



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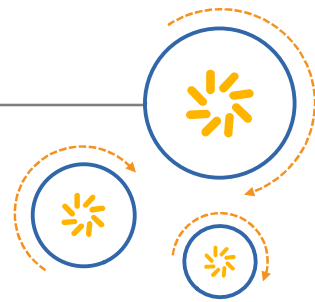
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**SAW components****B1679****SAW band stop filter****760.00 MHz**

Data sheet

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

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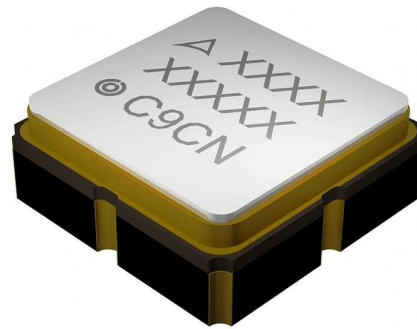
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## 1 Application

- 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)

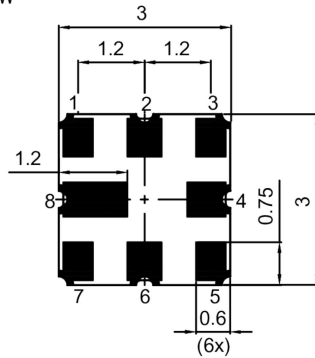


**Figure 1:** Picture of component with example of product marking.

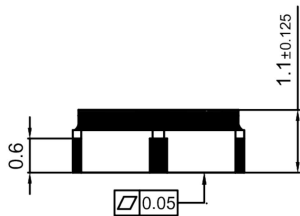
Data sheet

3 Package

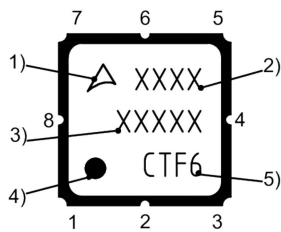
BOTTOM VIEW



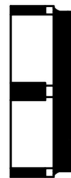
SIDE VIEW



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

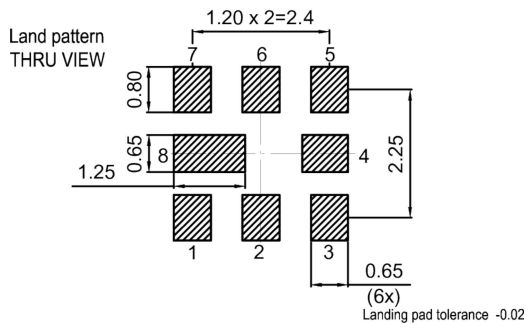


Figure 2: Drawing of package. See Sec. Package information (p. 16).

