



RF360
Europe GmbH

SAW components

SAW band stop filter
DVB-H / DVB-T

| | |
|----------------|-------------------|
| Series/type: | B1679 |
| Ordering code: | B39761B1679B510 |
| Date: | November 14, 2017 |
| Version: | 2.0 |

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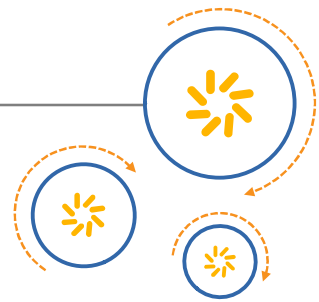
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SAW components**B1679****SAW band stop filter****760.00 MHz**

Data sheet

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B1679
SAW band stop filter
760.00 MHz

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1 Application

- Low-loss RF band-stop filter for Digital Dividend 2
- B8, B20 and B28 suppression
- Low insertion loss
- Low amplitude ripple
- Usable pass band width 224MHz
- Impedance at input and output 50Ω

2 Features

- Package size 3.0±0.1 mm × 3.0±0.1 mm
- Package height 1.1±0.125 mm
- Approximate weight 0.04 g
- RoHS compatible
- Package for Surface Mount Technology (SMT)
- Ni/Au-plated terminals
- Lead free soldering compatible with J-STD20C
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitivity Level 1 (MSL1)

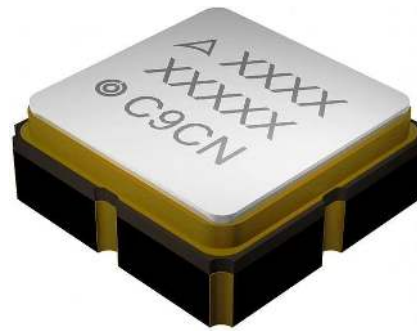
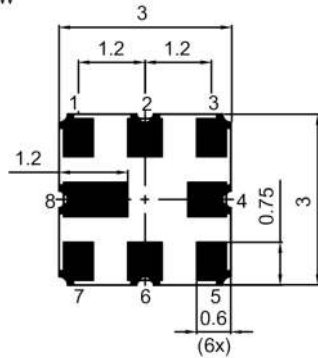


Figure 1: Picture of component with example of product marking.

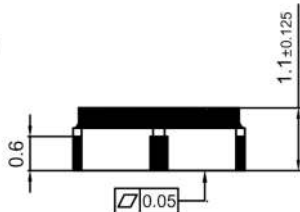
Data sheet

3 Package

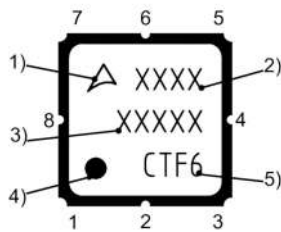
BOTTOM VIEW



SIDE VIEW



TOP VIEW



SIDE VIEW



- 1) Company logo
- 2) Device designation
- 3) Last five digits of the lot number
- 4) Marking for pad number 1
- 5) Example of production location and date code

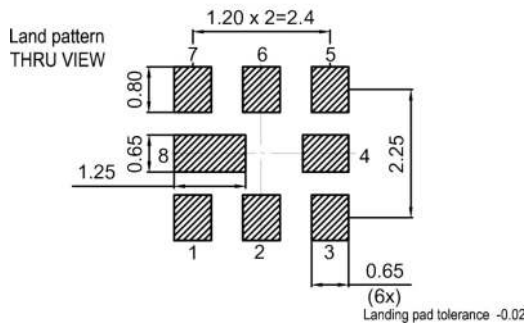


Figure 2: Drawing of package. See Sec. Package information (p. 16).

4 Pin configuration

- 1 Input
- 5 Output
- 2, 6 Shaping
- 3, 4, 7, 8 Ground

Data sheet

5 Matching circuit

- $C_{s1b} = 11 \text{ pF}$
- $C_{s5b} = 6.2 \text{ pF}$
- $L_{g2} = 11 \text{ nH}$
- $L_{g6} = 10 \text{ nH}$
- $L_{s1a} = 3.6 \text{ nH}$
- $L_{s5a} = 5.1 \text{ nH}$

