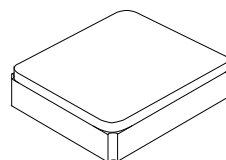


SF1186G

1575.42 MHz SAW Filter



SM2520-4

- *Designed for Front End GPS Applications*
- *Steep Rejection*
- *2.5 x 2.0 x 1.0 mm Surface-Mount Case*
- *No Matching Circuit Required*
- *AEC Q200 Qualified*

Absolute Maximum Ratings

| Rating | Value | Units |
|--|-----------------|-------|
| Maximum Input Power, DC to 3 GHz | +10 | dBm |
| Maximum Input Power, 0.8 to 1 GHz and 1.7 to 1.9 GHz | +20 | dBm |
| Maximum DC Voltage On any Non-ground Terminal | 5 | VDC |
| Storage Temperature Range in Tape and Reel | -40 to +85 | °C |
| Maximum Soldering Profile (5 cycles maximum) | 265 °C for 10 s | |

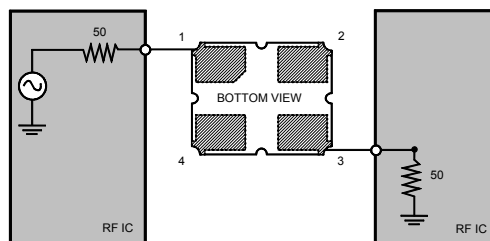
Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|--|-------|-------|------|---------|-----|-------------------|
| Nominal Operating Frequency | f_C | | | 1575.42 | | MHz |
| Passband Insertion Loss, $f_C \pm 1.0$ MHz | IL | | | 1.5 | 2.2 | dB |
| Amplitude Ripple, $f_C \pm 1.0$ MHz | | | | 0.1 | 1.0 | dB _{P-P} |
| Attenuation Referenced to 0 dB: | | | | | | dB |
| DC to 1400 MHz | | | 35.0 | 37.0 | | |
| 1400 to 1475 MHz | | | 30.0 | 34.0 | | |
| 1475 to 1525 MHz | | | 25.0 | 37.0 | | |
| 1625 to 1640 MHz | | | 30.0 | 45.0 | | |
| 1640 to 2000 MHz | | | 32.0 | 34.0 | | |
| 2000 to 3000 MHz | | | 20.0 | 28.0 | | |
| S_{11} VSWR across $f_C \pm 1.0$ MHz | | | | 1.2 | 2.0 | |
| S_{22} VSWR across $f_C \pm 1.0$ MHz | | | | 1.2 | 2.0 | |
| Source impedance | Z_S | | | 50 | | Ω |
| Load impedance | Z_L | | | 50 | | Ω |
| Operating Temperature | T_A | | -40 | | +85 | °C |

| | |
|---|---|
| Single-ended Input / Output Impedance Match | No matching network required for operation at 50 ohms |
| Case Style | SM2520-4 |
| Lid Symbolization (2A=SF1186G Y=year, W=week) | 2A, YW |
| Standard Reel Quality, 7 inch Reel Size | 500 Pieces Reel |
| Standard Reel Quantity, 13 inch Reel Size | 3000 Pieces/Reel |

