

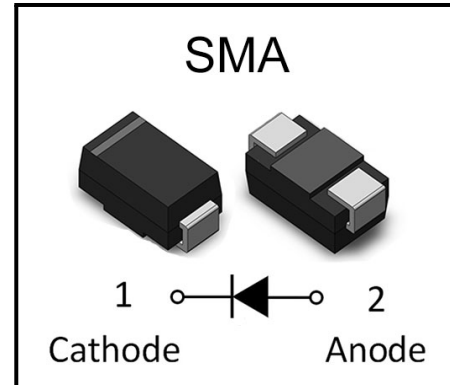
# RS1A-RS1M

Fast Recovery  
Rectifier Diode

## Features

- Super fast switching time for high efficiency
- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability
- Epitaxial construction

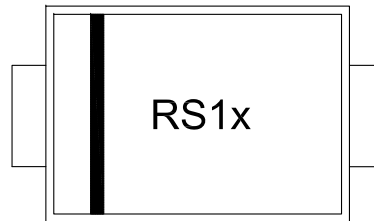
## Package



## Description

- Case: molded plastic
- Polarity: Color band denotes cathode
- Package: SMA Plastic Package

## Making Code



## Ordering information

Part Number	RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M
Marking	RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M
Base qty	5K	5K	5K	5K	5K	5K	5K



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Maximum Ratings (@ $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Symbol	Parameter	RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M	Unit
V <sub>RRM</sub>	Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
V <sub>RMS</sub>	Maximum RMS Voltage	35	70	140	280	420	560	700	V
V <sub>DC</sub>	Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
I <sub>(AV)</sub>	Maximum Average Forward Rectified Current at T <sub>L</sub> = 110°C	1.0							A
I <sub>FSM</sub>	Peak Forward Surge Current 8.3ms Single half sine- wave Superimposed on Rated T <sub>J</sub> = 125°C	30							A
V <sub>F</sub>	Maximum Forward Voltage at 1.0A DC	1.3							V
I <sub>R</sub>	Maximum Reverse Current at T <sub>A</sub> = 25°C Rated DC Blocking Voltage T <sub>A</sub> = 100°C	10 50							uA
T <sub>RR</sub>	Maximum Reverse Recovery Time(Note1)	150				250	500		nS
C <sub>J</sub>	Typical Junction Capacitance(Note2)	15							pF
R <sub>θJA</sub>	Typical Thermal Resistance	55							°C/W
T <sub>J</sub>	Operating Temperature Range	-55 to +150							°C
T <sub>STG</sub>	Storage Temperature Range	-55 to +150							°C

Notes:(1)Measured with  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{RR}=0.25\text{A}$

(2)Measured at 1.0 MHz and applied reverse voltage of 4.0V DC



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Typical Performance Characteristics( $T_J = 25^\circ\text{C}$ , unless otherwise noted)