4 Pin configuration

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

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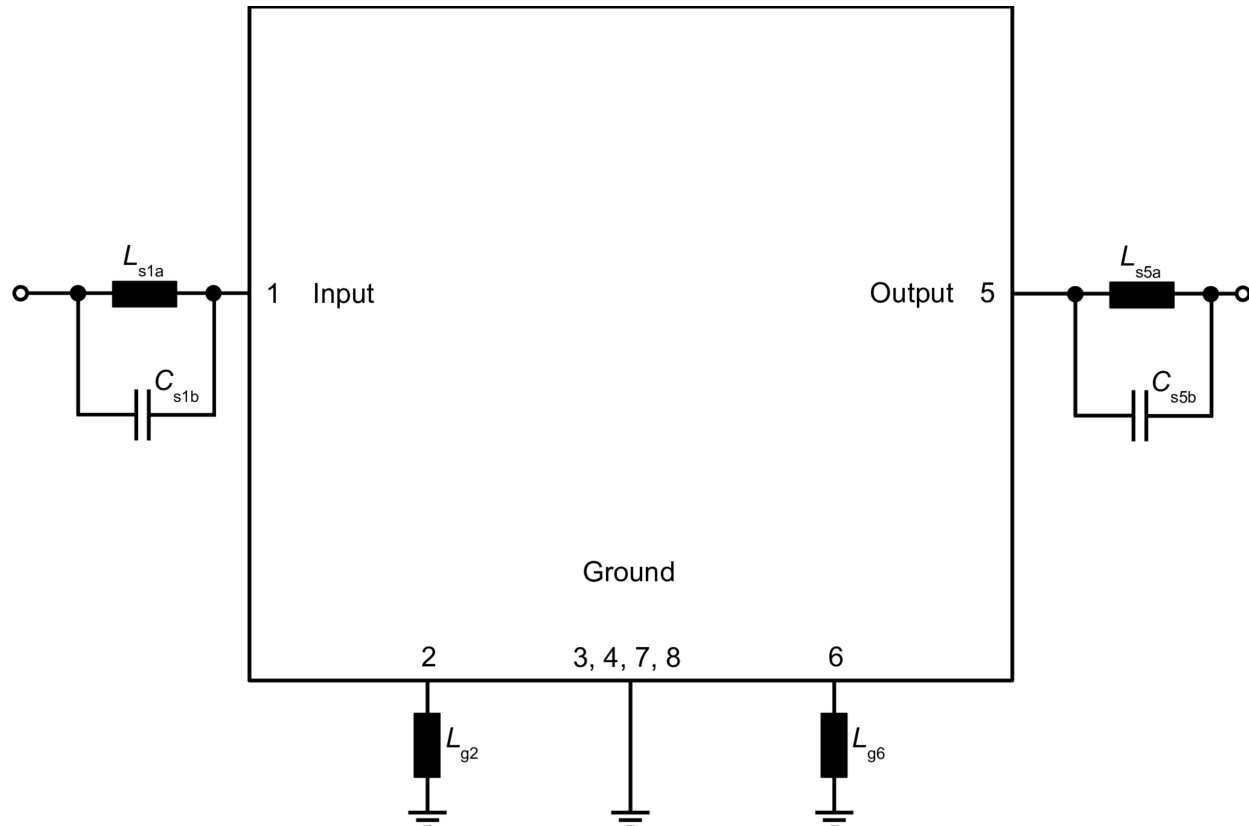
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## 5 Matching circuit

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



**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 $T_{\text{SPEC}}$	typ. @ +25 °C	max. for $T_{\text{SPEC}}$	
<b>Center frequency</b>	$f_c$	—	760	—	MHz
<b>Minimum insertion attenuation</b>	$\alpha_{\text{min}}$				
	470... 694 MHz	—	1.3	2.0	dB
<b>Maximum insertion attenuation</b>	$\alpha_{\text{max}}$				
	470... 686 MHz	—	2.2	3.0	dB
	686... 694 MHz	—	6.0	10	dB
<b>Minimum attenuation</b>	$\alpha_{\text{min}}$				
	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

<sup>1)</sup> 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 <sup>4)</sup>	Continuous wave for 10000 h @ 85 °C.
@ input port: 832 ... 960 MHz	28 dBm <sup>4)</sup>	Continuous wave for 10000 h @ 85 °C.

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

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

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

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

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## 8 Transmission coefficient