Electrical Connections

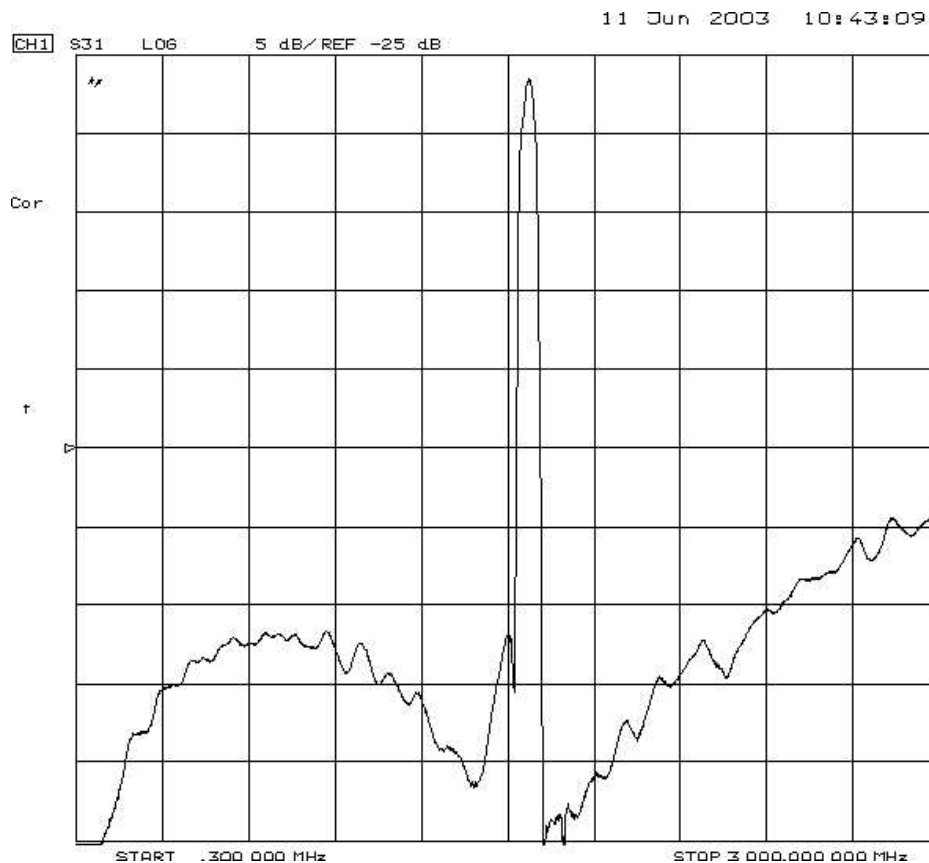
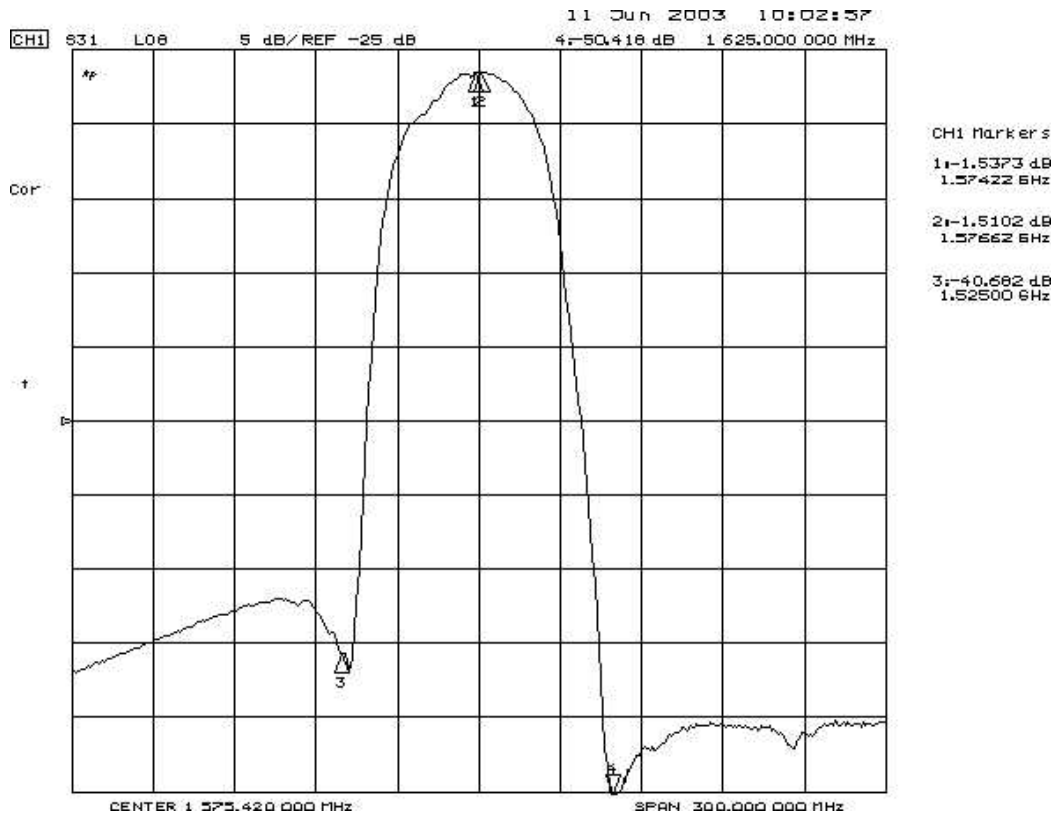
| Connection | Terminals |
|------------|------------|
| Input | 1 |
| Output | 3 |
| Ground | All others |

