



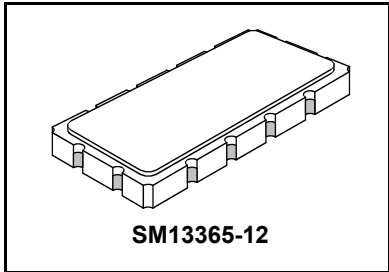
AEC-Q200
 This component was always
 RoHS compliant from the first
 date of manufacture.

- Precision IF SAW Filter
- Hermetic 13.3 x 6.5 mm Surface-mount Case
- Complies with Directive 2002/95/EC (RoHS)

RoHS
 Compliant

SF2229A

**70 MHz
 SAW Filter**



Absolute Maximum Ratings

| Rating | Value | Units |
|--|-----------------|-------|
| Maximum Incident Power in Passband | +20 | dBm |
| Maximum DC Voltage on any Non-ground Terminal | 10 | VDC |
| Storage Temperature Range of Component | -55 to +95 | °C |
| Storage Temperature Range in Tape and Reel | -40 to +85 | °C |
| Suitable for Lead-free Soldering - Maximum Soldering Profile | 260 °C for 30 s | |

Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|---------------------------------------|-----------|-------|------|------|------|-------------------|
| Center Frequency | f_C | | 69.9 | 70.0 | 70.1 | MHz |
| 1 dB Bandwidth | BW_1 | | 0.8 | 0.92 | | |
| 3 dB Bandwidth | BW_3 | | 1.1 | 1.2 | | |
| 40 dB Bandwidth | BW_{40} | | | 2.2 | 2.3 | |
| Insertion Loss | IL | | | 10.5 | 12.0 | dB |
| Amplitude Ripple, $f_C \pm 0.3$ MHz | | | | 0.7 | 1.2 | dB _{p-p} |
| Group Delay Ripple, $f_C \pm 0.3$ MHz | | | | 350 | 400 | ns _{p-p} |
| Relative Attenuation: | | | | | | dB |
| 10 to 65 MHz | | | 45 | 55 | | |
| 75 to 200 MHz | | | 45 | 55 | | |
| Operating Temperature Range | | | -55 | | +95 | °C |
| Frequency Temperature Coefficient | | | | -94 | | ppm/°C |

