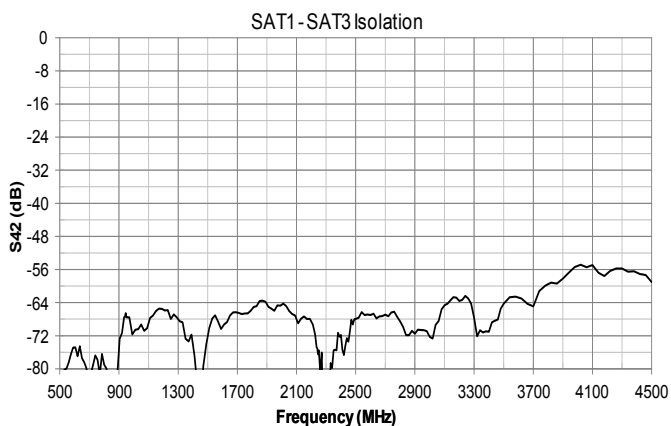
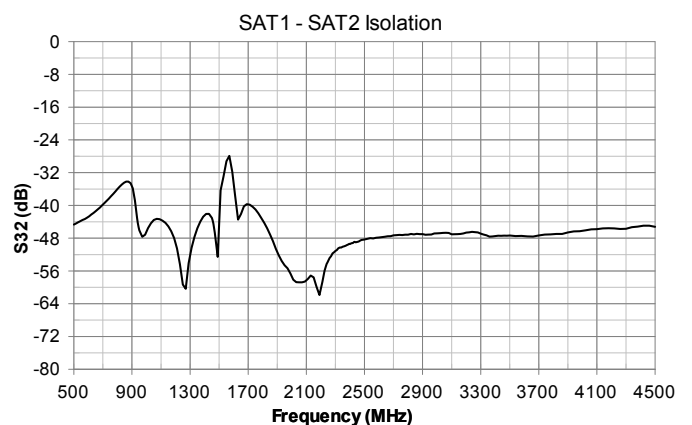
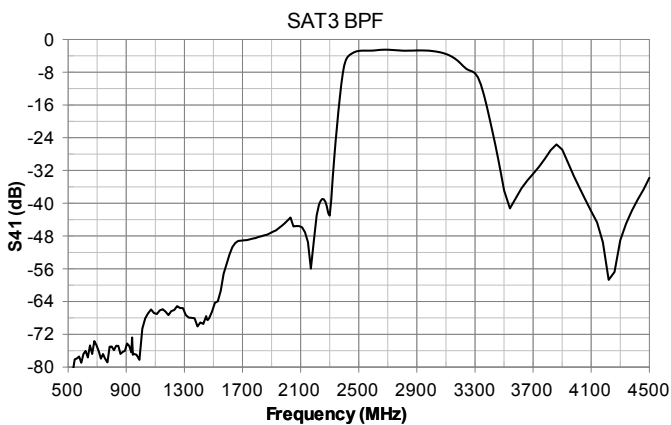
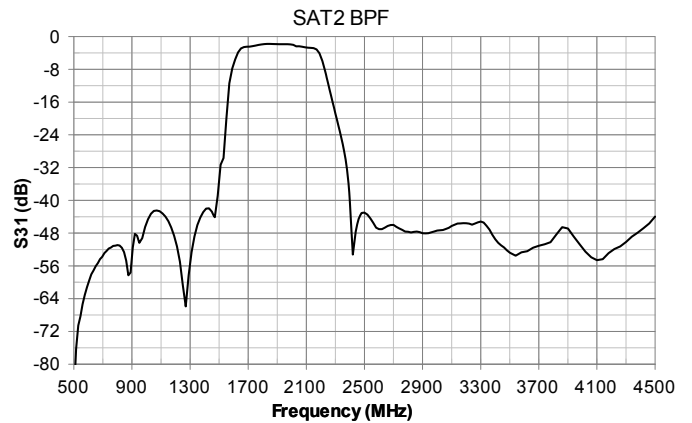
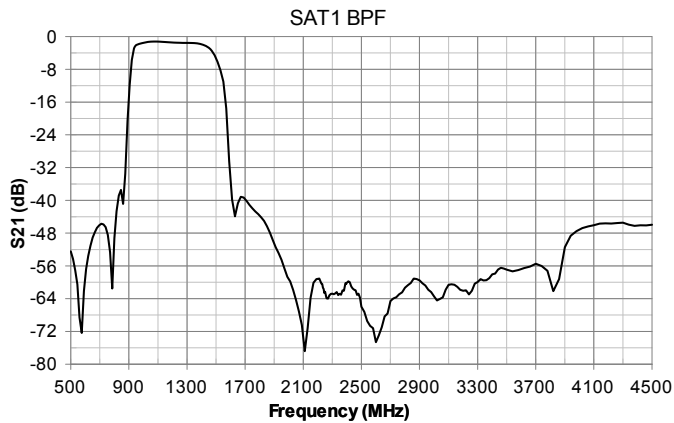