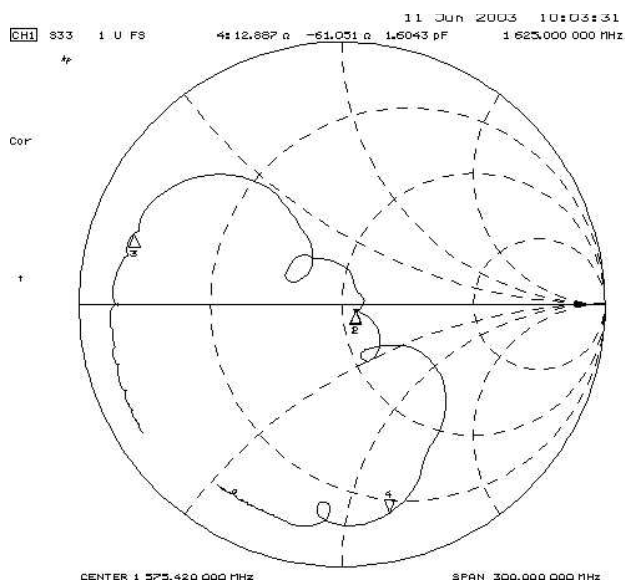
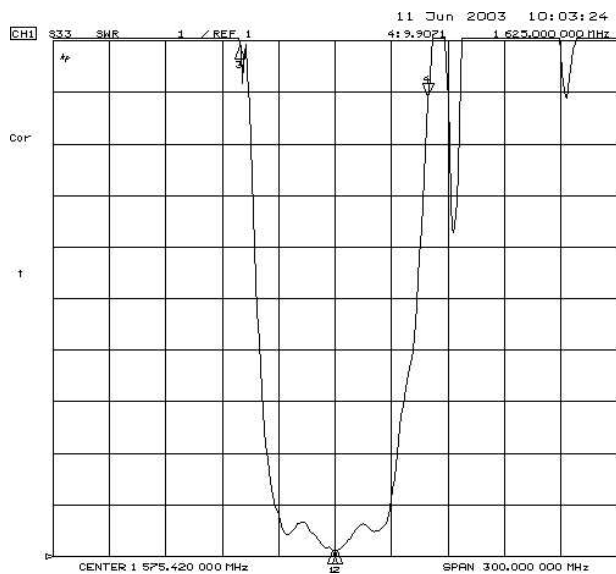
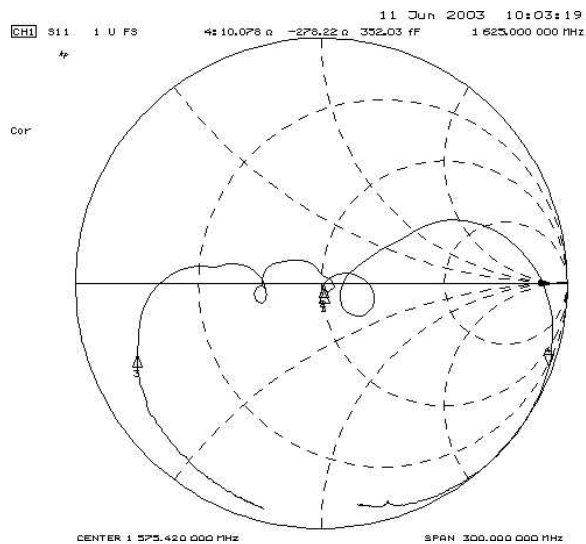
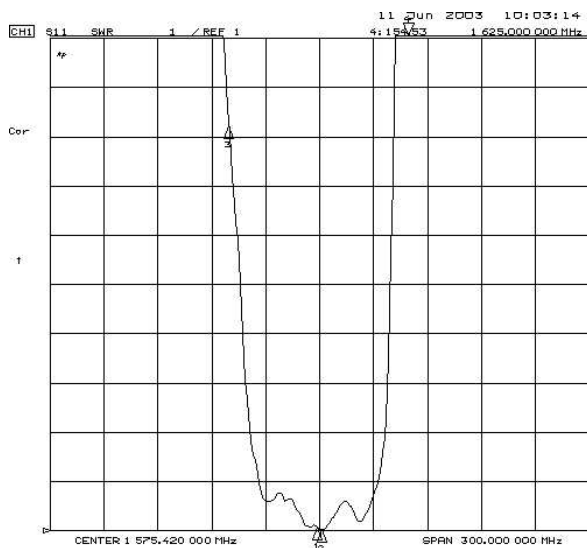


