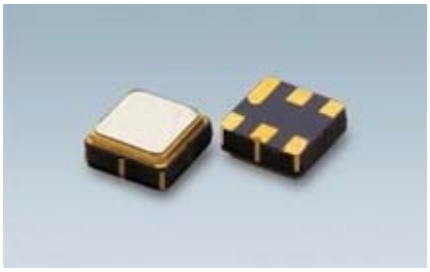
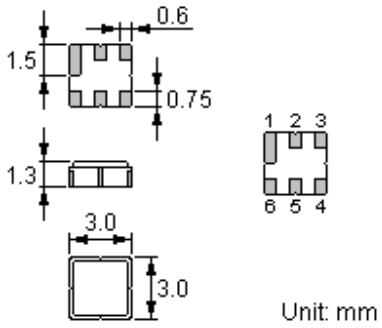
## Features

- Low-loss RF filter
- Low amplitude ripple
- No matching network required for operation at 50Ω
- Ceramic package for **S**urface **M**ounted **T**echnology (**SMT**)
- Lead-free production and **RoHS** compliant



## Package Dimensions

Ceramic Package: **DCC6C**




## Pin Configuration

| | |
|---|---|
| 2 | Input |
| 5 | Output |
| 1, 3, 4, 6 | Ground |

## Marking


Top View, Laser Marking

"**ND**": Manufacturer's mark "**F**": SAW filter

"**9132**": Part number

# NDF9132

## Maximum Ratings

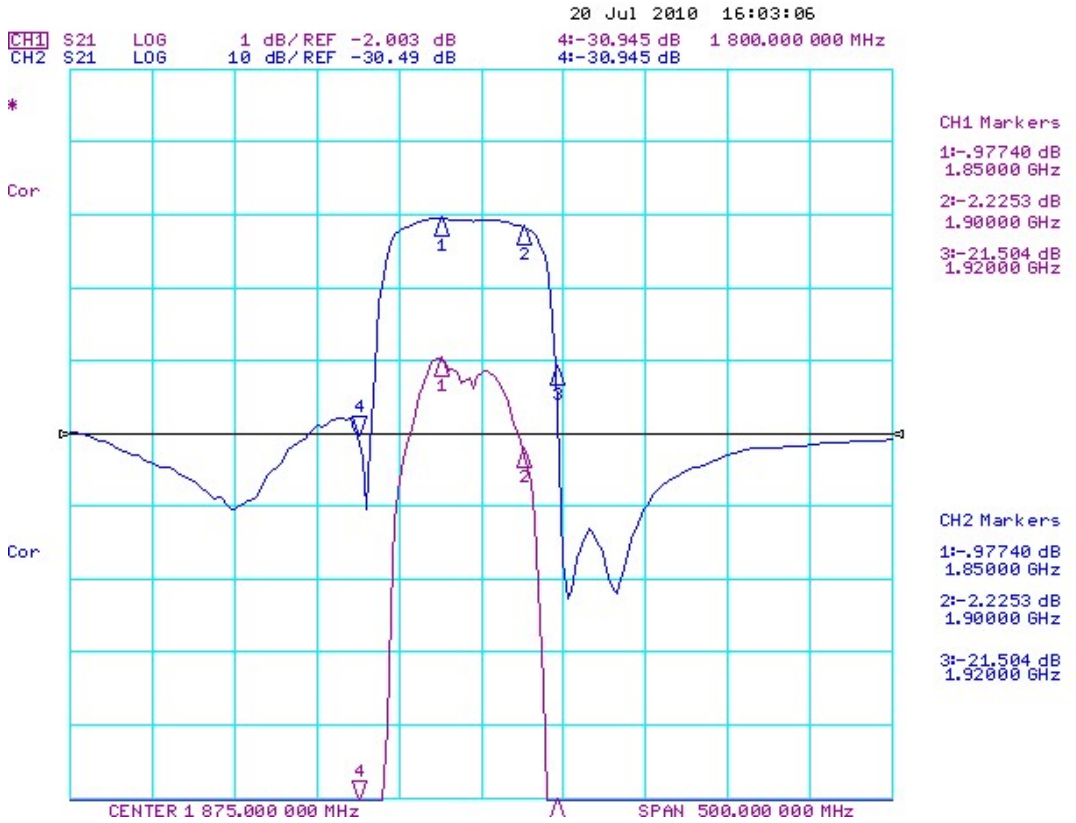
| Rating | | Value | Unit |
|---|---|---|---|
| Input Power Level | $P$ | 10 | dBm |
| DC Voltage | $V_{DC}$ | 5 | V |
| Operating Temperature Range | $T_A$ | -40 ~ +85 | °C |
| Storage Temperature Range | $T_{stg}$ | -40 ~ +85 | °C |