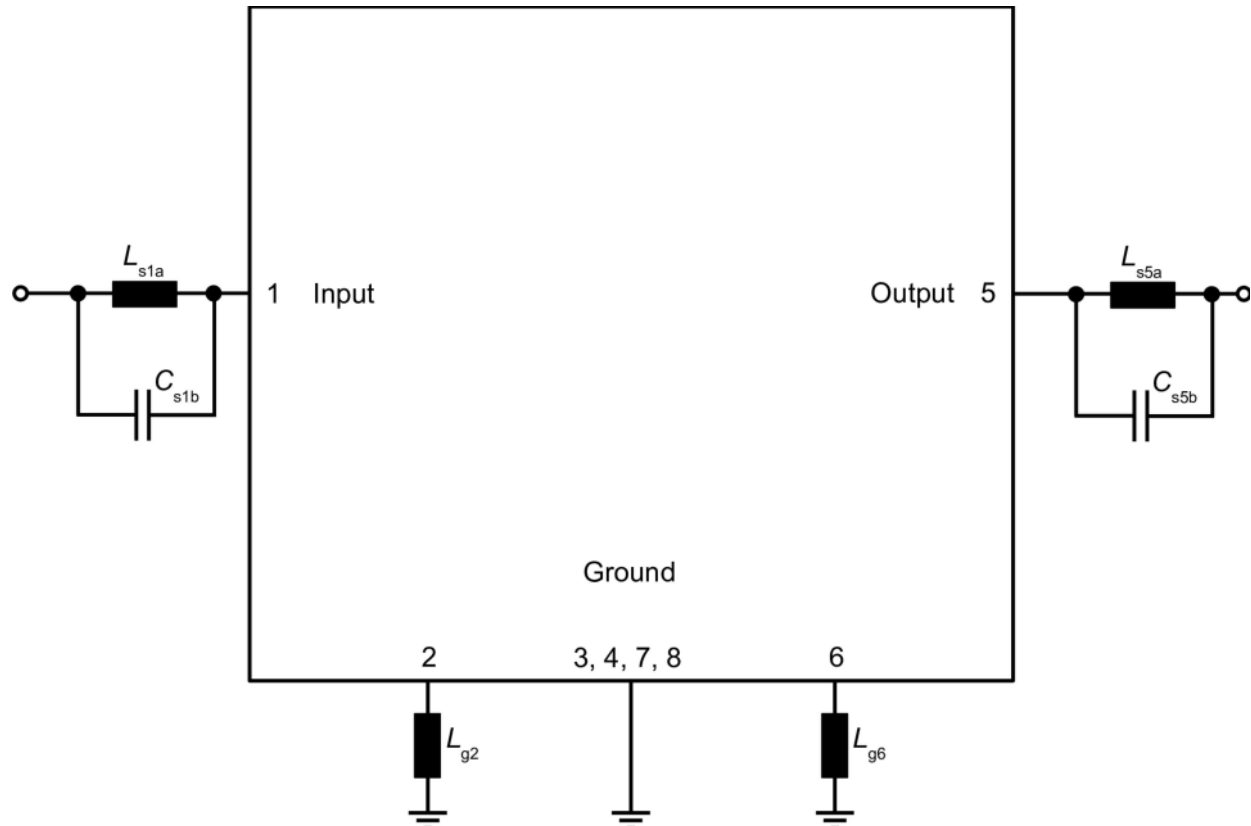


Figure 3: Schematic of matching circuit.