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

1. US and international patents may apply.
2. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd
3. This product is made by TAI-SAW Technology Co., LTD. in Taiwan.

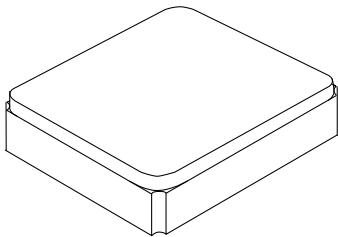




SM2520-4 Case

4-Terminal Ceramic Surface-Mount Case

2.5 X 2.0 mm Nominal Footprint



Case Dimensions

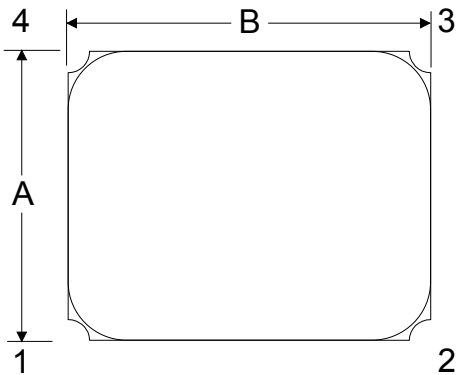
| Dimension | mm | | |
|-----------|------|------|------|
| | Min | Nom | Max |
| A | 1.88 | 2.0 | 2.12 |
| B | 2.38 | 2.5 | 2.62 |
| C | | | 1.00 |
| D | 0.67 | 0.80 | 0.83 |
| E | 0.80 | 0.95 | 1.10 |
| F | 0.55 | 0.70 | 0.85 |
| G | 0.50 | 0.60 | 0.70 |

Electrical Connections

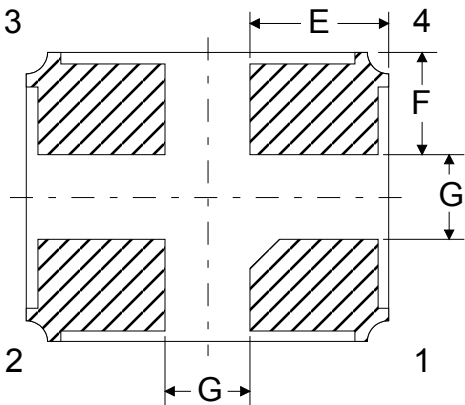
| Connection | | Terminals |
|-----------------------------|---------------------|------------|
| Port 1 | Single-ended Input | 1 |
| Port 2 | Single-ended Output | 3 |
| | Ground | All others |
| Single-ended Operation Only | | |

| Materials | |
|--------------------|--|
| Solder Pad Plating | 0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel |
| Lid Plating | 2.0 to 3.0 μm Nickel |
| Body | Al ₂ O ₃ Ceramic |
| Pb Free | |

