

## Features

- High stability and reliability with good performance and no adjustment
- RoHS compatible
- Low group delay ripple
- Low amplitude ripple
- Low-loss RF SAW filter for Beidou, GPS, GLONASS
- Usable passband 46.8 MHz
- Package for Surface Mount Technology (SMT)
- Package size 1.4mm\*1.1mm
- Electrostatic Sensitive Device (ESD)

## Electrical Specification

Temperature range for specification: T = -40 °C to + 105 °C

Terminating source impedance:  $Z_s = 50\Omega$

Terminating load impedance:  $Z_L = 50\Omega \parallel 8.2 \text{ nH}$

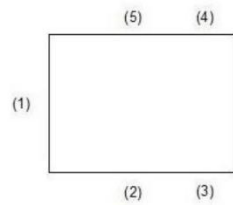
| ITEM               |                     | Min. | Typ. | Max. | Unit |
|--------------------|---------------------|------|------|------|------|
| Insertion Loss     | 1559.05~1563.15 MHz |      | 1.1  | 1.3  | dB   |
| Insertion Loss     | 1572.42~1578.42 MHz |      | 0.9  | 1.2  | dB   |
| Insertion Loss     | 1597.55~1605.89 MHz |      | 1.0  | 1.3  | dB   |
| Passband Ripple    | 1559.05~1563.15 MHz |      | 0.2  | 0.6  | dB   |
| Passband Ripple    | 1572.42~1578.42 MHz |      | 0.2  | 0.6  | dB   |
| Passband Ripple    | 1597.55~1605.89 MHz |      | 0.3  | 0.6  | dB   |
| VSWR               | 1559.05~1563.15 MHz |      | 1.7  | 2.1  | dB   |
| VSWR               | 1572.42~1578.42 MHz |      | 1.7  | 2.1  | dB   |
| VSWR               | 1597.55~1605.89 MHz |      | 1.7  | 2.1  | dB   |
| Group delay Ripple | 1597.55~1605.89 MHz |      | 3    | 11   | ns   |
| Attenuation        | 500.00~1500.00 MHz  | 20   | 27   |      | dB   |
| Attenuation        | 1710.00~5900.00 MHz | 20   | 25   |      | dB   |

## Maximum Ratings

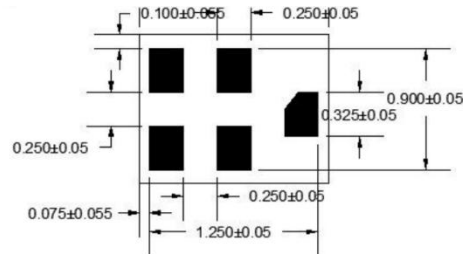
| Rating                             | Symbol    | Value            | Unit |
|------------------------------------|-----------|------------------|------|
| DC Voltage (between any Terminals) | $V_{DC}$  | 0                | V    |
| RF Power (in BW)                   | P         | 20dBm/55°C/5000h |      |
| Operating Temperature Range        | $T_A$     | -40 ~ + 125      | °C   |
| Storage Temperature Range          | Tstg      | -40 ~ + 125      | °C   |
| ESD Voltage (HB)                   | $V_{ESD}$ | >150             | V    |
| Moisture Sensitivity Levels        | MSL       | 2A               |      |

### Outline Drawing

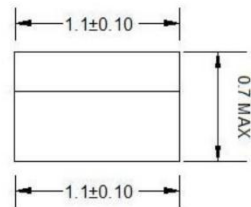
Unit: mm



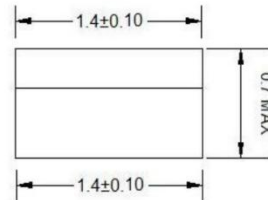
top view



bottom view



side view(left)



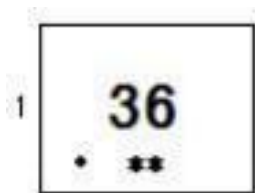
side view(front)

### Pin Configuration

| PIN#  | Description |
|-------|-------------|
| 1     | Input       |
| 4     | Output      |
| 2,3,5 | Ground      |