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6 Characteristics

Temperature range for specification

$$T_{\text{SPEC}} = -40\text{ °C} \dots +85\text{ °C}$$

Input terminating impedance

$$Z_{\text{IN}} = 50\ \Omega \text{ with ext. circuitry.}^{1)}$$

Output terminating impedance

$$Z_{\text{OUT}} = 50\ \Omega \text{ with ext. circuitry.}^{1)}$$

| Characteristics | | min. for T_{SPEC} | typ. @ +25 °C | max. for T_{SPEC} | |
|--------------------------------------|-----------------------|-------------------------------|------------------|-------------------------------|-----|
| Center frequency | f_c | — | 760 | — | MHz |
| Minimum insertion attenuation | α_{min} | | | | |
| | 470... 694 MHz | — | 1.3 | 2.0 | dB |
| Maximum insertion attenuation | α_{max} | | | | |
| | 470... 686 MHz | — | 2.2 | 3.0 | dB |
| | 686... 694 MHz | — | 6.0 | 10 | dB |
| Minimum attenuation | α_{min} | | | | |
| | 65... 230 MHz | 30 | 42 | — | dB |
| | 699... 703 MHz | 10 | 14 | — | dB |
| | 703... 733 MHz | 10 | 15 | — | dB |
| | 733... 758 MHz | 10 | 16 | — | dB |
| | 758... 788 MHz | 20 | 25 | — | dB |
| | 788... 803 MHz | 20 | 26 | — | dB |
| | 791... 821 MHz | 20 | 26 | — | dB |
| | 832... 862 MHz | 12 | 18 | — | dB |
| | 880... 915 MHz | 20 | 28 | — | dB |
| | 925... 960 MHz | 20 | 25 | — | dB |
| | 1710... 1990 MHz | 18 | 25 | — | dB |

¹⁾ See Sec. Matching circuit (p. 6).

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7 Maximum ratings

| | | |
|-------------------------------|---|--------------------------------------|
| Operable temperature | $T_{OP} = -45\text{ °C} \dots +125\text{ °C}$ | |
| Storage temperature | $T_{STG}^{1)} = -45\text{ °C} \dots +125\text{ °C}$ | |
| DC voltage | $ V_{DC} = 6.0\text{ V}$ | |
| ESD voltage | | |
| | $V_{ESD}^{2)} = 225\text{ V}$ | Machine model. |
| | $V_{ESD}^{3)} = 575\text{ V}$ | Human body model. |
| Input power | P_{IN} | |
| @ input port: 699 ... 821 MHz | 22 dBm ⁴⁾ | Continuous wave for 10000 h @ 85 °C. |
| @ input port: 832 ... 960 MHz | 28 dBm ⁴⁾ | Continuous wave for 10000 h @ 85 °C. |

¹⁾ Not valid for packaging material. Storage temperature for packaging material is -25 °C to +40 °C.

²⁾ According to JESD22-A115B (MM – Machine Model), 10 negative & 10 positive pulses.

³⁾ According to JESD22-A114F (HBM – Human Body Model), 1 negative & 1 positive pulse.

⁴⁾ Expected Life Time according to accelerated power durability simulation and wear out models.