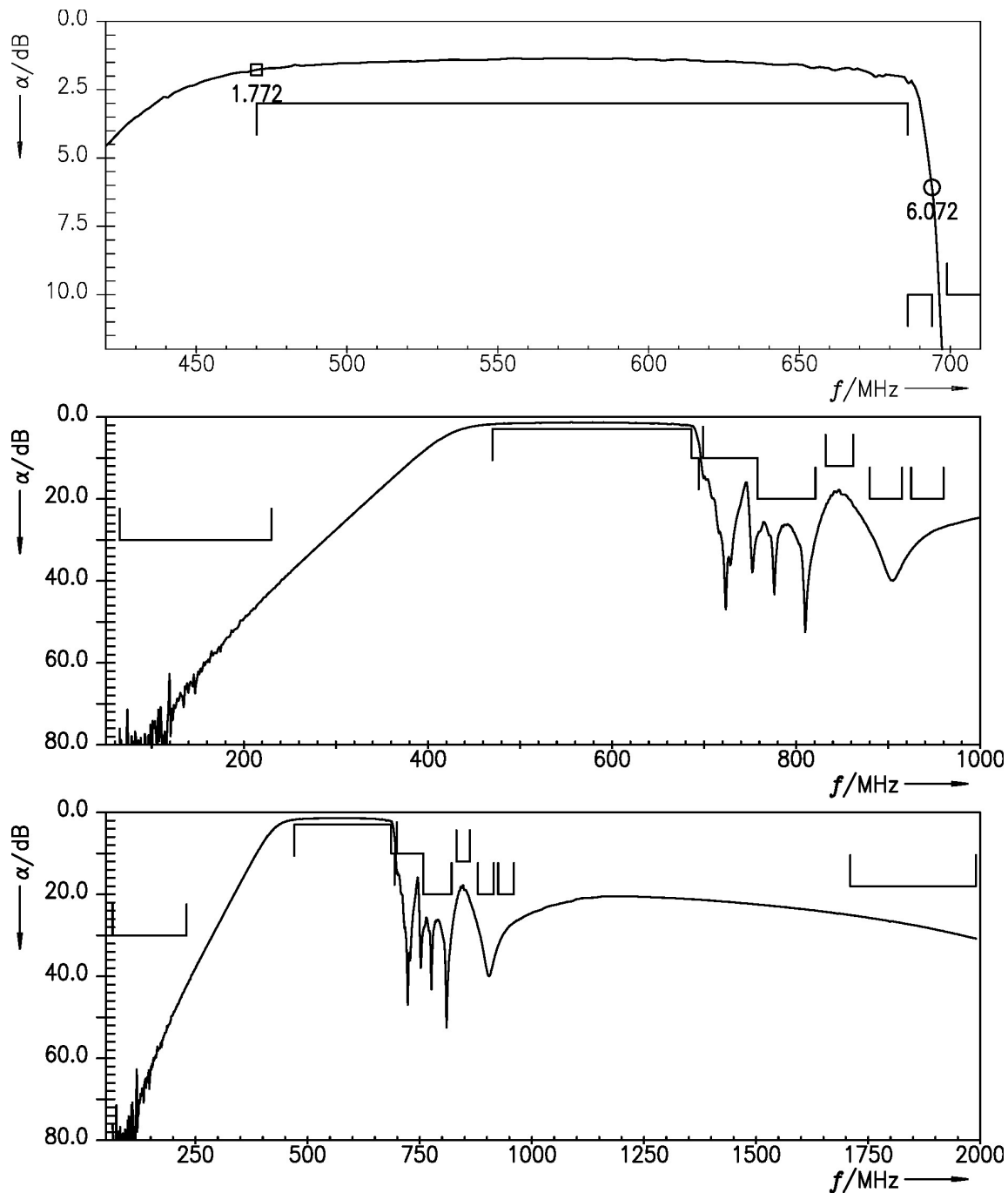


Figure 4: Attenuation.

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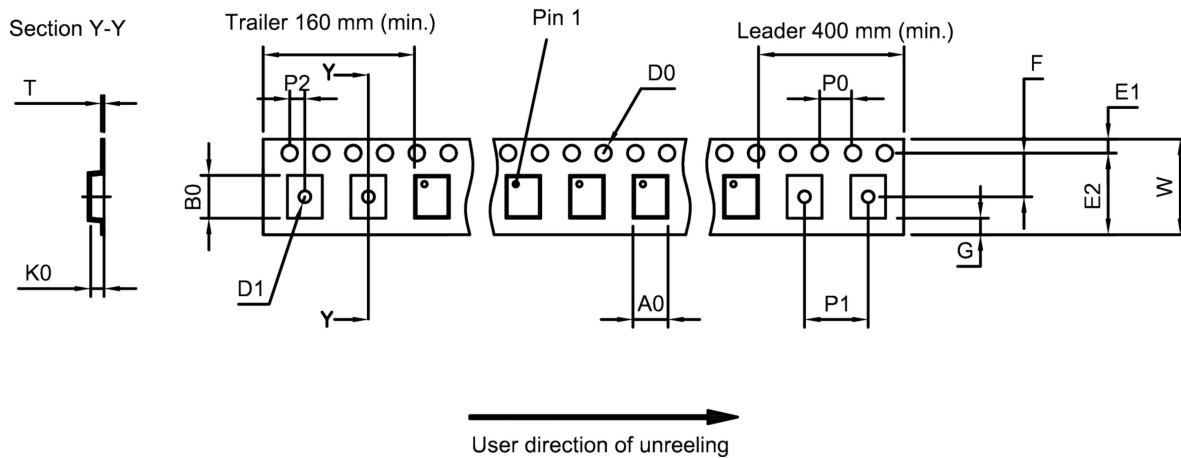
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## 9 Packing material