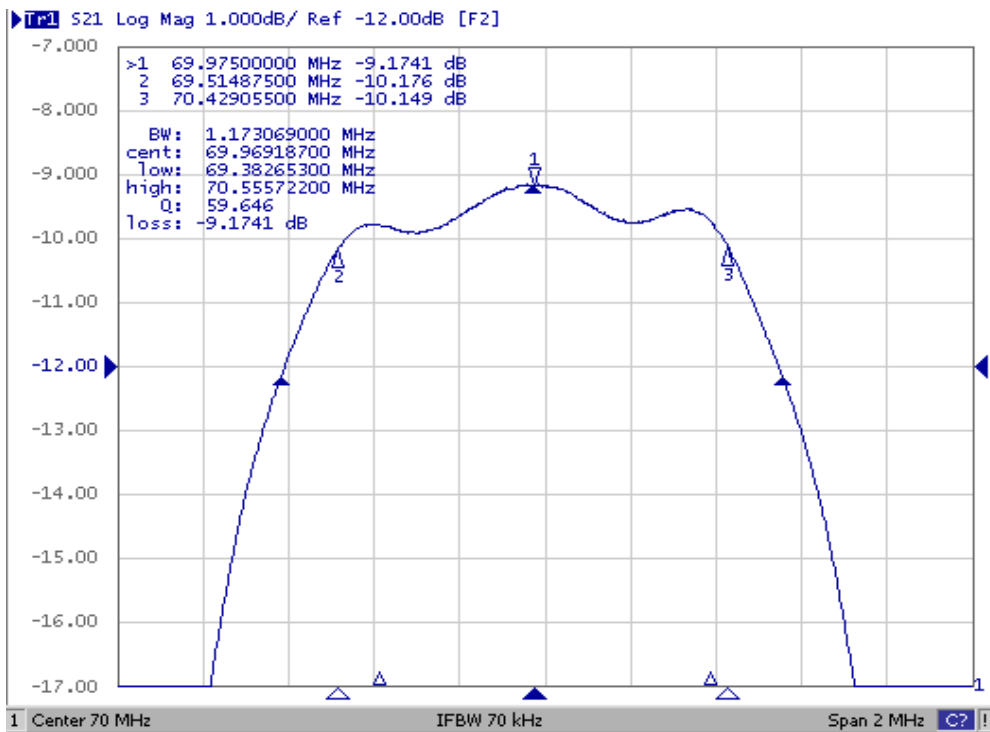
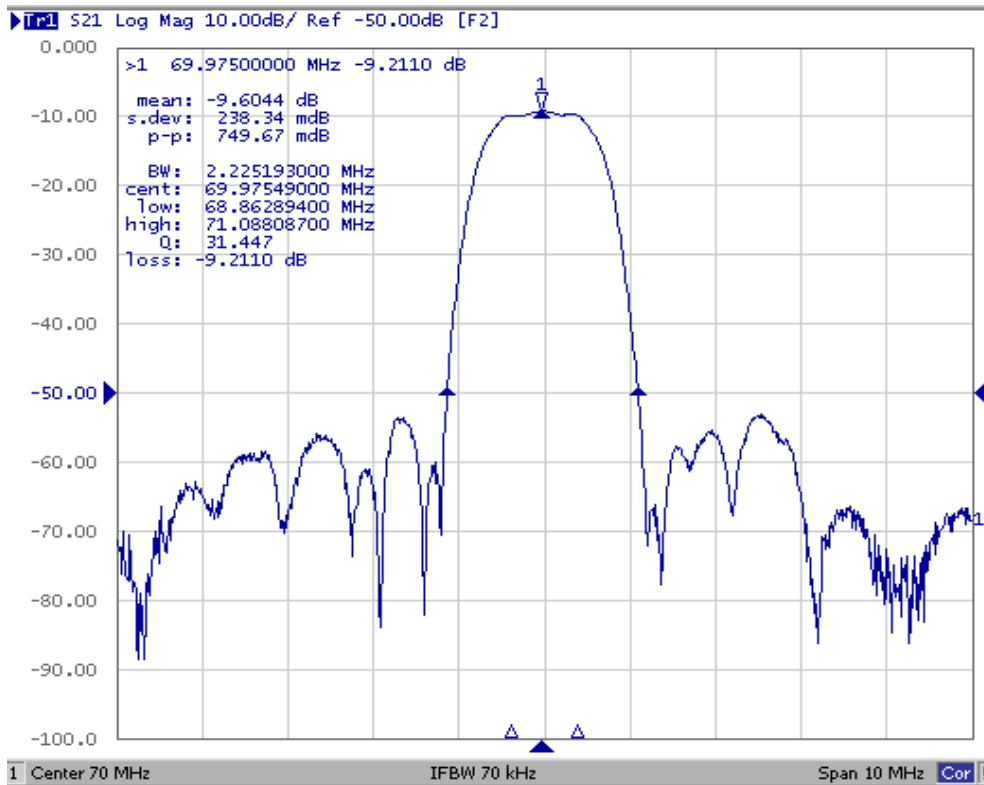
| | |
|---|--|
| Impedance Matching to 50 Ω Unbalanced Source/Load | External L-C |
| Case Style | SM13365-12 13.3 x 6.5 mm Nominal Footprint |
| Lid Symbolization (YY = year, WW = week, S = shift) | RFM, SF2229A, YYWWS |