### Marking



### Top View, Laser Marking

“36”: Part Number

“.” Dot marking, indicates input

“1”: Terminal 1

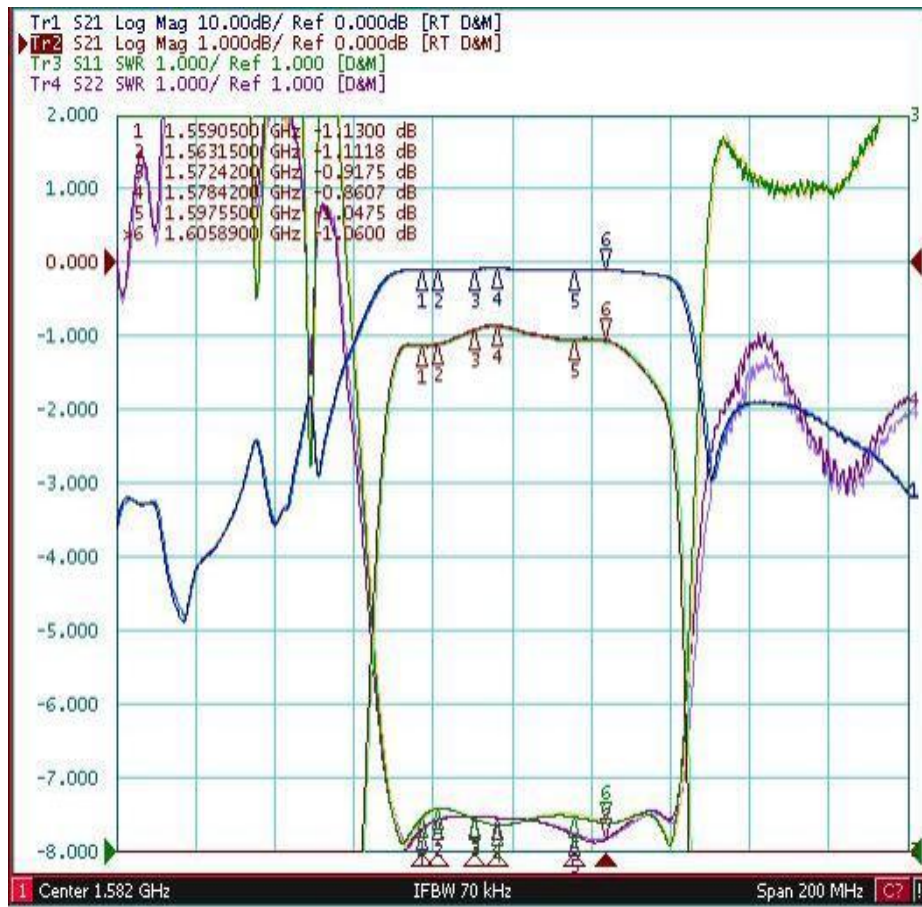
The first “\*”: Month Code (The code shown below varies in a 4-year-cycle)