Figure 1: Typical Forward Characteristic

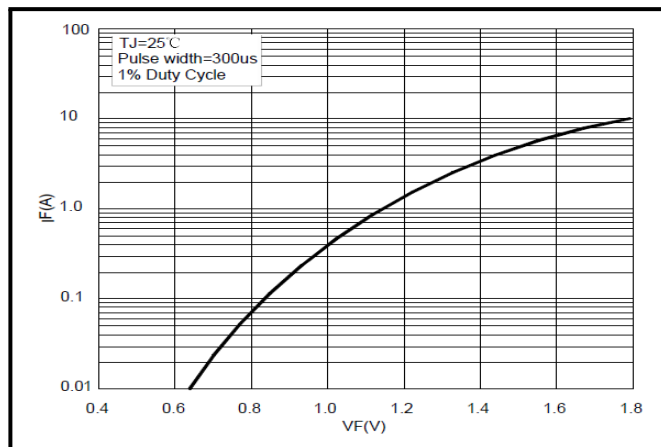


Figure 2: Forward Current Derating Curve

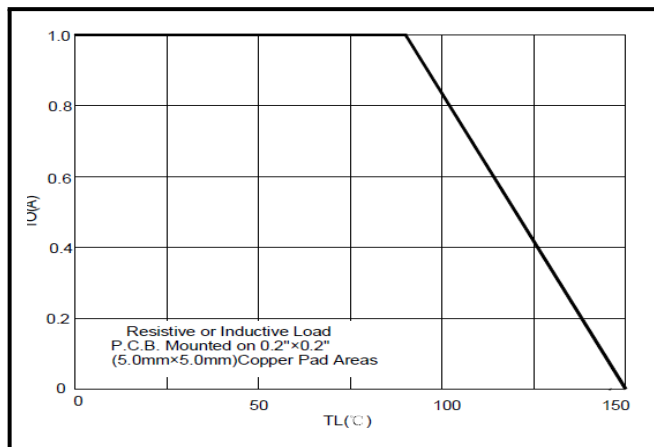


Figure 3: Maximum Non-Repetitive Peak Forward

Surge Current

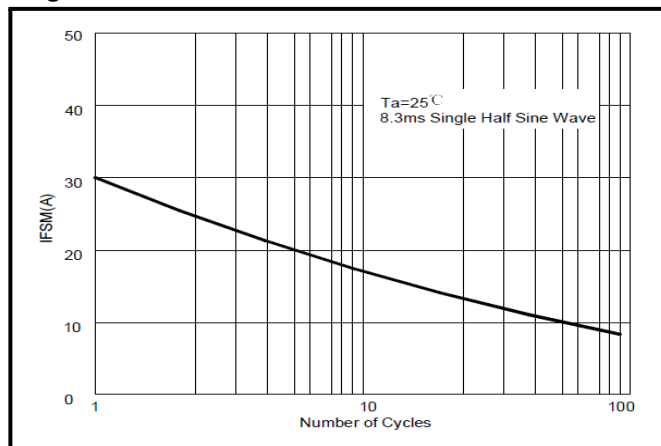
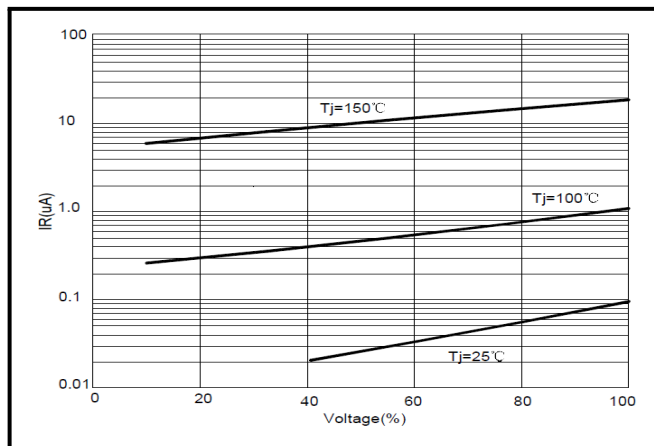