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8 Transmission coefficient

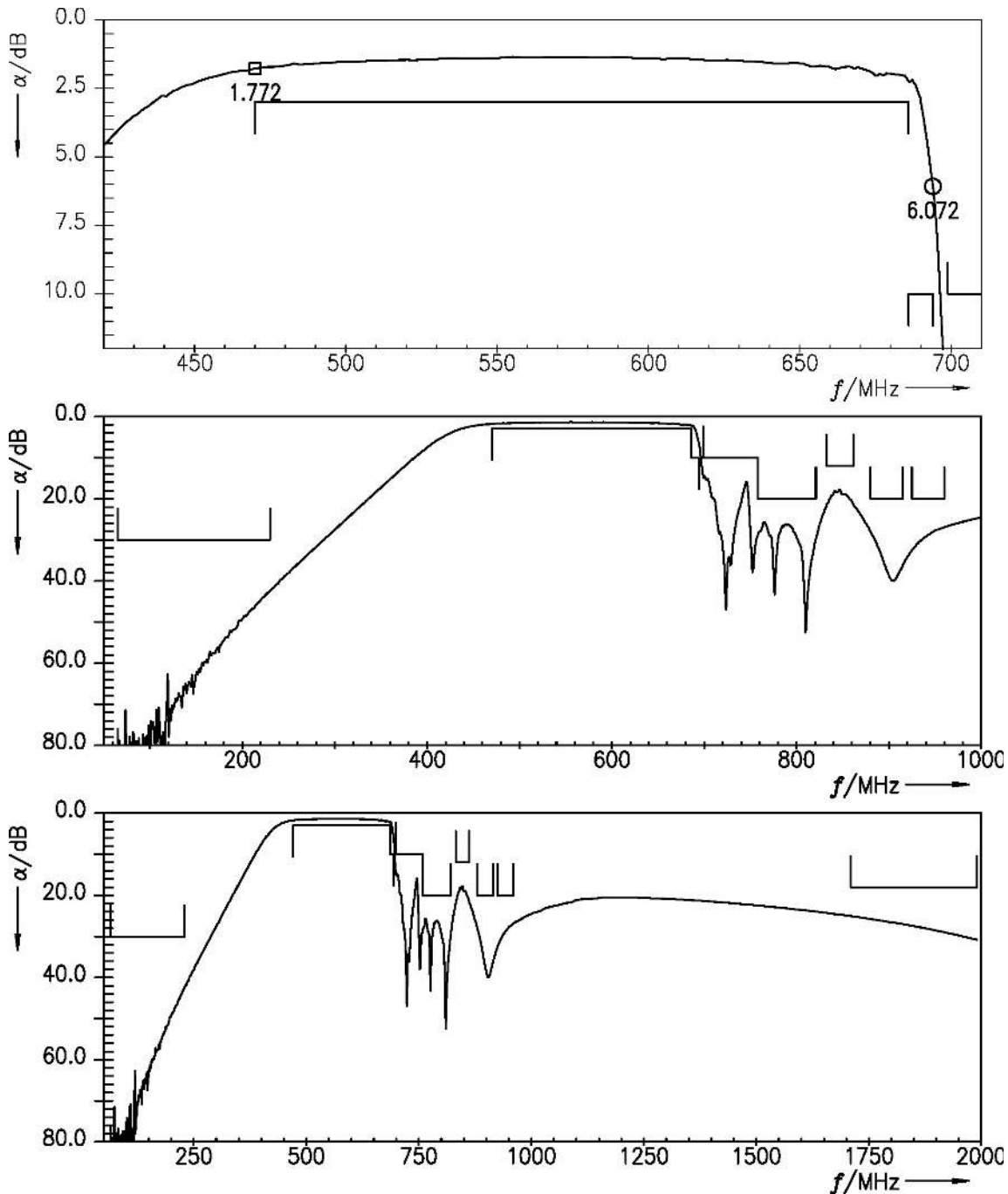


Figure 4: Attenuation.

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9 Packing material

9.1 Tape

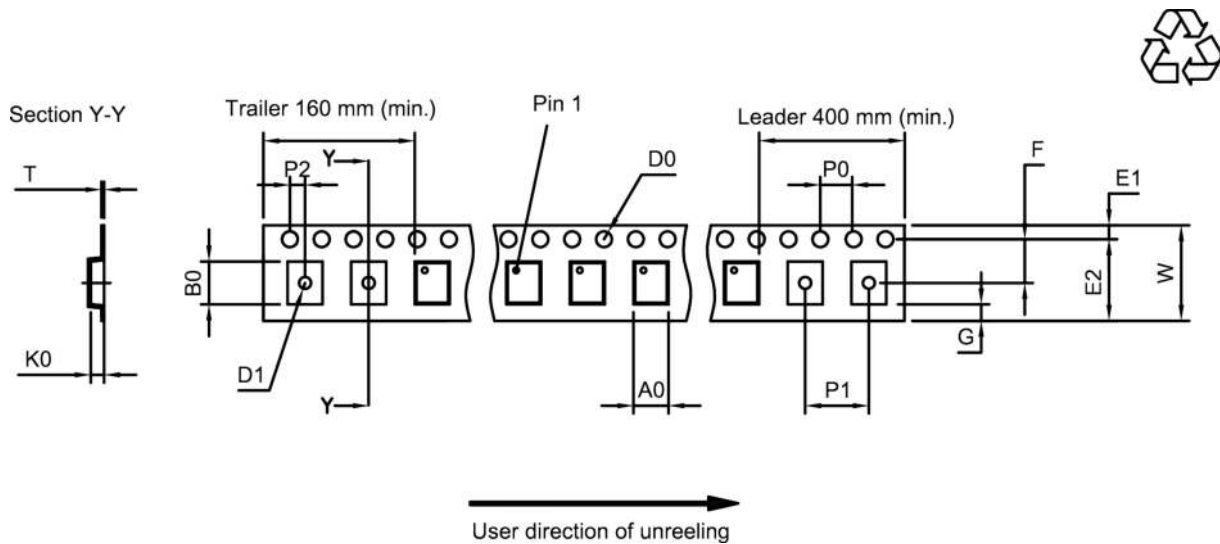


Figure 5: Drawing of tape (first-angle projection) with tape dimensions according to Table 1.

| | | | | | |
|----------------|---------------|----------------|-----------------|----------------|------------------|
| A ₀ | 3.25±0.1 mm | E ₂ | 10.25 mm (min.) | P ₁ | 4.0±0.1 mm |
| B ₀ | 3.3±0.1 mm | F | 5.5±0.05 mm | P ₂ | 2.0±0.1 mm |
| D ₀ | 1.5+0.1/-0 mm | G | 0.75 mm (min.) | T | 0.2±0.05 mm |
| D ₁ | 1.5 mm (min.) | K ₀ | 1.5±0.1 mm | W | 12.0+0.3/-0.1 mm |
| E ₁ | 1.75±0.1 mm | P ₀ | 4.0±0.1 mm | | |

Table 1: Tape dimensions.