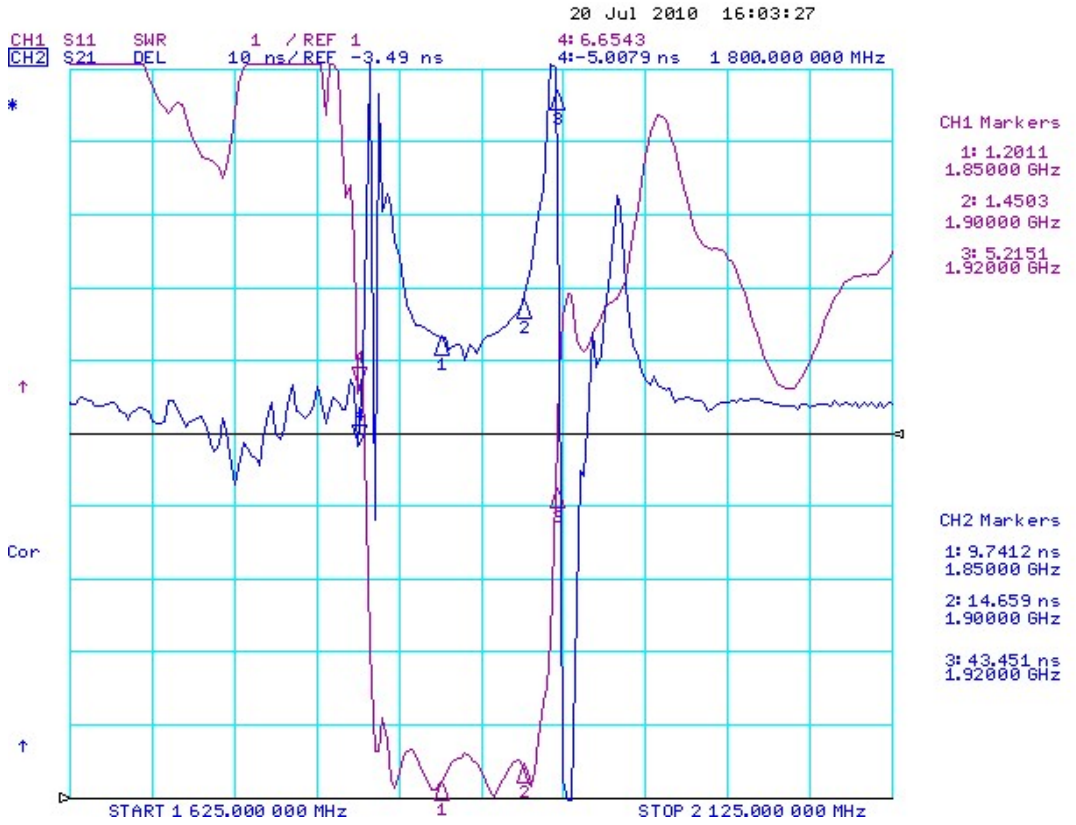
## Electrical Characteristics

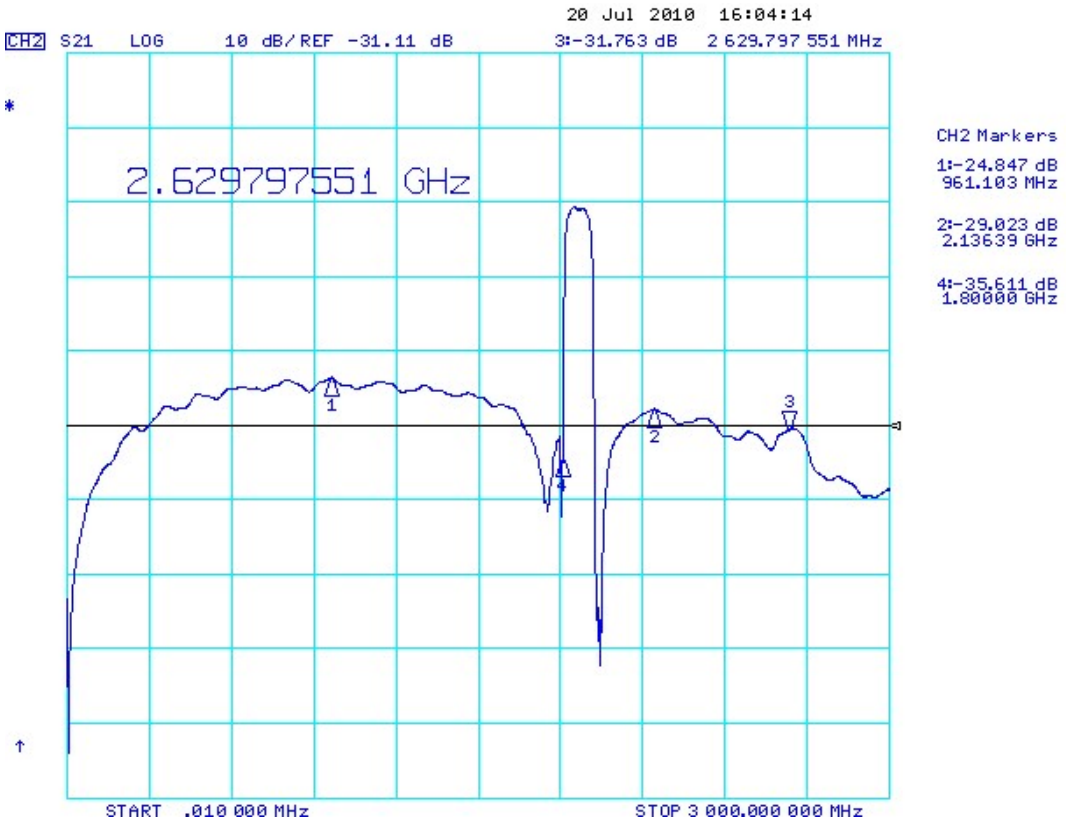
| Item | | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Center Frequency | $f_C$ | | 1875 | | MHz |
| Insertion Loss | *IL* | | | | |
| 1850.00 …. 1900.00 MHz | | | 2.2 | 3.5 | dB |
| Absolute Attenuation | *α* | | | | |
| DC …. 1500.00 MHz | | 20 | 24 | | dB |
| 1500.00 …. 1800.00 MHz | | 20 | 24 | | dB |
| 1920.00 …. 2000.00 MHz | | 17** | 20 | | dB |
| 2000.00 …. 2100.00 MHz | | 25 | 29 | | dB |
| 2100.00 …. 3000.00 MHz | | 25 | 29 | | dB |
| Amplitude Ripple (p-p) 1850.00 …. 1900.00 MHz | *Δα* | | 1.2** | 1.4** | dB |
| Input VSWR | | | | | |
| 1850.00 …. 1900.00 MHz | | -- | 1.7：1 | 2.0：1 | |
| Output VSWR | | | | | |