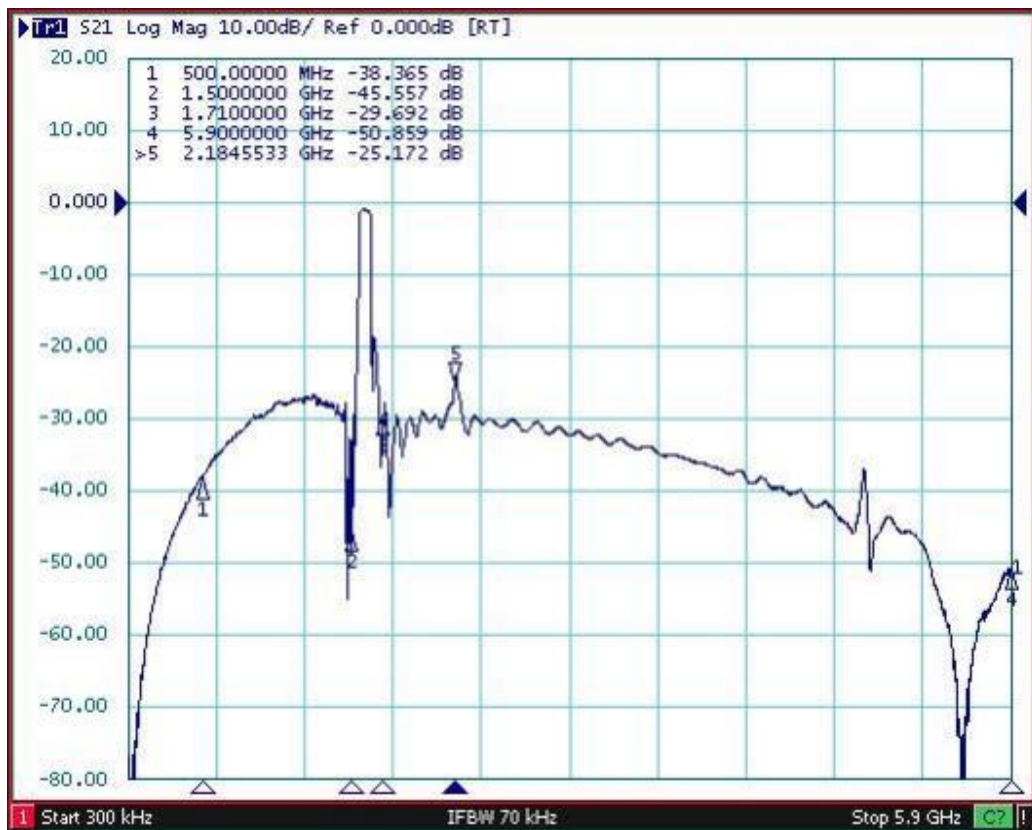
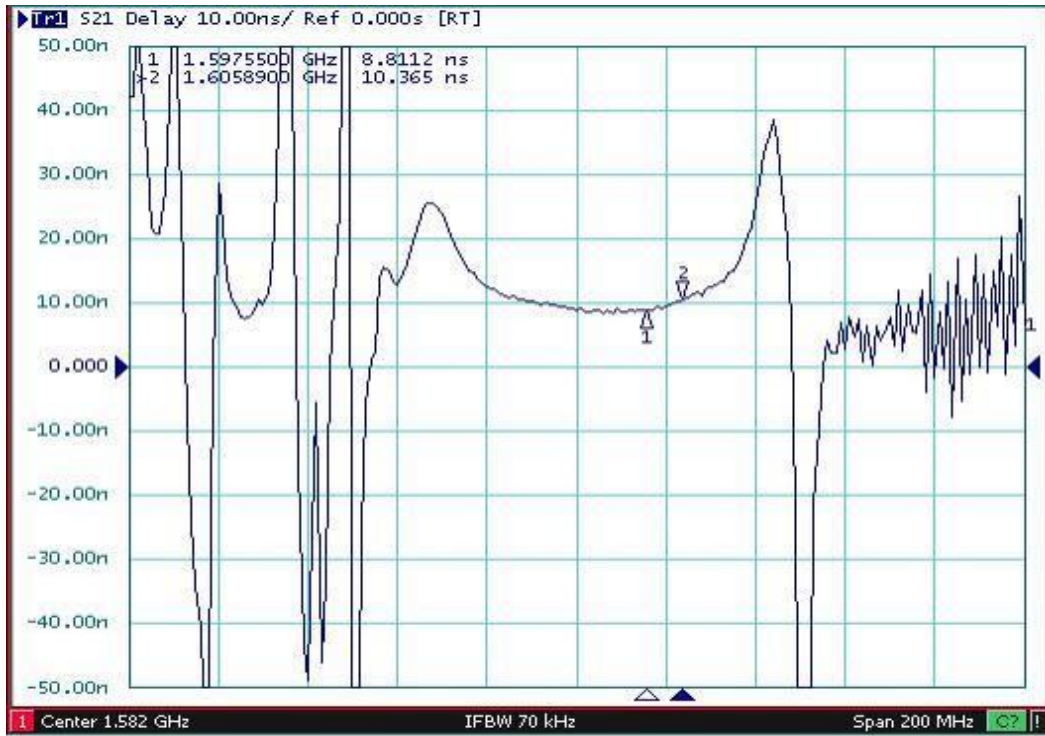
| Month     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-----------|---|---|---|---|---|---|---|---|---|----|----|----|
| 2016/2020 | n | p | q | r | s | t | u | v | w | x  | y  | z  |
| 2017/2021 | A | B | C | D | E | F | G | H | J | K  | L  | M  |
| 2018/2022 | N | P | Q | R | S | T | U | V | W | X  | Y  | Z  |
| 2019/2023 | a | b | c | d | e | f | g | h | i | j  | k  | m  |