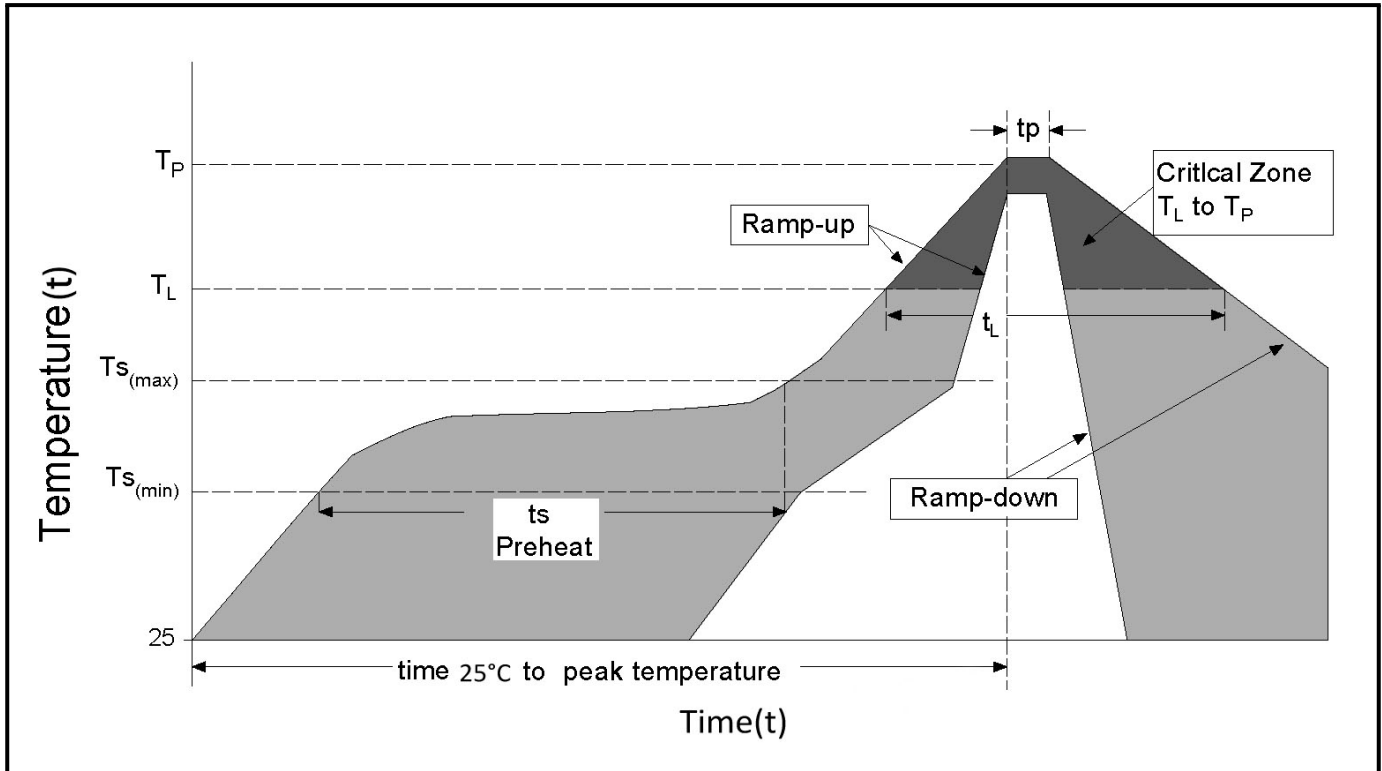
Figure 4: Typical Reverse Characteristics



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## Soldering Parameters



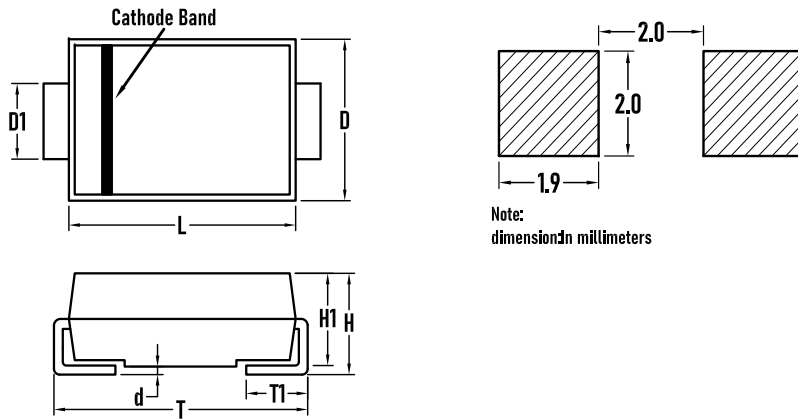
Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min (T <sub>S</sub> (min))	150°C
	- Temperature Max (T <sub>S</sub> (max))	200°C
	- Time (min to max) (t <sub>s</sub> )	60 - 180 secs
Average ramp up rate (Liquidus Temp (T <sub>L</sub> ) to peak)		3°C/second max
T <sub>S</sub> (max) to T <sub>L</sub> - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T <sub>L</sub> ) (Liquidus)	217°C
	- Time (t <sub>L</sub> )	60 - 150 secs
Peak Temperature (T <sub>P</sub> )		260 <sup>+0/-5</sup> °C
Time within 5°C of actual peak Temperature (t <sub>p</sub> )		20 - 40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C