TOP VIEW



BOTTOM VIEW



PCB Foot Print

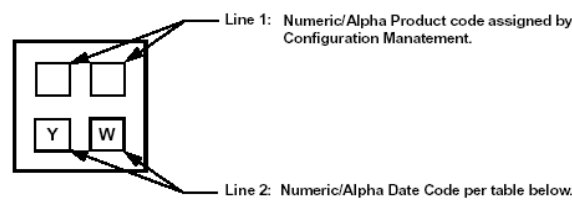
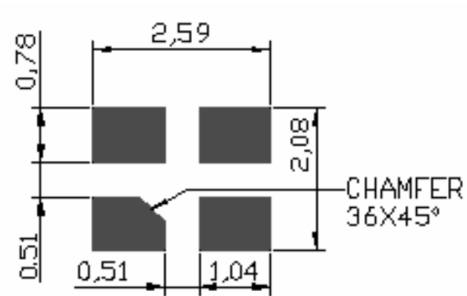
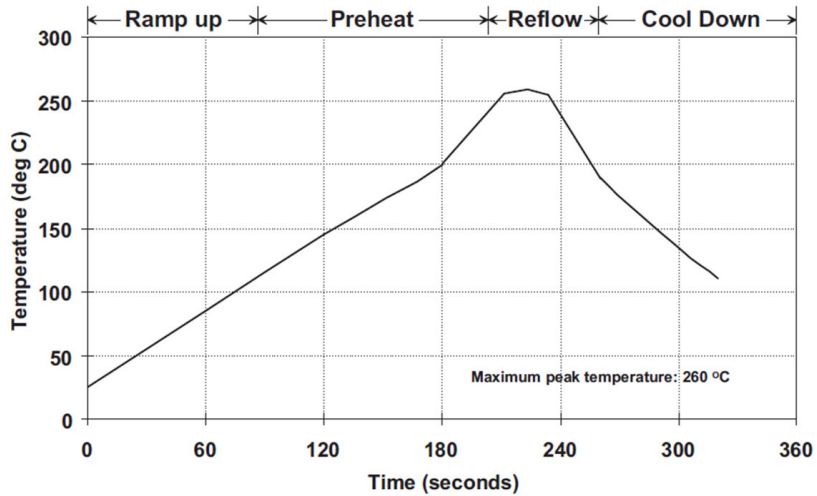