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9.2 Reel with diameter of 180 mm

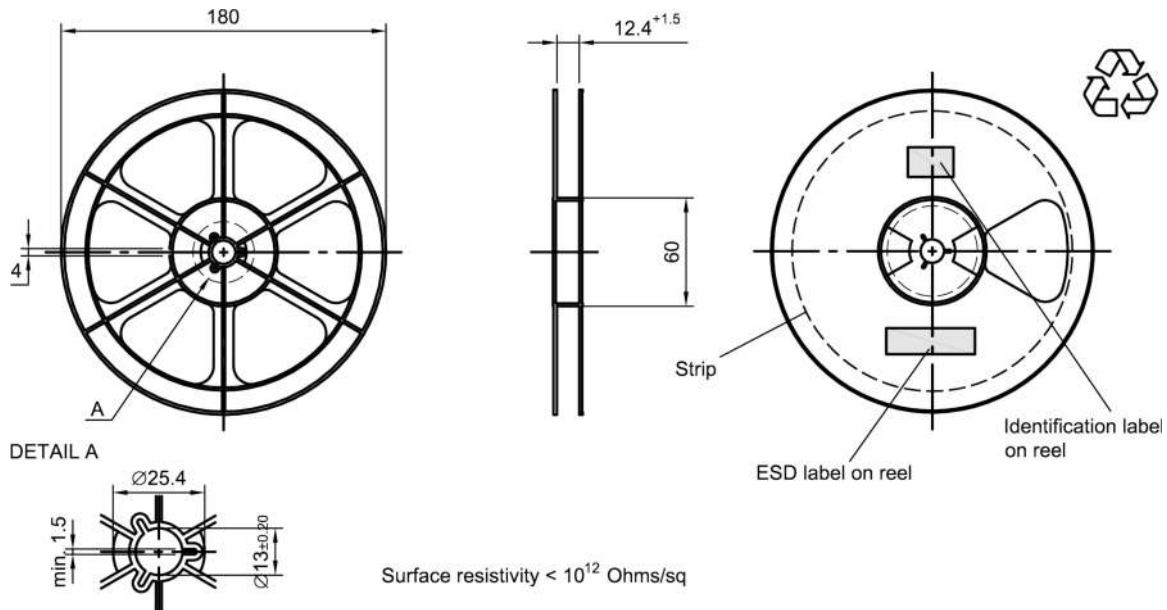
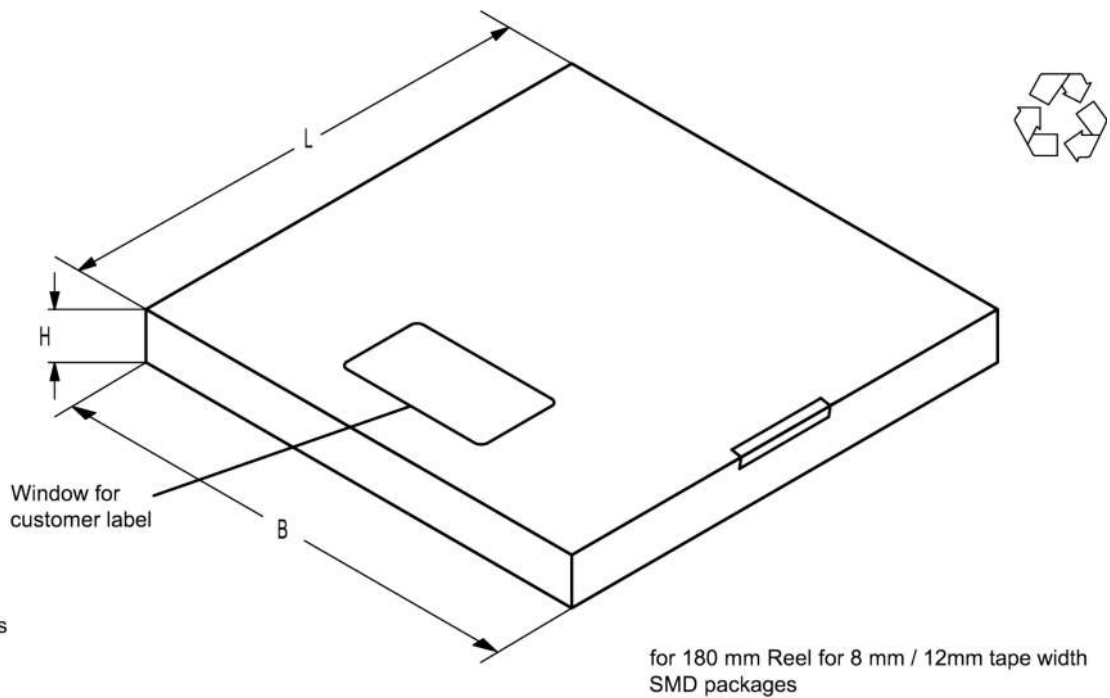