| 1850.00 …. 1900.00 MHz | | -- | 1.7：1 | 2.0：1 | |
| Input / Output Impedance (Nominal) | | | 50 | | Ω |

RoHS Compliant ** : +25℃ Electrostatic Sensitive Device

## Typical Frequency Response




20 Jul 2010 16:03:27
CH1 S11 SWR 1 / REF 1
CH2 S21 DEL 10 ns/ REF -3.49 ns
4: 6.6543
4:-5.0079 ns 1 800.000 000 MHz
CH1 Markers
1: 1.2011
1.85000 GHz
2: 1.4503
1.90000 GHz
3: 5.2151
1.92000 GHz
CH2 Markers
1: 9.7412 ns
1.85000 GHz
2: 14.659 ns
1.90000 GHz
3: 43.451 ns
1.92000 GHz
Cor
START 1 625.000 000 MHz
STOP 2 125.000 000 MHz


20 Jul 2010 16:04:14
CH2 S21 LOG 10 dB/ REF -31.11 dB
3:-31.763 dB 2 629.797 551 MHz
2.629797551 GHz
CH2 Markers
1:-24.847 dB
961.103 MHz
2:-29.023 dB
2.13639 GHz
4:-35.611 dB
1.80000 GHz
START .010 000 MHz
STOP 3 000.000 000 MHz