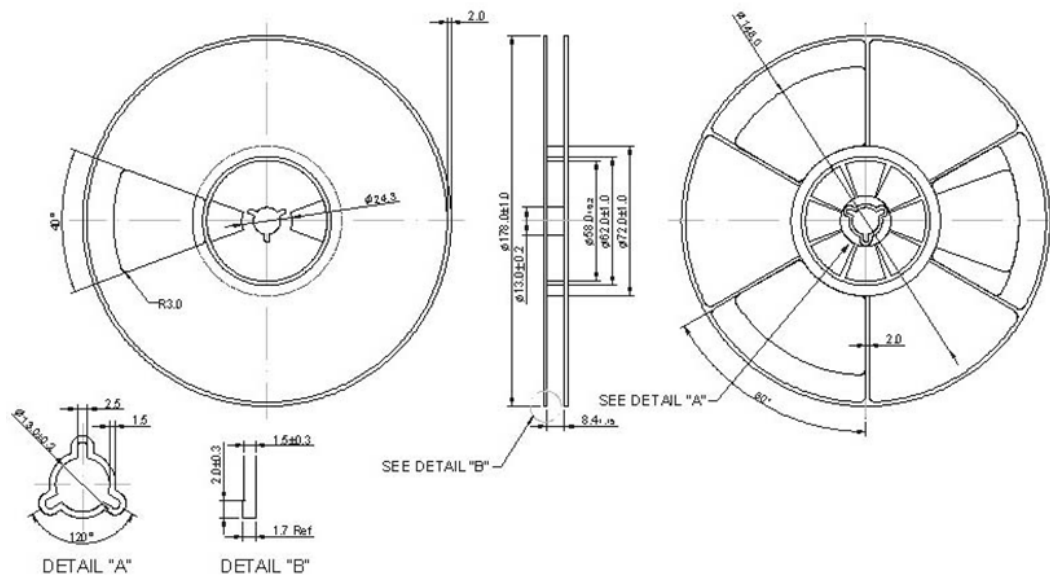
Table 4: SM2520-4

| YEAR CODE | | WEEK CODE | | | | | | | |
|-----------|------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|
| NUMBER | REPRESENTS | ALPHA CHARACTER | REPRESENTS WEEK NO. | ALPHA CHARACTER | REPRESENTS WEEK NO. | ALPHA CHARACTER | REPRESENTS WEEK NO. | ALPHA CHARACTER | REPRESENTS WEEK NO. |
| 3 | 2013 | A | 01 | N | 14 | a | 27 | n | 40 |
| 4 | 2014 | B | 02 | O | 15 | b | 28 | o | 41 |
| 5 | 2015 | C | 03 | P | 16 | c | 29 | p | 42 |
| 6 | 2016 | D | 04 | Q | 17 | d | 30 | q | 43 |
| 7 | 2017 | E | 05 | R | 18 | e | 31 | r | 44 |
| 8 | 2018 | F | 06 | S | 19 | f | 32 | s | 45 |
| 9 | 2019 | G | 07 | T | 20 | g | 33 | t | 46 |
| 0 | 2020 | H | 08 | U | 21 | h | 34 | u | 47 |
| | | I | 09 | V | 22 | i | 35 | v | 48 |
| | | J | 10 | W | 23 | j | 36 | w | 49 |
| | | K | 11 | X | 24 | k | 37 | x | 50 |
| | | L | 12 | Y | 25 | l | 38 | y | 51 |
| | | M | 13 | Z | 26 | m | 39 | z | 52 |

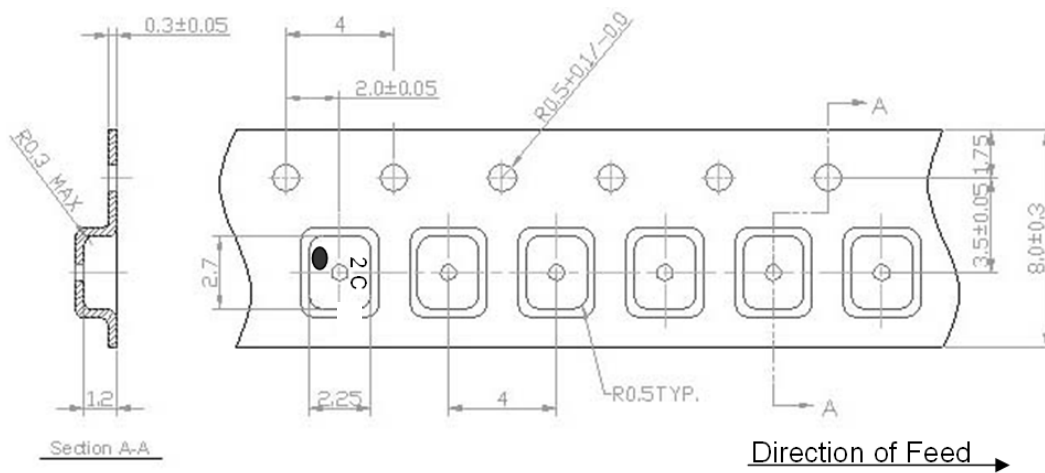
Reflow Profile



Reel Dimension



Tape Dimension



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