Figure 6: Drawing of reel (first-angle projection) with diameter of 180 mm.



Dimensions

- L = 182
- B = 185
- H = 26

Figure 7: Drawing of folding box for reel with diameter of 180 mm.

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9.3 Reel with diameter of 330 mm

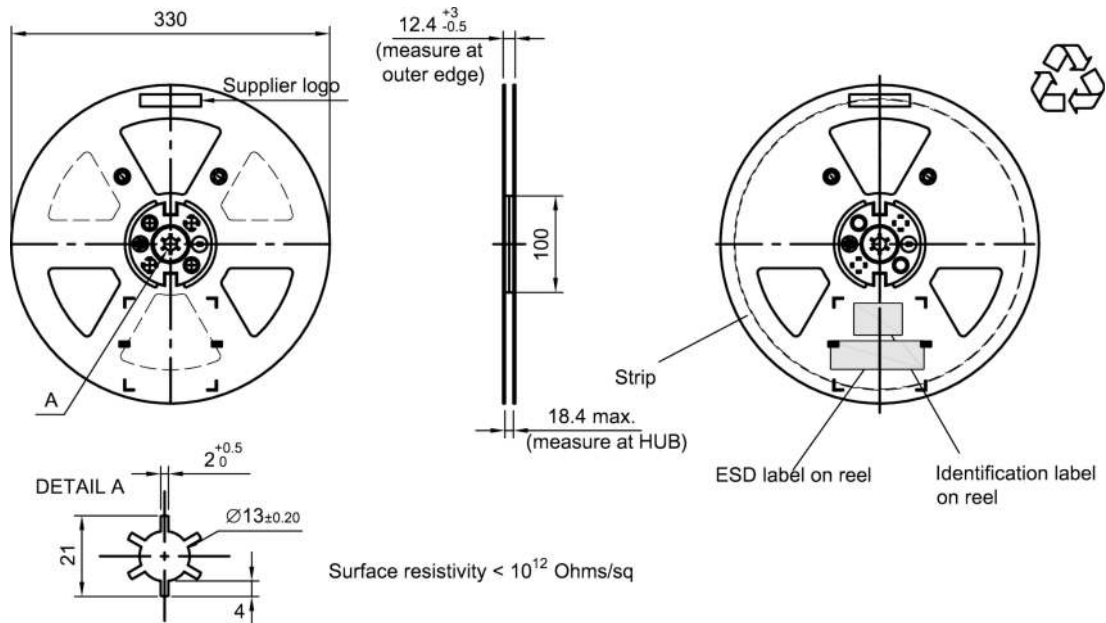
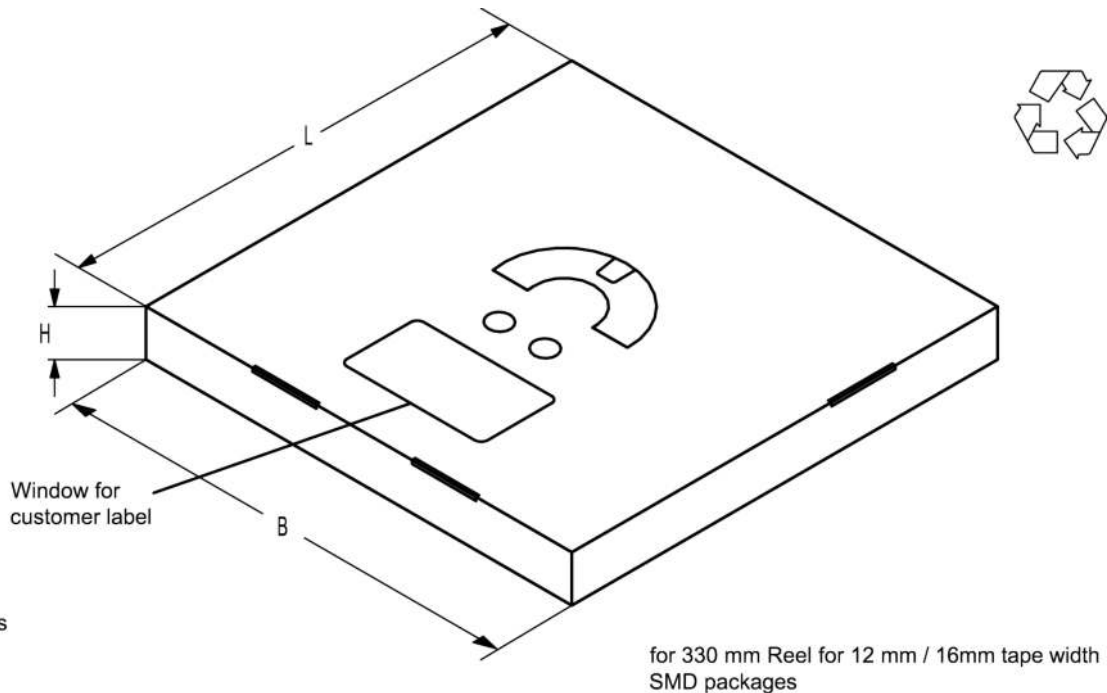


