BORN SEMICONDUCTOR

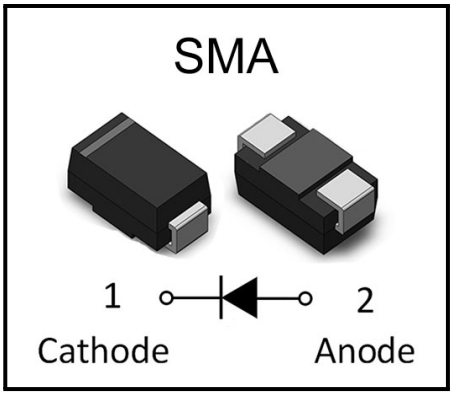
RS1A-RS1M

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

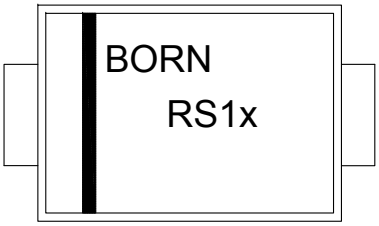
Package



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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Revision: 2022-Jan-1-A

RS1A-RS1M

Fast Recovery Rectifier Diode

Maximum Ratings (@T_A=25°C unless otherwise noted)

Symbol	Parameter	RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M	Unit
V_{RRM}	Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
V_{RMS}	Maximum RMS Voltage	35	70	140	280	420	560	700	V
V_{DC}	Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
$I_{(AV)}$	Maximum Average Forward Rectified Current at T_L = 110°C	1.0							A
I_{FSM}	Peak Forward Surge Current 8.3ms Single half sine- wave Superimposed on Rated T_J = 125°C	30							A
V_F	Maximum Forward Voltage at 1.0A DC	1.3							V
I_R	Maximum Reverse Current at T_A = 25°C Rated DC Blocking Voltage T_A = 100°C	10 50							uA
T_{RR}	Maximum Reverse Recovery Time(Note1)	150				250	500		nS
C_J	Typical Junction Capacitance(Note2)	15							pF
$R_{\theta JA}$	Typical Thermal Resistance	55							°C/W
T_J	Operating Temperature Range	-55 to +150							°C
T_{STG}	Storage Temperature Range	-55 to +150							°C

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

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

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RS1A-RS1M

Fast Recovery Rectifier Diode

Typical Performance Characteristics(T_J = 25 °C, unless otherwise noted)