The second “\*”: Date Code

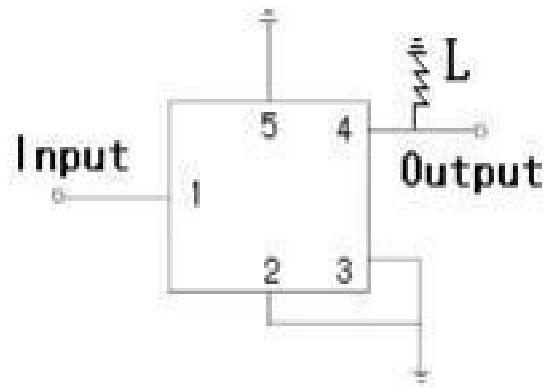
| Date | 1st  | 2nd  | 3rd  | 4th  | 5th  | 6th  | 7th  | 8th  | 9th  | 10th |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | A    | B    | C    | D    | E    | F    | G    | H    | J    | K    |      |
| Date | 11th | 12th | 13th | 14th | 15th | 16th | 17th | 18th | 19th | 20th |      |
| Code | L    | M    | N    | P    | Q    | R    | S    | T    | U    | V    |      |
| Date | 21st | 22nd | 23rd | 24th | 25th | 26th | 27th | 28th | 19th | 30th | 31st |
| Code | W    | X    | Y    | Z    | a    | b    | d    | e    | f    | g    | h    |