Figure 8: Drawing of reel (first-angle projection) with diameter of 330 mm.



Dimensions

- L = 340
- B = 340
- H = 25

for 330 mm Reel for 12 mm / 16mm tape width SMD packages

Figure 9: Drawing of folding box for reel with diameter of 330 mm.

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10 Marking

Products are marked with device designation, lot number, as well as production location and date code.

- Device designation: The 4-character device designation of the ordering code is used for the marking.

Example for 4-character device designation: B3xxxxB1234xxxx

- Lot number: The last 5 digits of the lot number are used for the marking.

Example: 12345

- Production location and date code: The production location is Wuxi (encoded in the first character 'C'). The production date code is encoded in the last three characters according to Table 2.

| 1 st digit (day) | | | | | | 2 nd digit (year) | | | | 3 rd digit (month) | | | |
|-----------------------------|------|-----|------|-----|------|------------------------------|------|-----------|------|-------------------------------|------|-------|------|
| Day | Code | Day | Code | Day | Code | Year | Code | Year | Code | Month | Code | Month | Code |
| 1 | 1 | 11 | A | 21 | M | 2010 | A | 2022 | P | Jan | 1 | Jul | 7 |
| 2 | 2 | 12 | B | 22 | N | 2011 | B | 2023 | R | Feb | 2 | Aug | 8 |
| 3 | 3 | 13 | C | 23 | P | 2012 | C | 2024 | S | Mar | 3 | Sep | 9 |
| 4 | 4 | 14 | D | 24 | R | 2013 | D | 2025 | T | Apr | 4 | Oct | 0 |
| 5 | 5 | 15 | E | 25 | S | 2014 | E | 2026 | U | May | 5 | Nov | N |
| 6 | 6 | 16 | F | 26 | T | 2015 | F | 2027 | V | Jun | 6 | Dec | D |
| 7 | 7 | 17 | H | 27 | U | 2016 | H | 2028 | W | | | | |
| 8 | 8 | 18 | J | 28 | V | 2017 | J | 2029 | X | | | | |
| 9 | 9 | 19 | K | 29 | W | 2018 | K | 2030 | Z | | | | |
| 10 | 0 | 20 | L | 30 | X | 2019 | L | 2031 | A | | | | |
| | | | | 31 | Z | 2020 | M | 2032 | B | | | | |
| | | | | | | 2021 | N | and so on | | | | | |

Table 2: Production date code.