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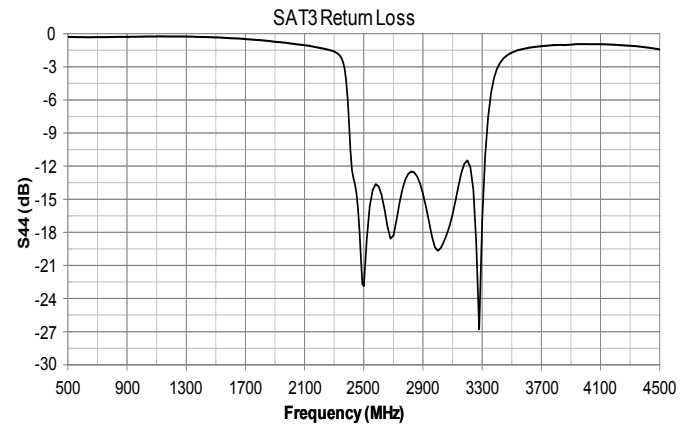
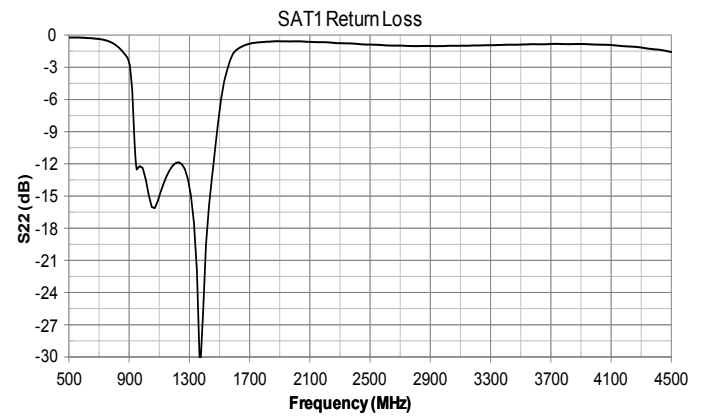
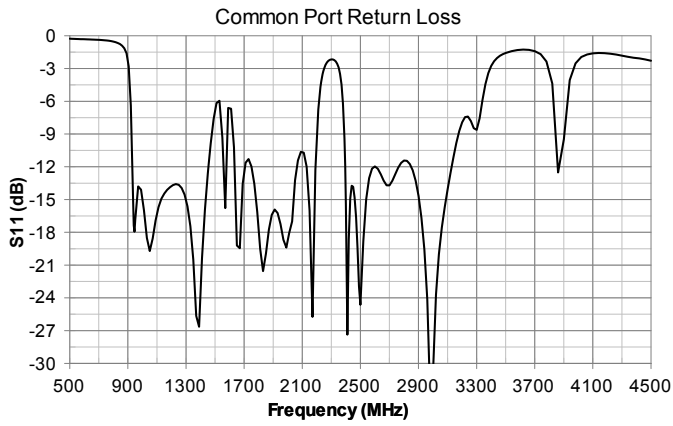
Typical Performance Curves at +25°C