## 9.1 Tape



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

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

**Table 1:** Tape dimensions.

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9.2 Reel with diameter of 180 mm

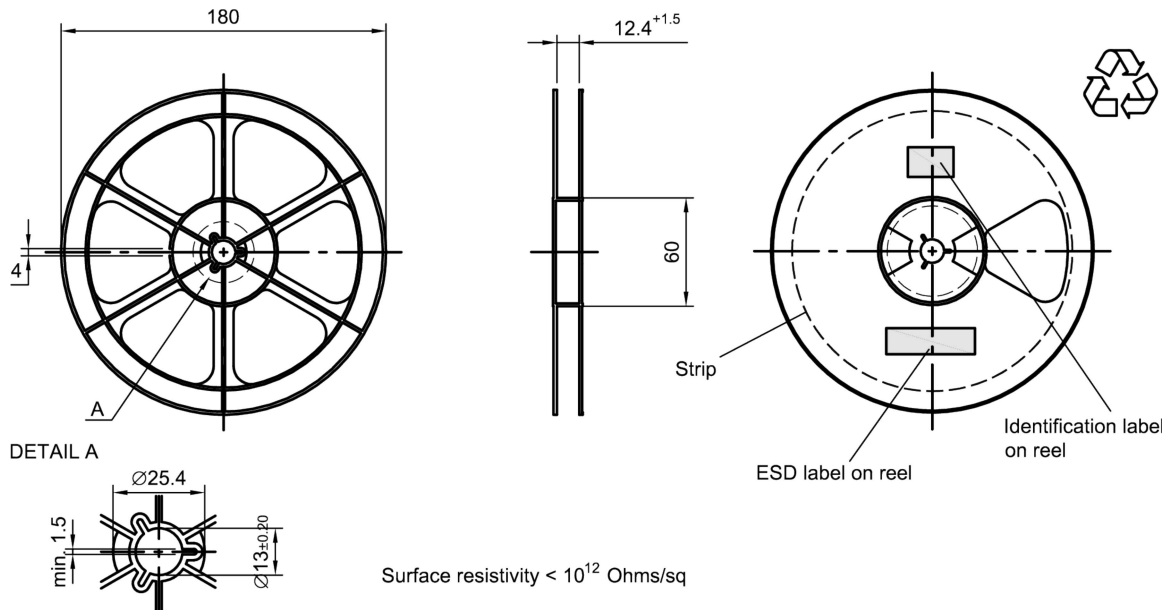
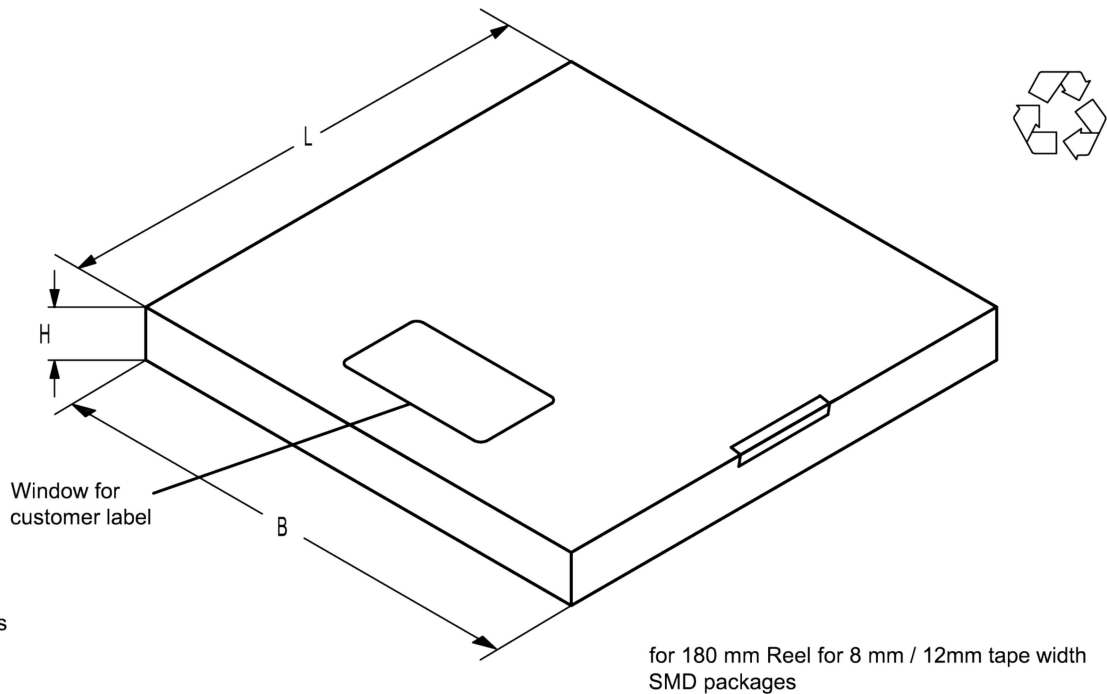