Example of how to decode production location and date code:

Code: **C T F 6**

Location: C → Wuxi

Day: T → 26th

Year: F → 2015

Month: 6 → June

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11 Soldering profile

The recommended soldering process is in accordance with IEC 60068-2-58 – 3rd edit and IPC/JEDEC J-STD-020B.

| | |
|-------------------------------|--|
| ramp rate | ≤ 3 K/s |
| preheat | 125 °C to 220 °C, 150 s to 210 s, 0.4 K/s to 1.0 K/s |
| $T > 220$ °C | 30 s to 70 s |
| $T > 230$ °C | min. 10 s |
| $T > 245$ °C | max. 20 s |
| $T \geq 255$ °C | – |
| peak temperature T_{peak} | 250 °C +0/-5 °C |
| wetting temperature T_{min} | 230 °C +5/-0 °C for 10 s ± 1 s |
| cooling rate | ≤ 3 K/s |
| soldering temperature T | measured at solder pads |

Table 3: Characteristics of recommended soldering profile for lead-free solder (Sn95.5Ag3.8Cu0.7).

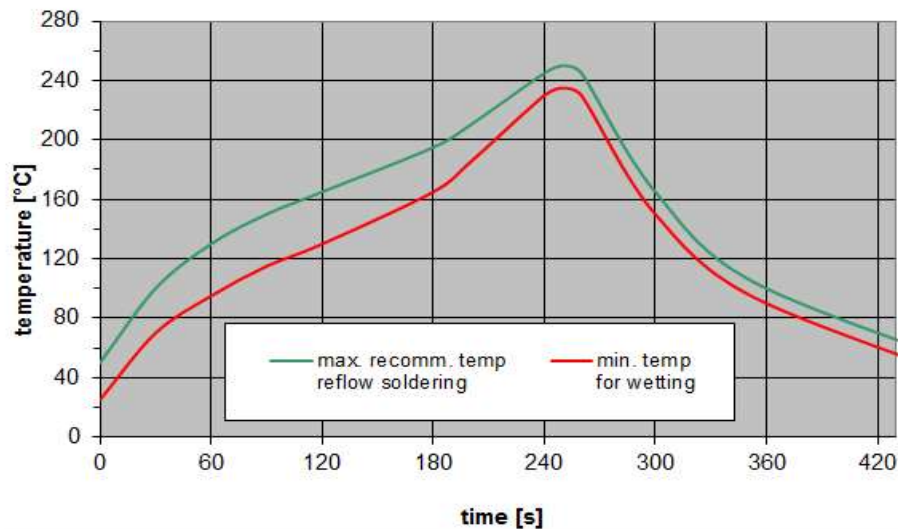


Figure 10: Recommended reflow profile for convection and infrared soldering – lead-free solder.

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12 Annotations

12.1 Matching coils

See TDK inductor pdf-catalog <http://www.tdk.co.jp/tefe02/coil.htm#aname1> and Data Library for circuit simulation <http://www.tdk.co.jp/etvcl/index.htm>.

12.2 RoHS compatibility

ROHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.

12.3 Scattering parameters (S-parameters)

The pin/port assignment is available in the headers of the S-parameter files. Please contact your local RF360 sales office.

12.4 Ordering codes and packing units

| Ordering code | Packing unit |
|--------------------|--------------|
| B39761B1679B510 | 9000 pcs |
| B39761B1679B510W 3 | 3000 pcs |

Table 4: Ordering codes and packing units.

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13 Cautions and warnings

13.1 Display of ordering codes for RF360 products

The ordering code for one and the same product can be represented differently in data sheets, data books, other publications and the website of RF360, or in order-related documents such as shipping notes, order confirmations and product labels. The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products. Detailed information can be found on the Internet under www.rf360jv.com/orderingcodes.

13.2 Material information

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our sales offices.

For information on recycling of tapes and reels please contact one of our sales offices.

13.3 Moldability

Before using in overmolding environment, please contact your local RF360 sales office.

13.4 Package information

Landing area

The printed circuit board (PCB) land pattern (landing area) shown is based on RF360 internal development and empirical data and illustrated for example purposes, only. As customers' SMD assembly processes may have a plenty of variants and influence factors which are not under control or knowledge of RF360, additional careful process development on customer side is necessary and strongly recommended in order to achieve best soldering results tailored to the particular customer needs.

Dimensions

Unless otherwise specified all dimensions are understood using unit millimeter (mm).

Projection method

Unless otherwise specified first-angle projection is applied.

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