BORN SEMICONDUCTOR

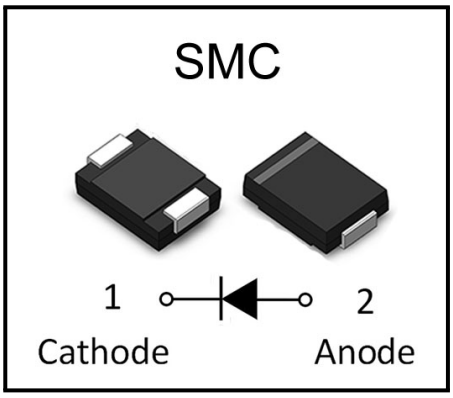
S5A-S5M

Rectifier Diode

Features

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

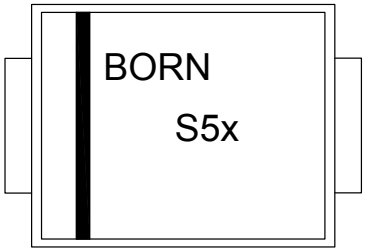
Package



Description

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

Making Code



Ordering information

Part Number	S5A	S5B	S5D	S5G	S5J	S5K	S5M
Marking	S5A	S5B	S5D	S5G	S5J	S5K	S5M
Base qty	3K	3K	3K	3K	3K	3K	3K

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S5A-S5M

Rectifier Diode

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

Symbol	Characteristics	S5A	S5B	S5D	S5G	S5J	S5K	S5M	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=100°C	5.0							A
I_{FSM}	Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	150							A
V_F	Maximum Instantaneous Forward Voltage at 5.0A	1.10							V
I_R	Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 125°C	5.0 500							uA
C_J	Typical Junction Capacitance (Note1)	50							pF
$R_{\theta JA}$	Typical Thermal Resistance	47							°C/W
T_J	Operating Temperature Range	-55 to +150							°C
T_{STG}	Storage Temperature Range	-55 to +150							°C

Note1：Measured at 1MHz and applied reverse voltage of 4.0V D.C.