Figure 6: Drawing of reel (first-angle projection) with diameter of 180 mm.



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

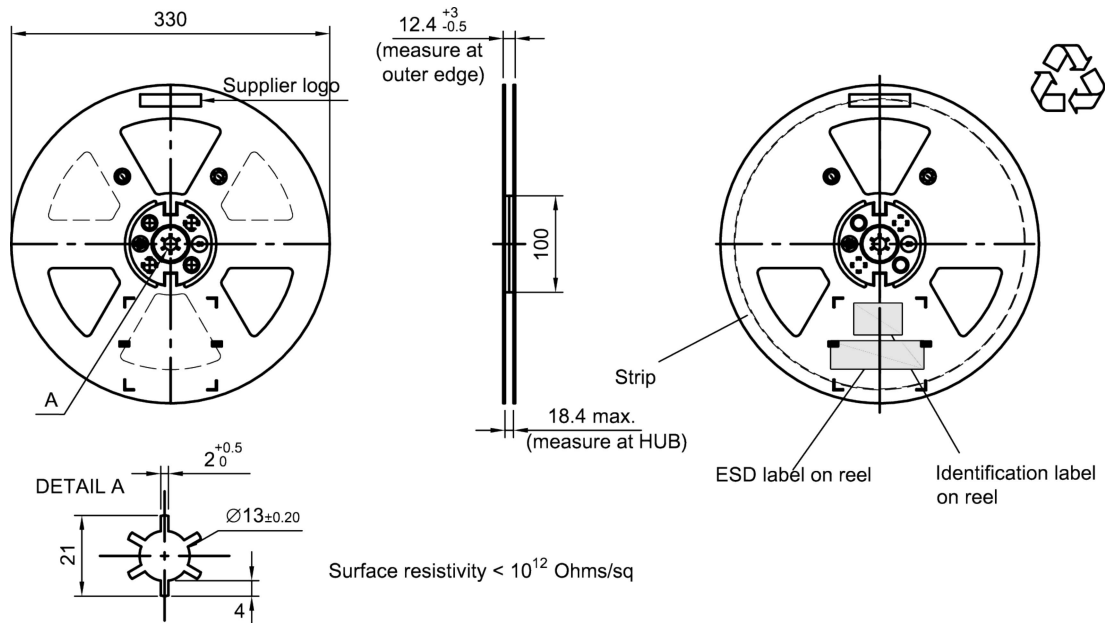
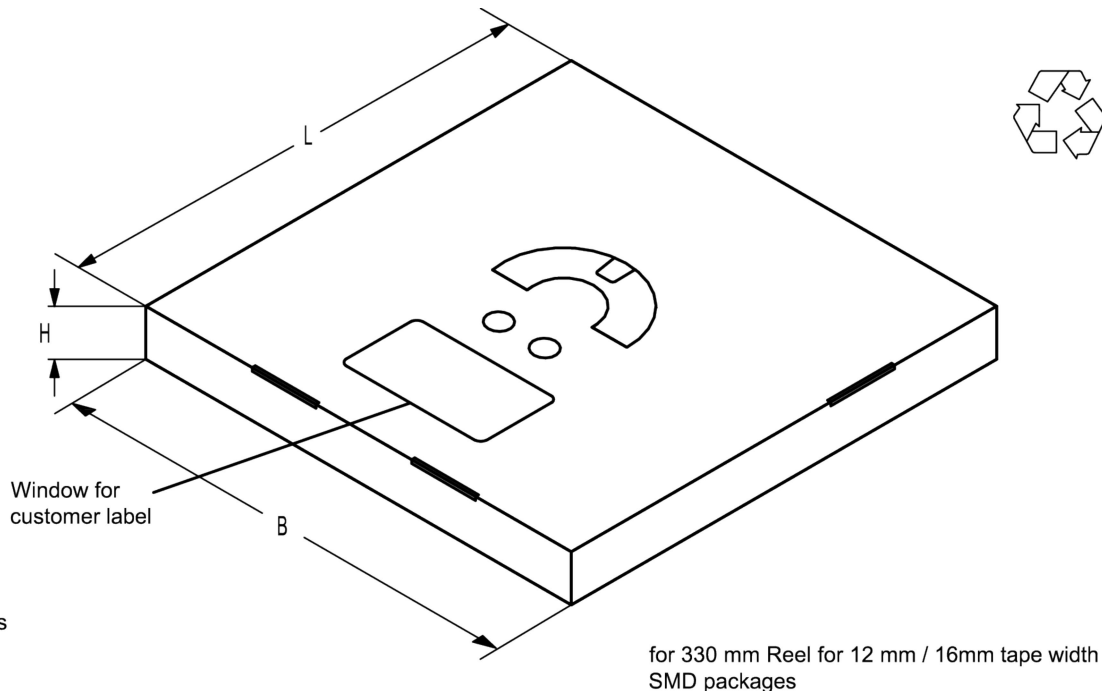