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

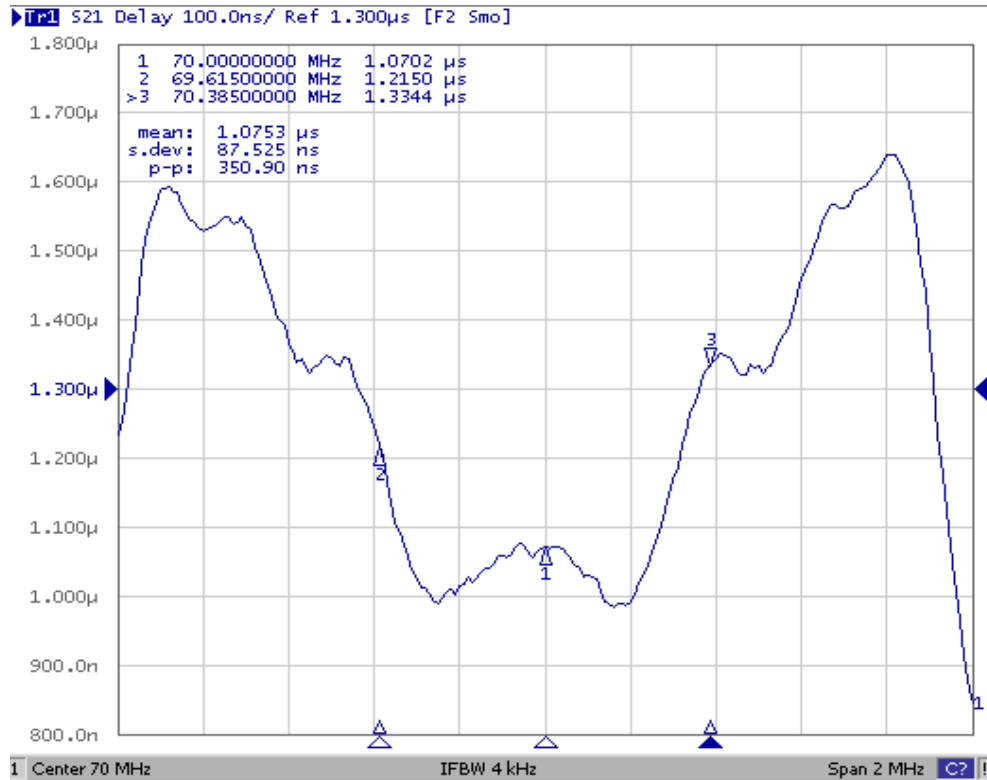
NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

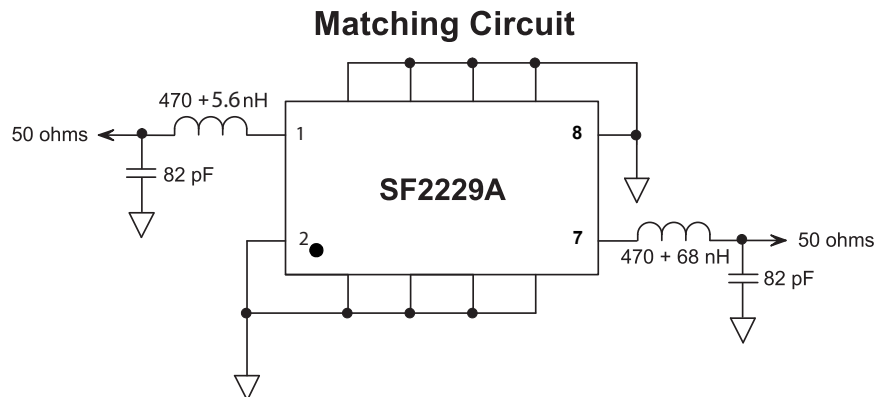
Filter Amplitude Response Plots



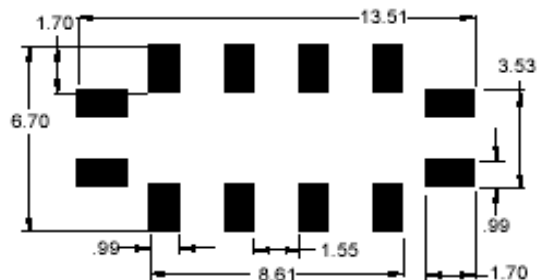
Filter Group Delay Plot



Tuning Component Values

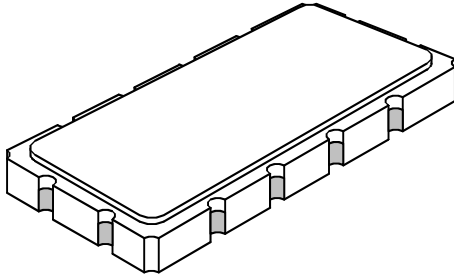


PCB Pad Layout



SM13365-12 Ceramic Surface-mount 12-Terminal Case

13.3 x 6.5 mm Nominal Footprint



Case Dimensions

| Dimension | mm | | | Inches | | |
|-----------|-------|-------|-------|--------|-------|-------|
| | Min | Nom | Max | Min | Nom | Max |
| A | 13.10 | 13.30 | 13.50 | 0.516 | 0.524 | 0.531 |
| B | 6.30 | 6.50 | 6.70 | 0.248 | 0.256 | 0.264 |
| C | | | 1.80 | | | 0.071 |
| D | | 1.50 | | | 0.059 | |
| E | | 0.80 | | | 0.031 | |
| H | | 0.80 | | | 0.031 | |
| P | | 2.54 | | | 0.100 | |