## Stability Characteristics

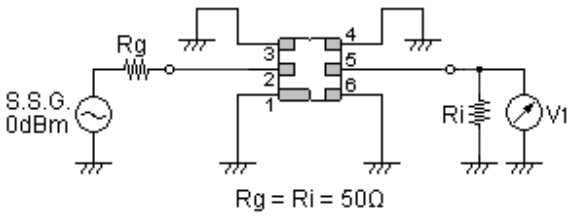
| | Test item | Condition of test |
|---|---|---|
| 1 | Mechanical shock | (a) Drops: 3 times on concrete floor<br>(b) Height: 1.0 m |
| 2 | Vibration resistance | (a) Frequency of vibration: 10~55Hz (b) Amplitude: 1.5 mm<br>(c) Directions: X,Y and Z (d) Duration: 2 hours |
| 3 | Moisture resistance | (a) Condition: 40°C, 90~95% R.H. (b) Duration: 96 hours<br>(c) Wait 4 hours before measurement |
| 4 | Climatic sequence | (a) +70°C for 16 hours (b) +55°C for 24 hours, 90~95% R.H.<br>(c) -25°C for 2 hours (d) +40°C for 24 hours, 90~95% R.H.<br>(e) Wait 4 hours before measurement |
| 5 | High temperature exposure | (a) Temperature: 70°C (b) Duration: 250 hours<br>(c) Wait 4 hours before measurement |
| 6 | Thermal impact | (a) +70°C for 30 minutes ⇒ -25°C for 30 minutes repeated 3 times<br>(b) Wait 4 hours before measurement |

**Requirements:** The SAW filer shall remain within the electrical specifications after tests.

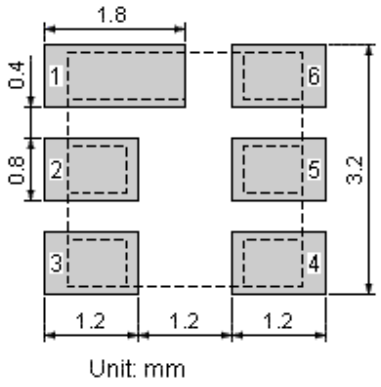
## Remarks

- SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.
- Be certain not to apply voltage exceeding the rated voltage of components.
- Do not operate outside the recommended operating temperature range of components.
- Sudden change of temperature shall be avoided, deterioration of the characteristics can occur.
- Be careful of soldering temperature and duration of components when soldering.
- Do not place soldering iron on the body of components.
- Be careful not to subject the terminals or leads of components to excessive force.
- SAW devices are electrostatic sensitive. Please avoid static voltage during operation and storage.
- Ultrasonic cleaning shall be avoided. Ultrasonic vibration may cause destruction of components.