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S5A-S5M

Rectifier Diode

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

Figure 1: Derating Curve Output Rectified Current

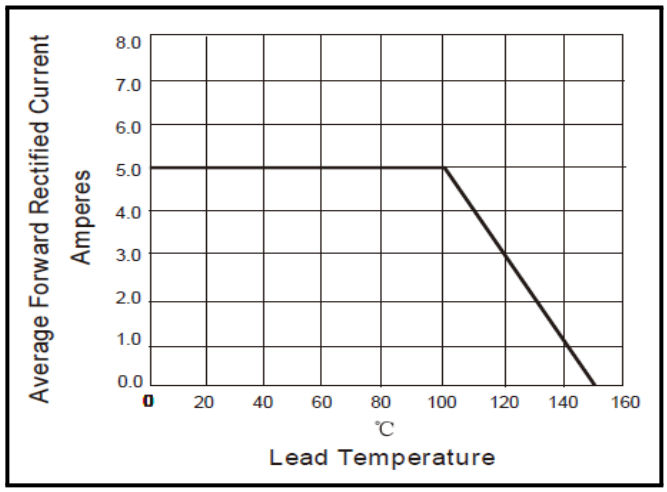


Figure 2: Maximum Non-Repetitive Peak Forward Surge Current PERLEG

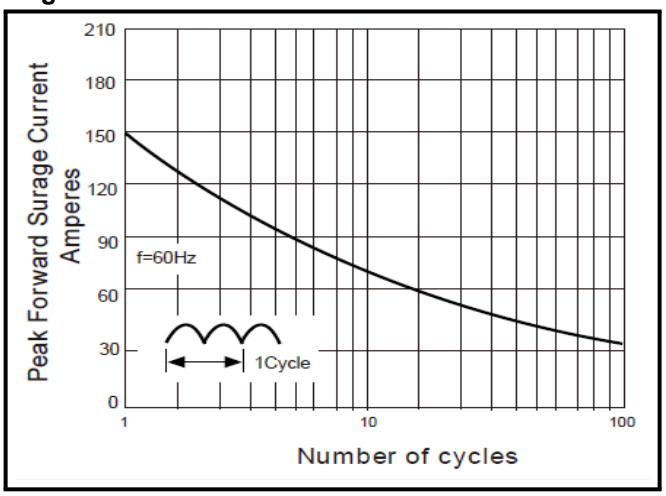


Figure 3: Typical Forward Voltage Characteristics

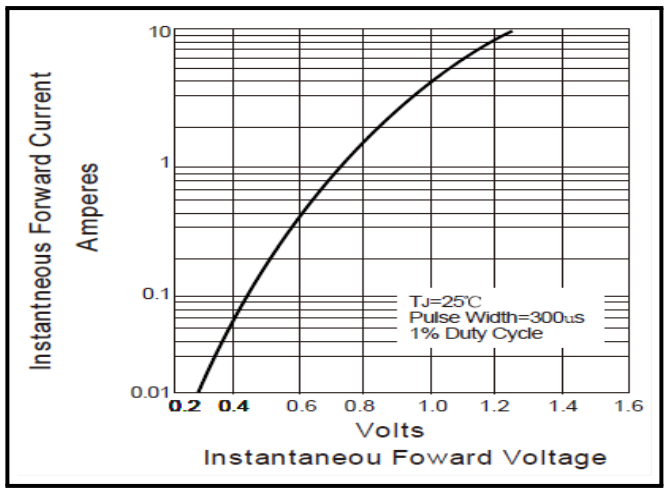
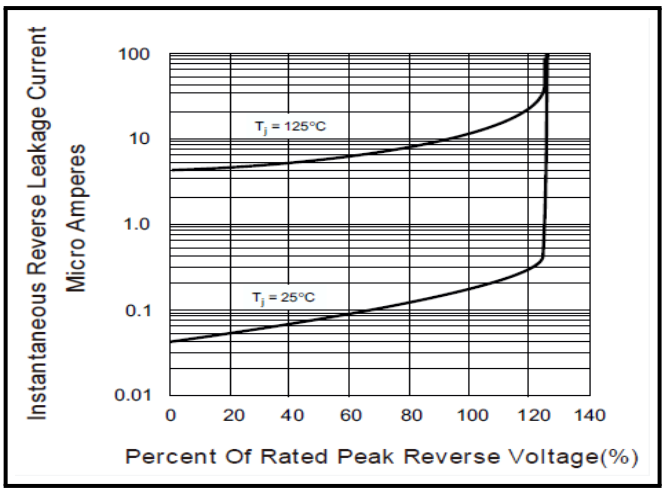


Figure 4: Typical Reverse Leakage Characteristics



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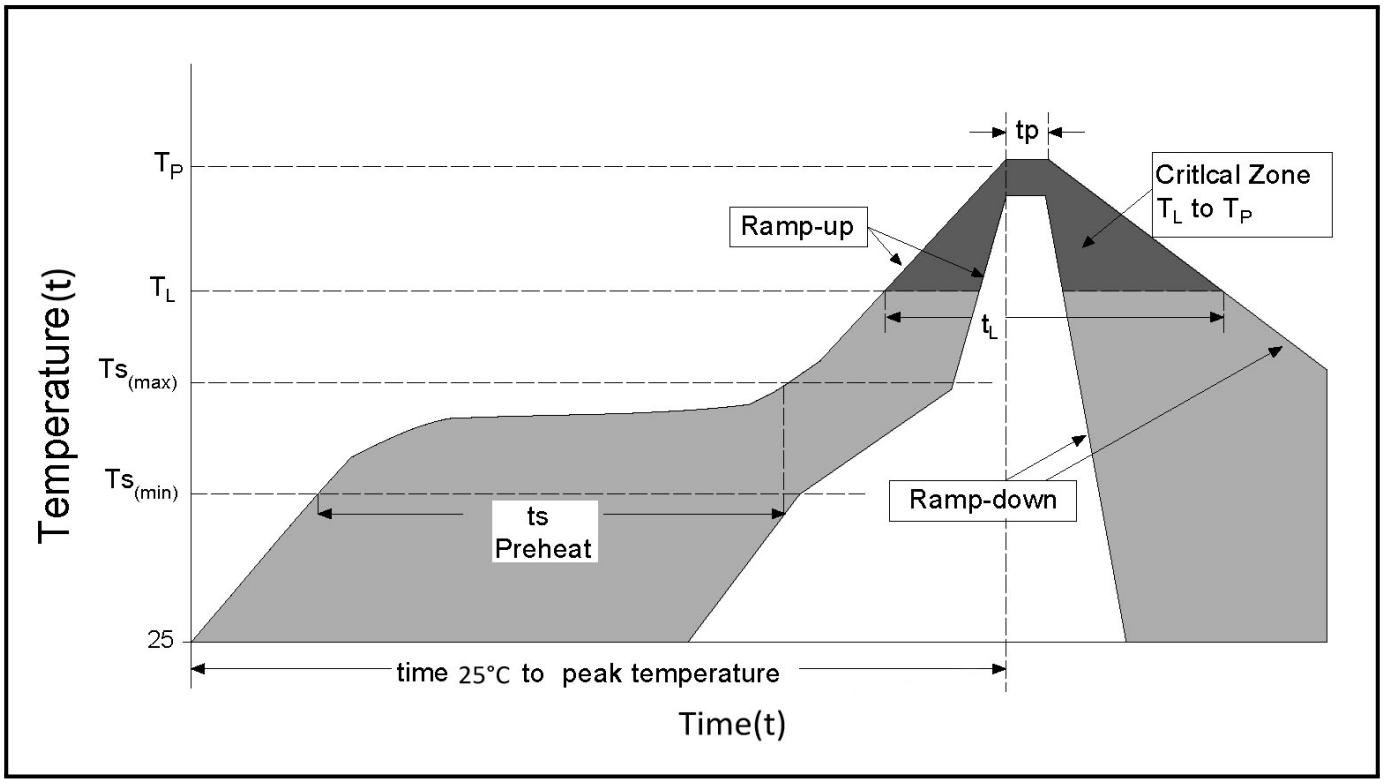
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S5A-S5M