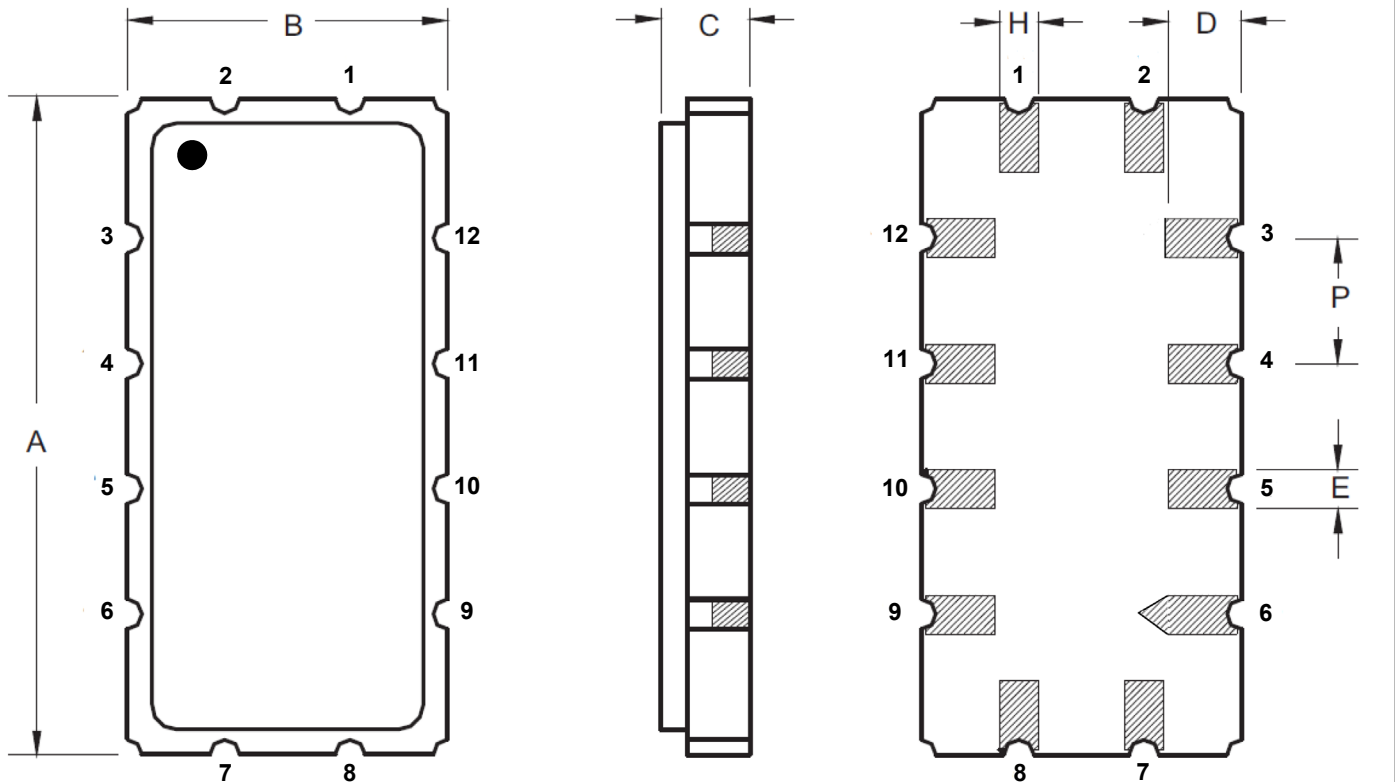
Electrical Connections

| Connection | Terminals |
|---------------|---------------------------|
| Input | 1 |
| Input Ground | 2 |
| Output | 7 |
| Output Ground | 8 |
| Case Ground | 3, 4, 5, 6, 9, 10, 11, 12 |

