- RF Filter for Mobile Communication Applications
- No Matching Circuit Required
- $3.0 \times 3.0 \times 1.3$ mm Package
- Complies with Directive 2011/65/EU (RoHS)


## Absolute Maximum Ratings

| Rating | Value | Units |
| :--- | :---: | :---: |
| Maximum Input Power | +10 | dBm |
| DC voltage between Terminals | 0 | VDC |
| Operable Temperature Range | -45 to +125 | ${ }^{\circ} \mathrm{C}$ |
| Storage Temperature | -40 to +85 | ${ }^{\circ} \mathrm{C}$ |
| Suitable for lead-free soldering - Max Soldering Temperature | $260^{\circ} \mathrm{C}$ for 30 s |  |

### 1842.5 MHz SAW Filter



SM3030-6

## Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Nominal Operating Frequency | $\mathrm{f}_{\mathrm{C}}$ |  |  | 1842.5 |  | MHz |
| Passband Insertion Loss across Fc+/ -37.5 MHz | IL |  |  | 2.2 | 3.8 | dB |
| Amplitude Ripple p-p across Fc+/-37.5 MHz |  |  |  | 1.3 | 2.3 | dB |
| Attenuation 1542.5 ~ 1600 MHZ |  |  | 20.0 | 24.5 |  | dB |
| 1600 ~ 1710 MHZ |  |  | 22.0 | 25.0 |  | dB |
| $1710 \text { ~ } 1785 \text { MHZ }$ |  |  | 10.0 | 23.5 |  | dB |
| 1920 ~ 2142.5 MHZ |  |  | 25.0 | 28.0 |  | dB |
| VSWR across Fc +/ -37.5 MHz |  |  |  | 1.9 | 2.6 |  |
| Source impedance | $\mathrm{Z}_{\text {S }}$ |  |  | 50 |  | $\Omega$ |
| Load impedance | $\mathrm{Z}_{\mathrm{L}}$ |  |  | 50 |  | $\Omega$ |
| Specification Temperature Range | $\mathrm{T}_{\mathrm{A}}$ |  | -30 |  | +85 | ${ }^{\circ} \mathrm{C}$ |


| Case Style | SM3030-6 $3 \times 3 \mathrm{~mm}$ Nominal Footprint |
| :--- | :---: |
| Lid Symbolization (Y=year, WW=week, S=Shift) | 454 YWWS |
| Standard Reel Quantity Reel Size 7 Inch | 500 Pieces Per Reel |
| Reel Size 13 Inch |  |

## Electrical Connections

| Connection | Terminals |
| :--- | :---: |
| Input | 2 |
| Output | 5 |
| Ground | All others |

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling. NOTES:

1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to $50 \Omega$ and measured with $50 \Omega$ network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, fc.
3. The design, manufacturing process, and specifications of this filter are subject to change.
[^0]
## Frequency Characteristics:

## Transfer Function





## Reflections Functions:

## S11 VSWR



CH1 Marker=

1. $1: 15.50471$



## S22 VSWR



CH1 Harkers
$1: 21.03 \bar{s}$
$1: 281.035$
1.71000 EHz
1



Tape and Reel Specifications


## SM3030-6 Case

## 6-Terminal Ceramic Surface-Mount Case <br> $3.0 \times 3.0$ mm Nominal Footprint



Case Dimensions

| Dimension | mm |  |  | Inches |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Min | Nom | Max | Min | Nom | Max |
| A | 2.87 | 3.00 | 3.13 | 0.113 | 0.118 | 0.123 |
| B | 2.87 | 3.00 | 3.13 | 0.113 | 0.118 | 0.123 |
| C | 1.12 | 1.25 | 1.38 | 0.044 | 0.049 | 0.054 |
| D | 0.77 | 0.90 | 1.03 | 0.030 | 0.035 | 0.040 |
| E | 2.67 | 2.80 | 2.93 | 0.105 | 0.110 | 0.115 |
| F | 1.47 | 1.60 | 1.73 | 0.058 | 0.063 | 0.068 |
| G | 0.72 | 0.85 | 0.98 | 0.028 | 0.033 | 0.038 |
| H | 1.37 | 1.50 | 1.63 | 0.054 | 0.059 | 0.064 |
| I | 0.47 | 0.60 | 0.73 | 0.019 | 0.024 | 0.029 |
| J | 1.17 | 1.30 | 1.43 | 0.046 | 0.051 | 0.056 |

Electrical Connections

| Connection |  | Terminals |
| :--- | :--- | :---: |
| Port 1 | Single Ended Input | 2 |
| Port 2 | Single Ended Output | 5 |
|  | Ground | All others |

Single Ended Operation Only
Dot indicates Pin 1

TOP VIEW


BOTTOM VIEW



[^0]:    4. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
    5. US and international patents may apply.
    6. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd