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

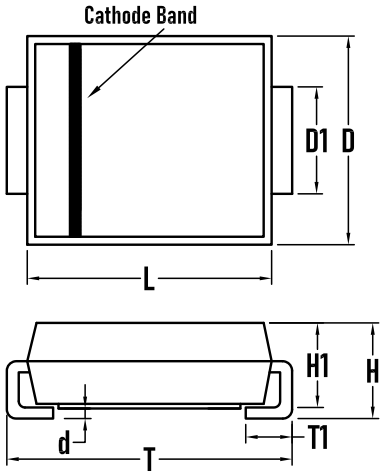
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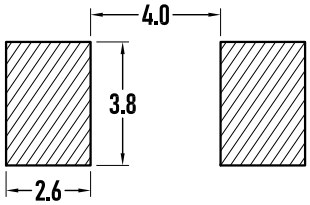
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S5A-S5M

Rectifier Diode

Package Mechanical Data - SMC

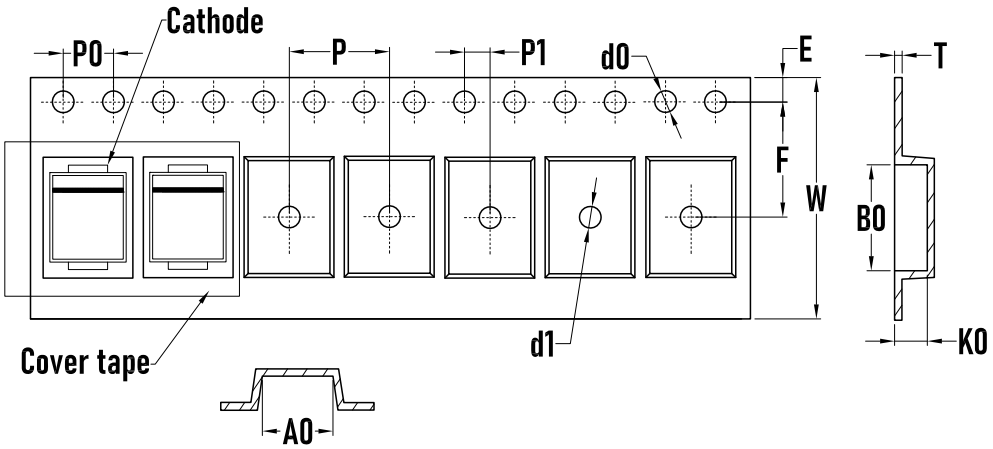




Note:
dimension:In millimeters

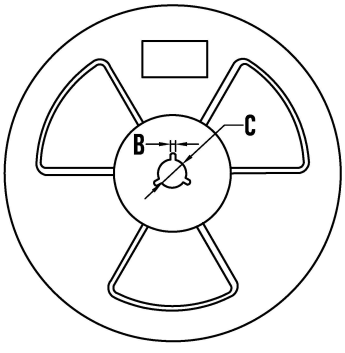
SYMBOL	MILLIMETER		Inches	
	MIN	MAX	MIN	MAX
D	5.5	6.1	0.217	0.240
D1	2.7	3.3	0.106	0.130
T	7.4	8.4	0.291	0.331
T1	0.8	1.6	0.031	0.063
d	–	0.3	–	0.012
H1	2.0	2.6	0.079	0.102
H	2.1	2.7	0.083	0.106
L	6.5	7.1	0.256	0.280

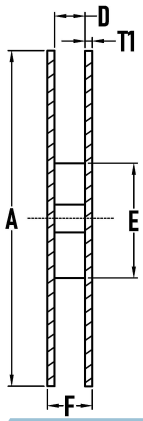
Packaging Tape - SMC



SYMBOL	MILLIMETER
A0	6.00±0.1
B0	8.25±0.02
d0	1.50±0.1
d1	1.50±0.1
E	1.75±0.1
F	7.50±0.1
K0	2.70±0.1
P	8.00±0.1
P0	4.00±0.1
P1	2.00±0.05
W	16.00±0.1
T	0.22±0.02

Packaging Reel





SYMBOL	MILLIMETER
A	323±2
B	3.0±0.2
C	15.0±0.5
D	16±2
E	73±2
T1	2.2±0.2
Quantity	3000PCS

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