Figure 1: Typical Forward Characteristic

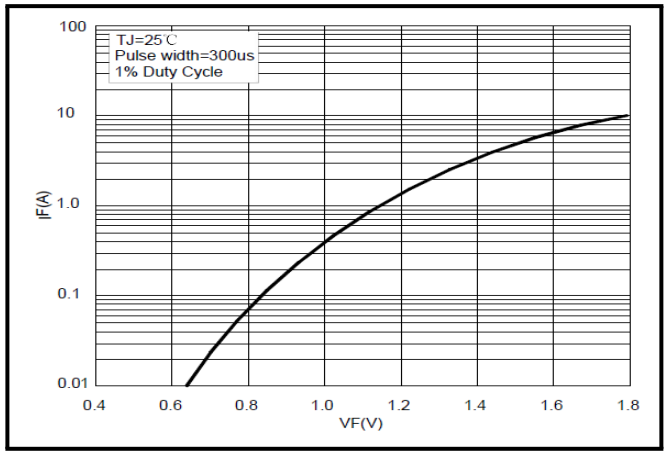


Figure 2: Forward Current Derating Curve

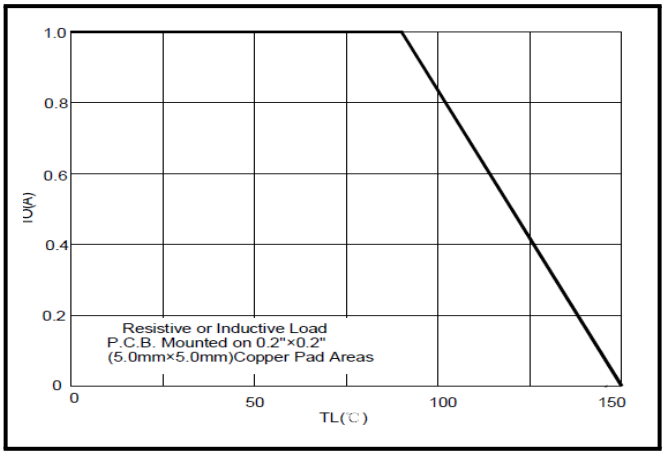


Figure 3: Maximum Non-Repetitive Peak Forward Surge Current

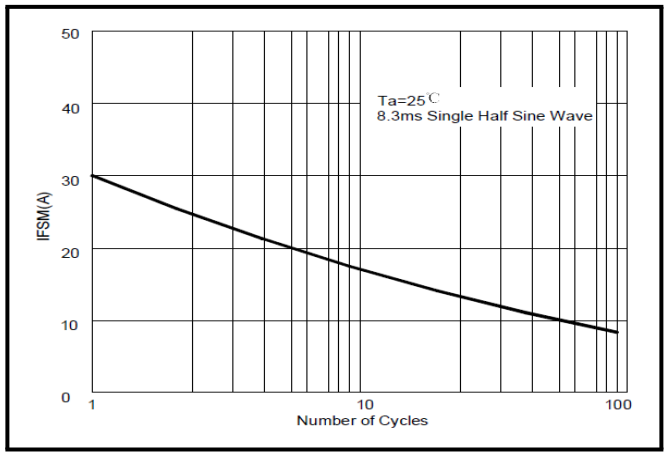
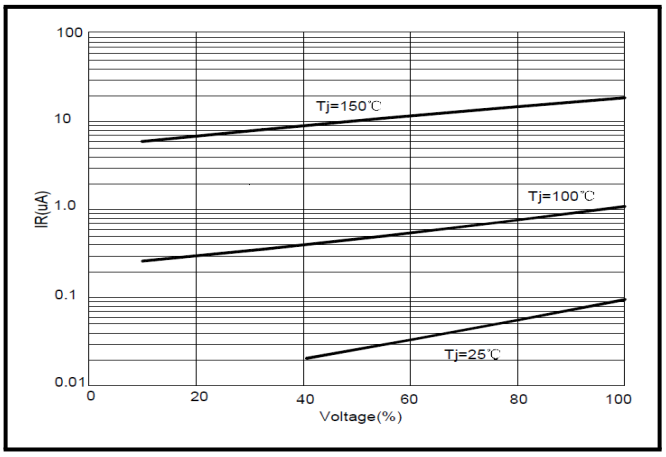


Figure 4: Typical Reverse Characterisitics



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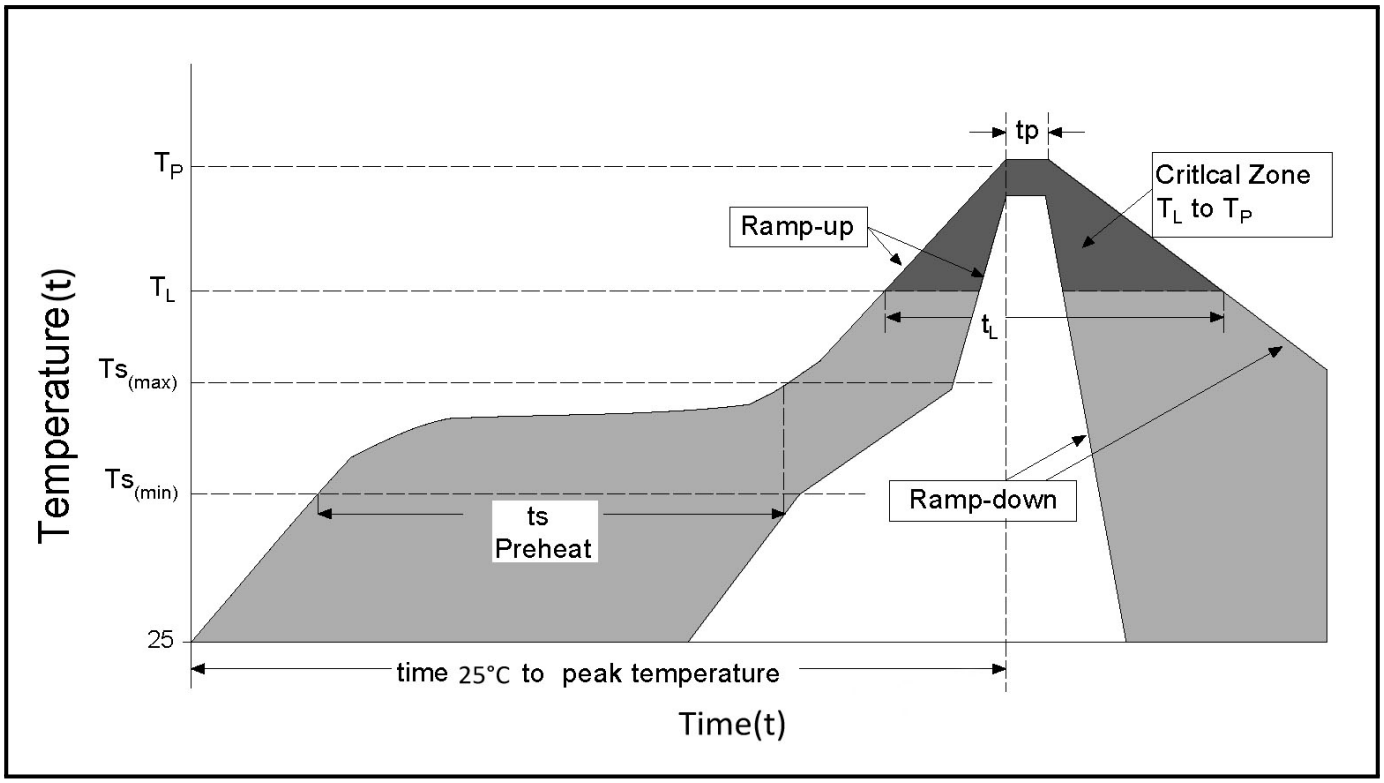
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Revision: 2022-Jan-1-A