Typical Frequency Response



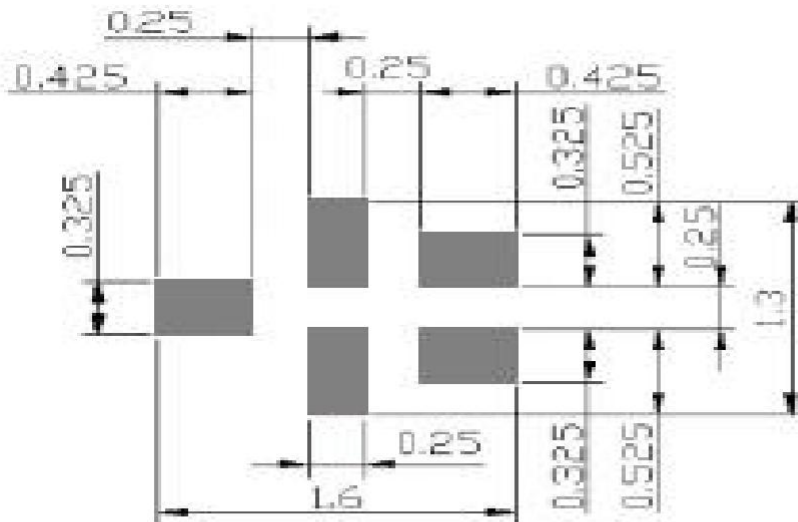


**Test Circuit**



L=8.2 nH

**Recommended Land Pattern**



■ : Land Pattern  
Unit : mm

### Stability Characteristics

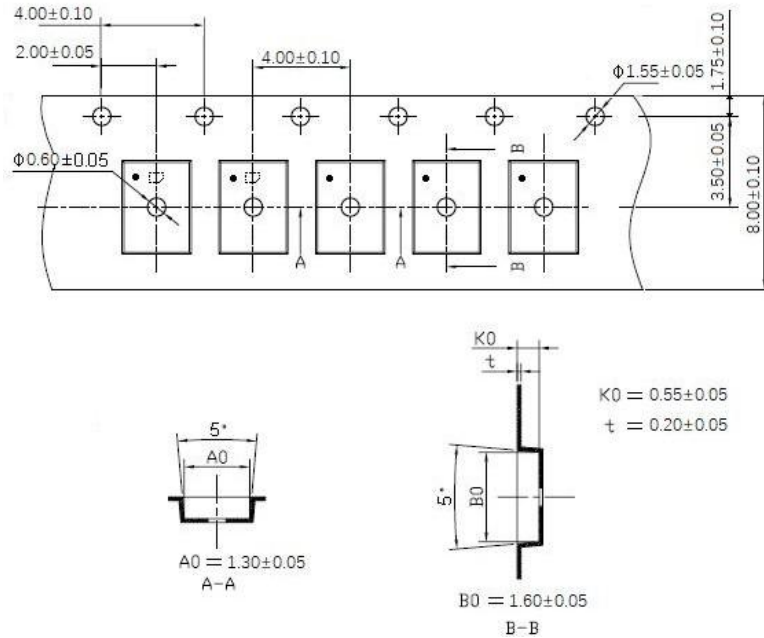
| ITEM | Test Item                    | STD Reference    | Test Conditions  | per lot    |
|------|------------------------------|------------------|--|------------|
|      | Preconditioning              | JESD22-A113      | 1) Temperature Cycling, 5 cycles -40°C to 85°C;<br>2) Bake, 24 hrs @85±5°C;<br>3)Moisture Soak, Soak time and conditions per IPC/JEDEC J-STD-020 based on device MSL level;<br>4) Reflow, 3 reflow cycles;<br>5) Drying, Room ambient temperature. | All behind |
| 1    | Temperature Cycling          | JESD22-A104      | -40°C / +85°C ,5°C/min, 15min dwell,< 1 min transfer time,500cycles  | 3*25 pcs   |
| 2    | High Temperature Storage     | JESD22-A103      | Temperature = 85°C, 1000 hours.  | 3*25 pcs   |
| 3    | Temperature Humidity no bias | JEDEC Std A101-B | 85°C 85%RH 240 hours   | 3*25 pcs   |
| 4    | Human Body Mode ESD          | JESD22-A114      | Ta=25°C, ≥100V   | 3 pcs      |
| 5    | Charge Device Mode ESD       | JESD22-C101      | Ta=25°C, ≥100V   | 3 pcs      |
| 6    | Solderability                | JESD22-B102      | Wetting: 245°C, 5s.  | 22 pcs     |
| 7    | Drop Test                    | JESD22-B111      | 1500 Gs, 0.5 millisecond duration, half-sine pulse.  | 20 pcs     |
| 8    | Mechanical Shock             | JESD-47          | Shock pulse of 1500g with pulse duration of 0.5+/-0. 1msec (X ,Y & Z); 5 shocks per axis.  | 3*25 pcs   |

### Remarks

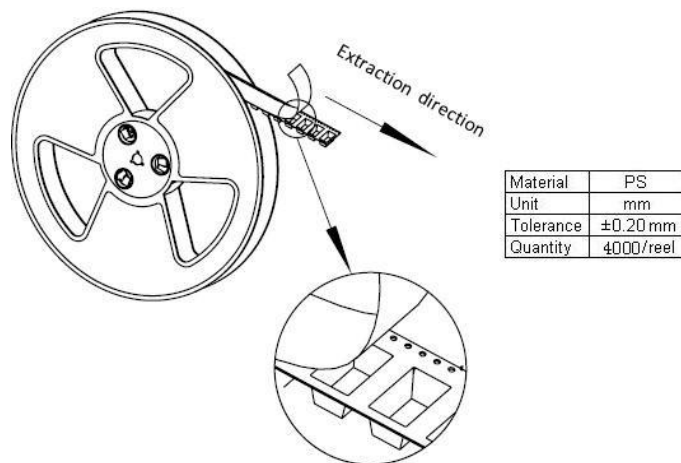
- SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.
- Be certain not to apply voltage exceeding the rated voltage of components.
- Do not operate outside the recommended operating temperature range of components.
- Sudden change of temperature shall be avoided, 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.

### Packing Information

#### Carrier Tape



#### Reel Dimensions

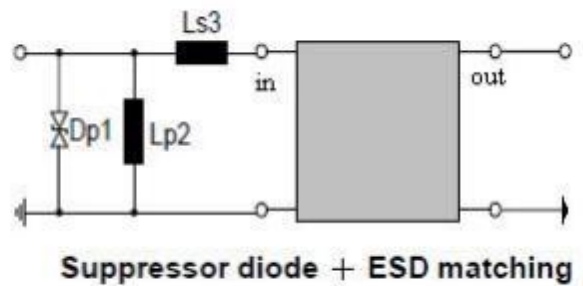
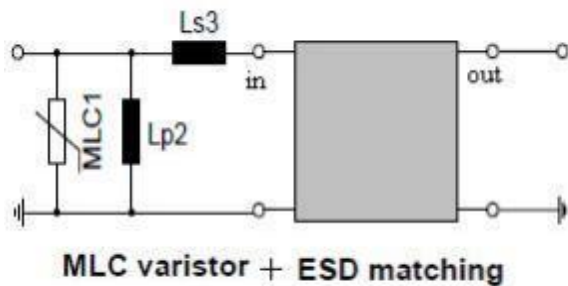