## Test Circuit

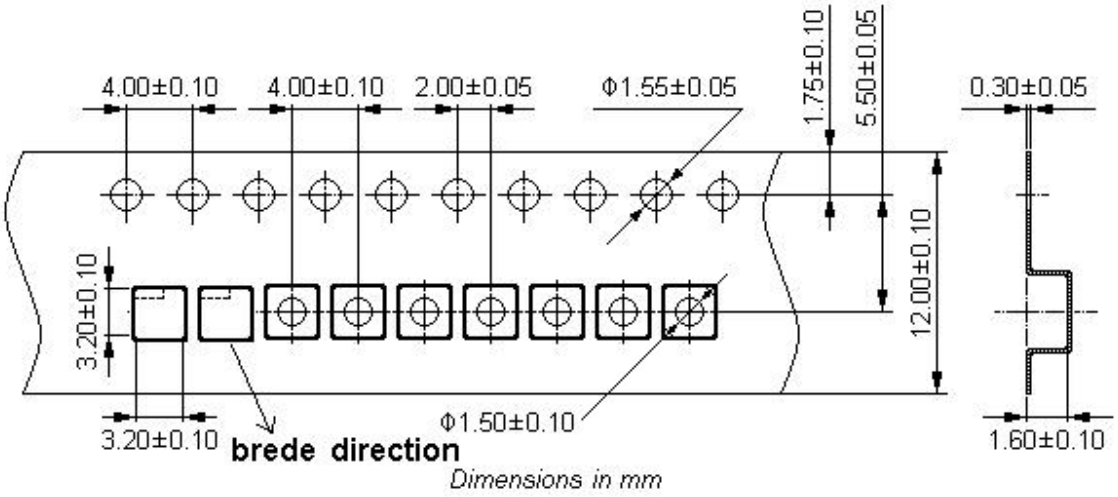



## Recommended Land Pattern

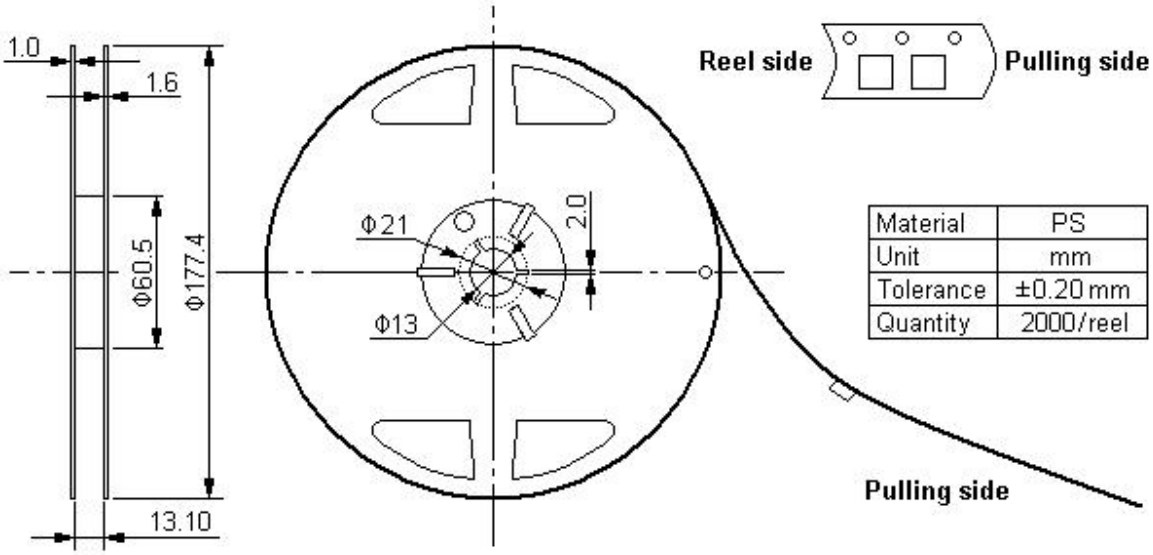


## Packing Information

Carrier Tape




Reel Dimensions

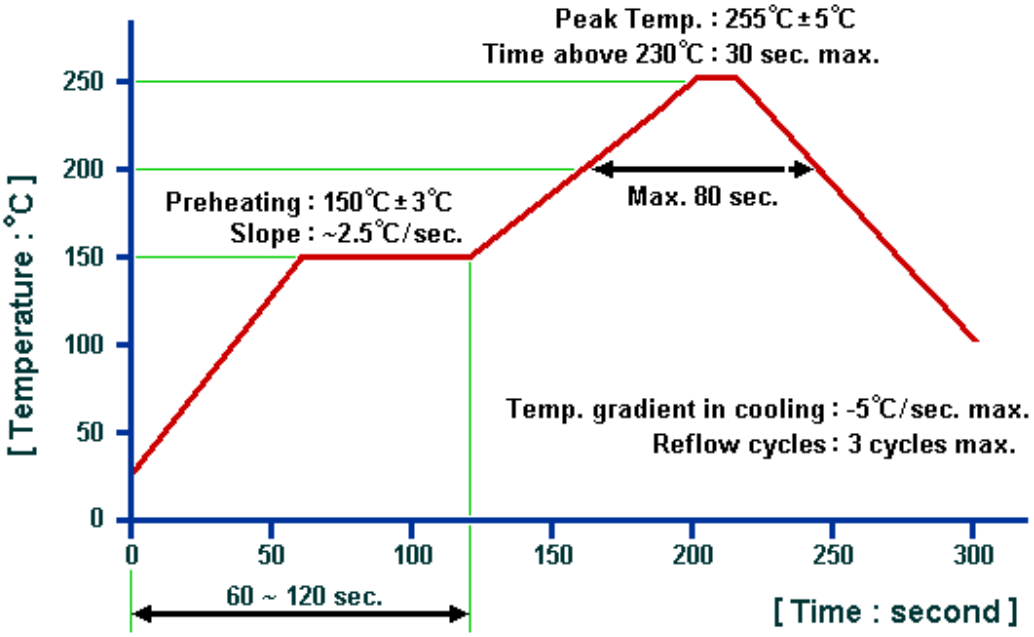



Outer Packing

| Type | Quantity | Dimension | Description | Weight |
|---|---|---|---|---|
| Carton Box Ⅰ | 10000 | 190×190×95 | anti-static plastic bag & carton box<br>1 reel / bag<br>5 bags / box (10000 pcs)<br>10 bags / box (20000 pcs) | 0.85 |
| Carton Box Ⅱ | 20000 | 190×190×190 | | 1.80 |

Unit: mm Unit: kg

**Recommended Soldering Profile**

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1. The specifications of this device are subject to change or obsolescence without notice.
2. Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
3. Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies.
4. For questions on technology, prices and delivery, please contact our sales offices or e-mail winnsky@winnsky.com