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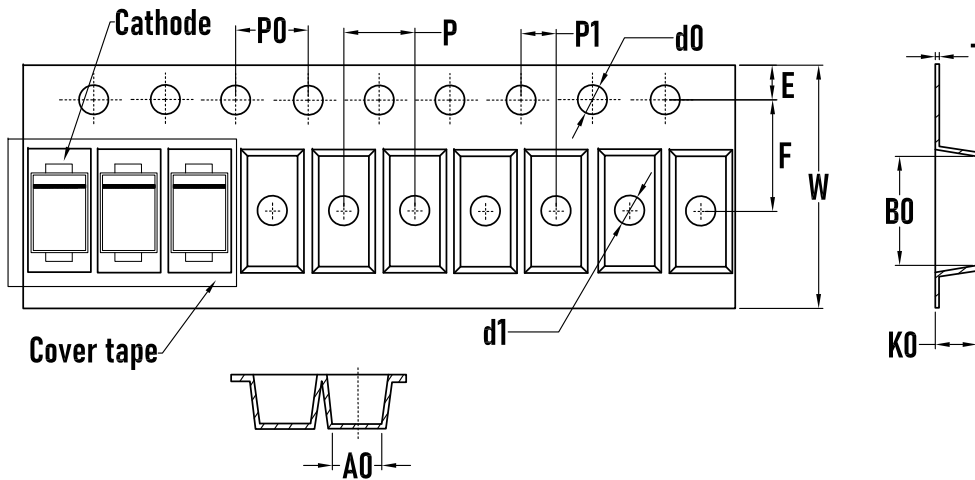
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## Outline Drawing - SMA



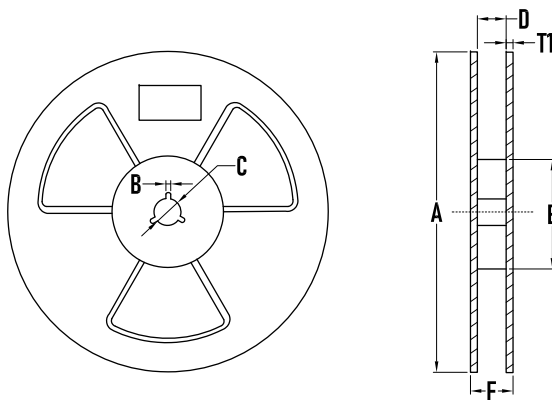
SYMBOL	MILLIMETER		Inches	
	MIN.	MAX.	MIN.	MAX.
D	2.5	2.9	0.098	0.114
D1	1.2	1.8	0.047	0.071
T	4.8	5.3	0.189	0.209
T1	0.8	1.5	0.031	0.059
d	—	0.2	—	0.008
H1	1.8	2.2	0.071	0.087
H	1.9	2.5	0.075	0.098
L	3.9	4.6	0.154	0.181

## Packaging Tape - SMA



SYMBOL	MILLIMETER
A0	2.70
B0	5.10±0.1
d0	1.50±0.1
d1	1.50±0.1
E	1.75±0.1
F	5.50±0.1
K0	2.40±0.1
P	4.00±0.1
P0	4.00±0.1
P1	2.00±0.1
W	12.00±0.1
T	0.2±0.02

## Packaging Reel



SYMBOL	MILLIMETER
A	323±2
B	3.0±0.2
C	15.0±0.5
D	13±2
E	73±2
T1	2.2±0.2
Quantity	5000PCS

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Specifications are subject to change without notice.

Please refer to <http://www.born-tw.com> for current information.

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