#### Outer Packing

| Type          | Quantity | Dimension     | Description   | Weight |
|---------------|----------|---------------|---|--------|
| Carton Box I  | 40000    | 240×210×285mm | anti-static plastic bag & carton box 1 reel / bag<br>10 bags / box (40000pcs) | 1.86kg |
| Carton Box II | 120000   | 470×310×285mm | 30 bags / box (120000pcs)   | 5.64kg |

### ESD protection

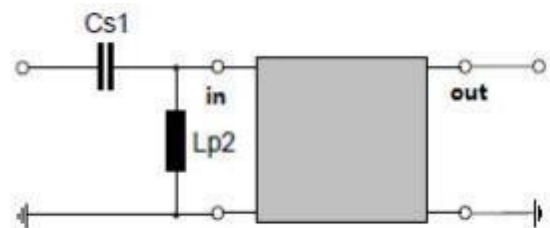
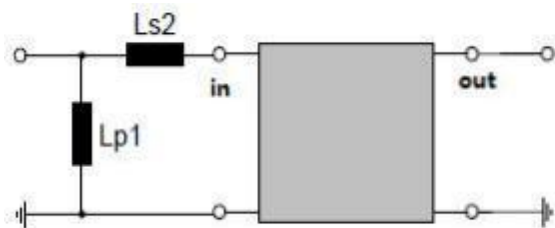
This product is electrostatic sensitive device. When you install or measure it, you should be careful not to add antistatic electricity or high voltage. Please be advised that you had better check anti surge voltage. To reduce the probability of damages caused by ESD, the following matching topologies should be applied .



“ESD matching” should be added to the filter port, where electrostatic discharge is expected . It predominantly appears at the antenna input of RF receivers . Therefore “ESD matching” should be designed to short circuit or block the ESD pulse.

Depending on the input impedance of the SAW filter and the source impedance, the needed component values have to be determined from case to case.

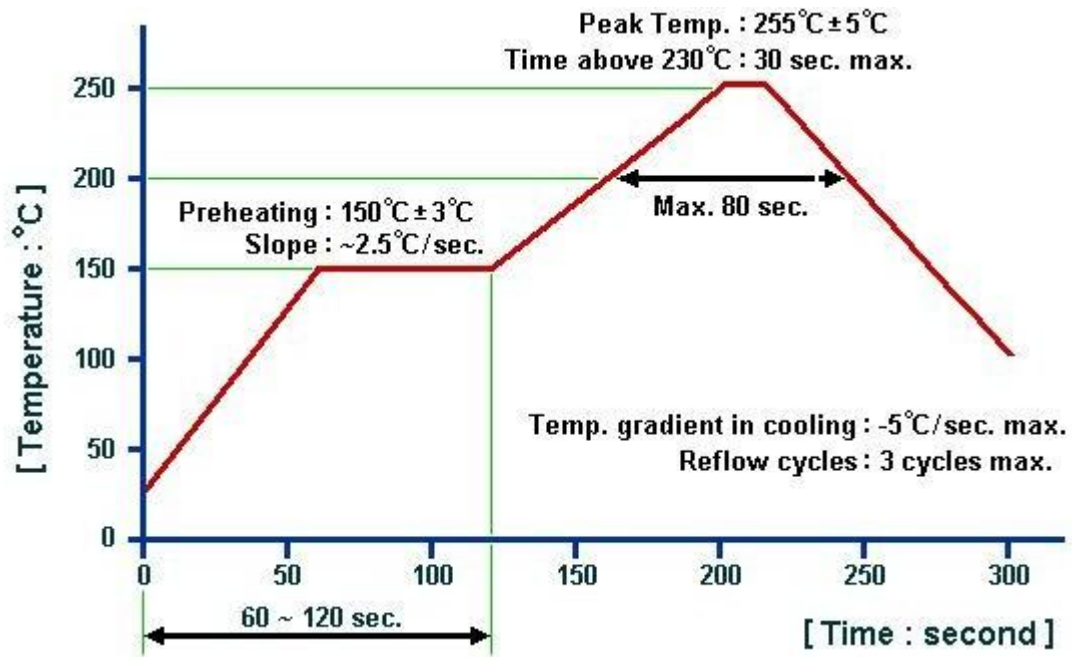
In cases where ESD is minor, the following simplified “ESD matching” topologies can be used .



Effectiveness of the applied ESD protection has to be checked according to relevant industry standards or customer specific requirements.



### Recommended Soldering Profile



#### Remarks:

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 [sales@sainty-tech.com](mailto:sales@sainty-tech.com).