Case Material

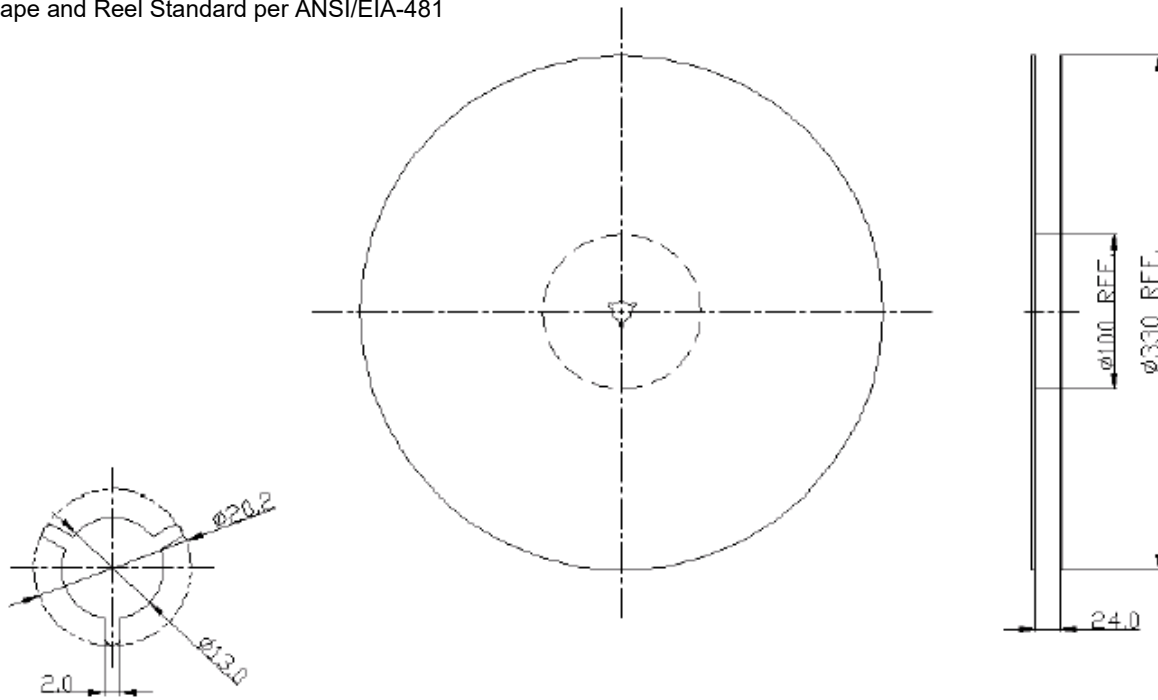
| Materials | |
|--------------------|--|
| Solder Pad Plating | 0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel |
| Lid Plating | 2.0 to 3.0 μm Nickel |
| Body | Al_2O_3 Ceramic |
| Pb Free | |

Case Outline Drawing

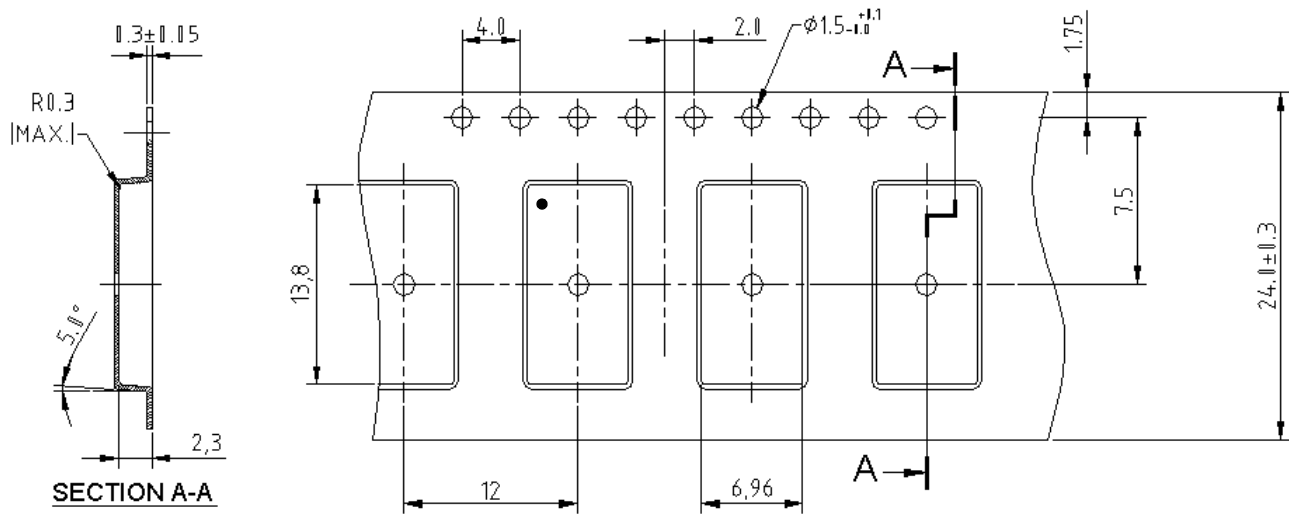


Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481



13.3X6.5



Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