Figure 8: Drawing of reel (first-angle projection) with diameter of 330 mm.



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 <sup>st</sup> digit (day)						2 <sup>nd</sup> digit (year)				3 <sup>rd</sup> 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       → 26<sup>th</sup>

Year:           F       → 2015

Month:          6       → June

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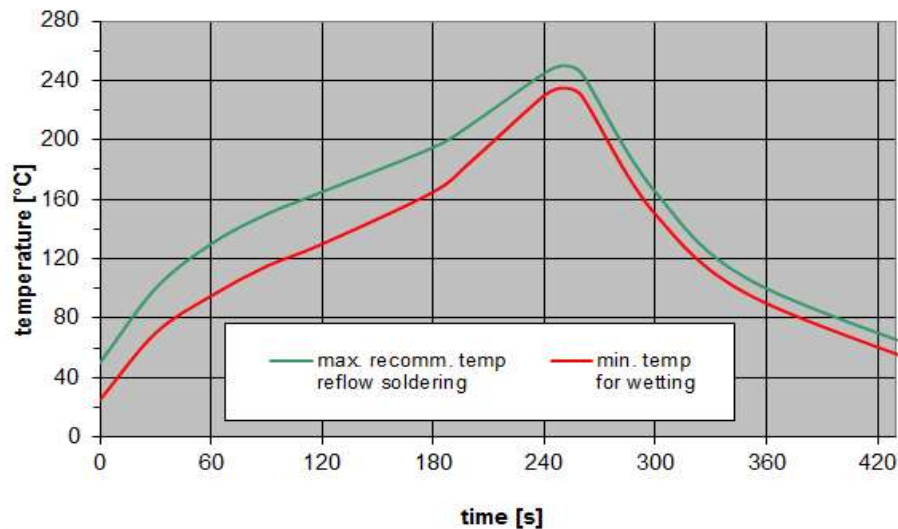
Data sheet

## 11 Soldering profile

The recommended soldering process is in accordance with IEC 60068-2-58 – 3<sup>rd</sup> 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 $T_{\text{peak}}$	250 °C +0/-5 °C
wetting temperature $T_{\text{min}}$	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

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#### 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.

**Important notes**

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3. **The warnings, cautions and product-specific notes must be observed.**
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