RS1A-RS1M

Fast Recovery Rectifier Diode

Soldering Parameters



Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min (T_S(min))	150°C
	- Temperature Max (T_S(max))	200°C
	- Time (min to max) (t_S)	60 - 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
T_S(max) to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 -150 secs
Peak Temperature (T_P)		$260^{+0/-5°C}$
Time within 5°C of actual peak Temperature (t_p)		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

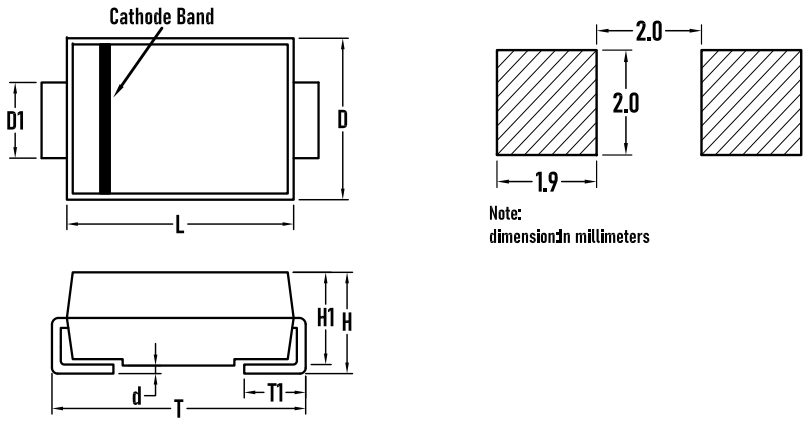
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RS1A-RS1M

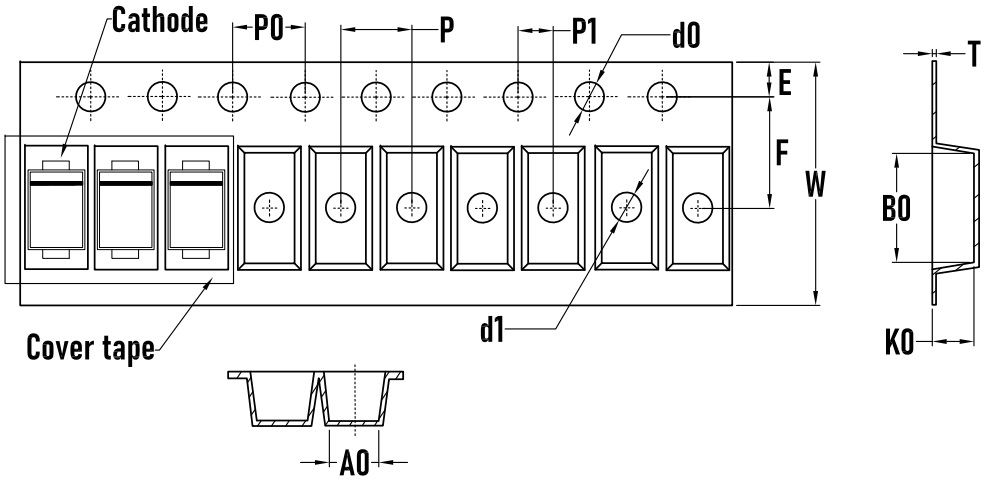
Fast Recovery Rectifier Diode

Outline Drawing - SMA



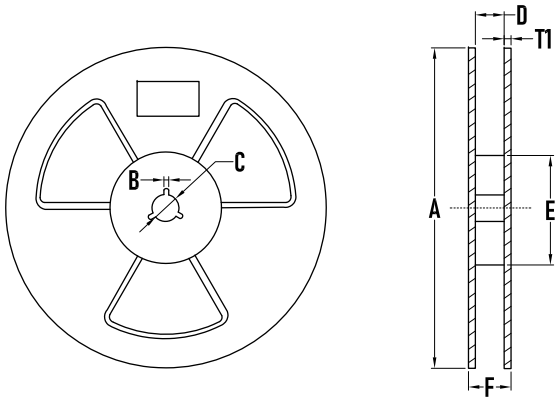
SYMBOL	MILLIMETER		Inches	
	MIN.	MAX.	MIN.	MAX.
D	2.5	2.9	0.098	0.114
D1	1.2	1.8	0.047	0.071
T	4.8	5.3	0.189	0.209
T1	0.8	1.5	0.031	0.059
d	–	0.2	–	0.008
H1	1.8	2.2	0.071	0.087
H	1.9	2.5	0.075	0.098
L	3.9	4.6	0.154	0.181

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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