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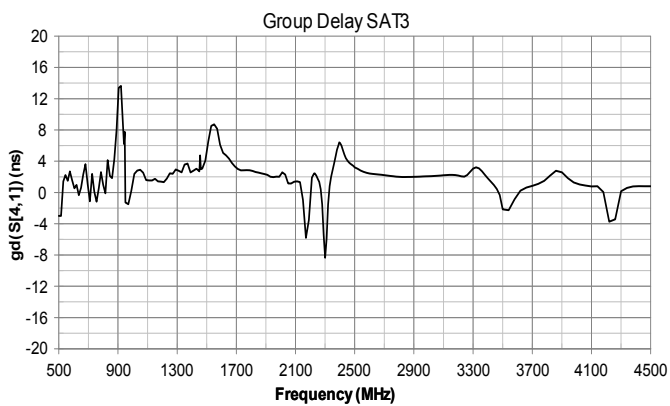
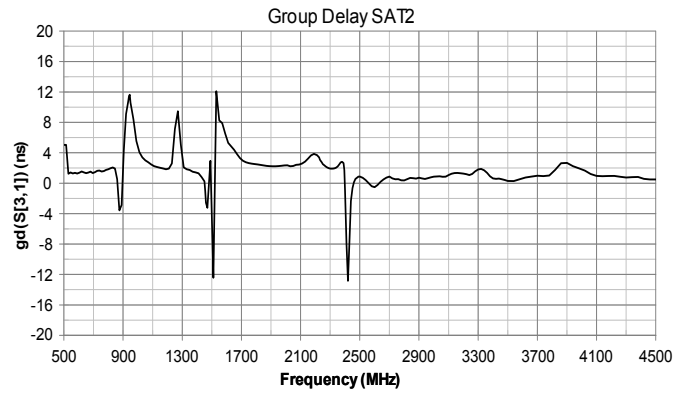
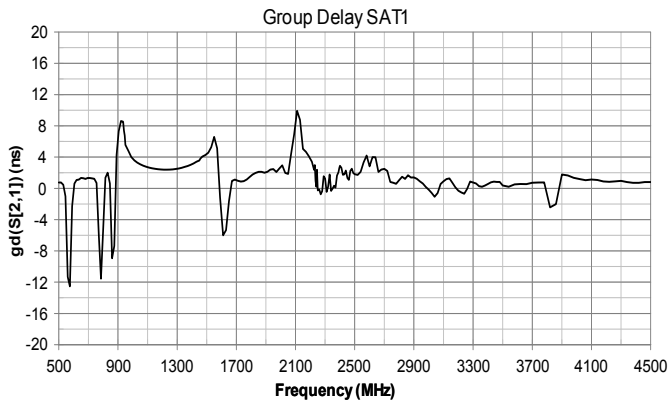
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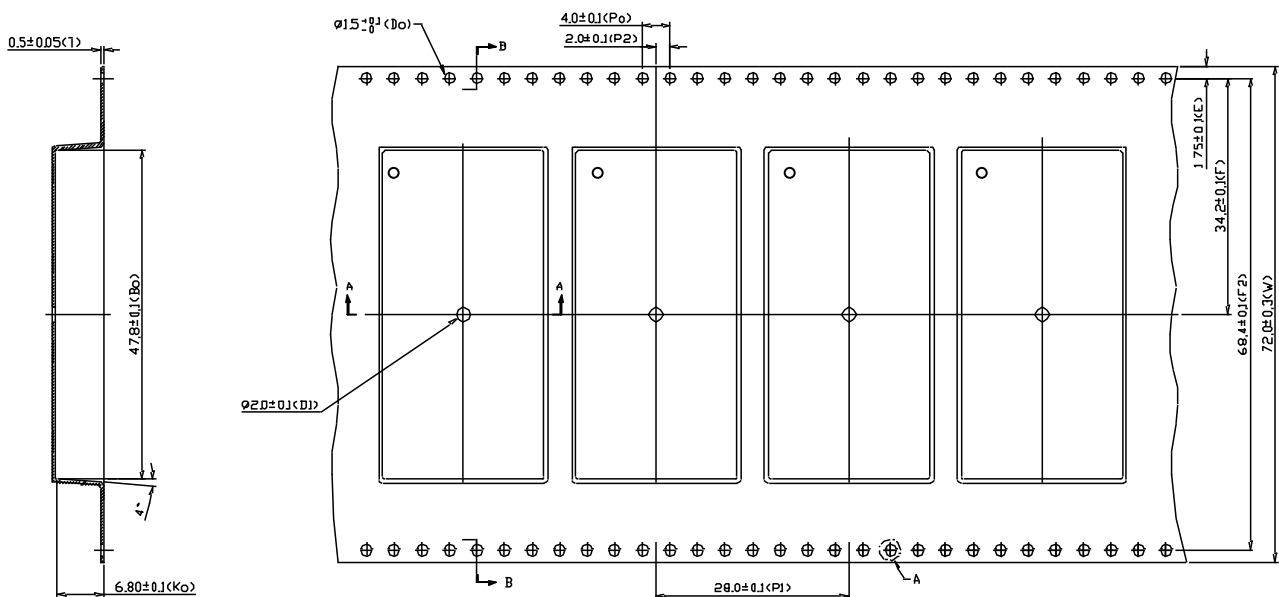
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Tape & Reel Information

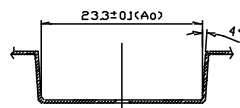
| Parameter | Units | Value |
|--|-------|-------|
| Qty per reel | - | 200 |
| Reel Size | mm | 330 |
| Tape Width | mm | 72.0 |
| Pitch | mm | 28.0 |
| Ao | mm | 23.3 |
| Bo | mm | 47.8 |
| Ko | mm | 6.8 |
| Orientation | - | F30 |
| Reference Application Note ANI-019 for orientation | | |

Ordering Information

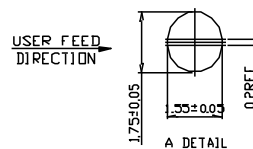
| Part Number | Package |
|-------------|-------------|
| MAFL-010609 | Tape & Reel |



Section B-B



Section A-A



Satellite Triplex Filter

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