

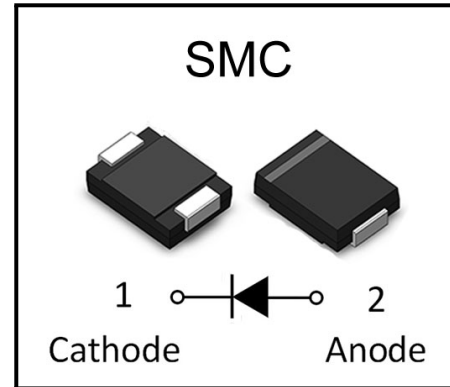
S3A-S3M

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

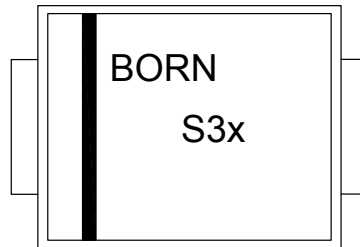
Package



Description

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

Making Code



Ordering information

Part Number	S3A	S3B	S3D	S3G	S3J	S3K	S3M
Marking	S3A	S3B	S3D	S3G	S3J	S3K	S3M
Base qty	3K	3K	3K	3K	3K	3K	3K



S3A-S3M

Rectifier Diode

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

Symbol	Characteristics	S3A	S3B	S3D	S3G	S3J	S3K	S3M	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	3.0							A
I _{FSM}	Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load(JEDEC Method)	100							A
V _F	Maximum Instantaneous Forward Voltage at 3.0A	1.15							V
I _R	Maximum DC Reverse Current T _A = 25°C at Rated DC Blocking Voltage T _A = 100°C	10.0 100							uA
C _J	Typical Junction Capacitance (Note1)	60							pF
R _{θJA}	Typical Thermal Resistance	47							°C/W
T _J	Operating Temperature Range	-55 to +150							°C
T _{STG}	Storage Temperature Range	-55 to +150							°C

Note 1: Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.



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

Figure 1: Forward Current Derating Curve

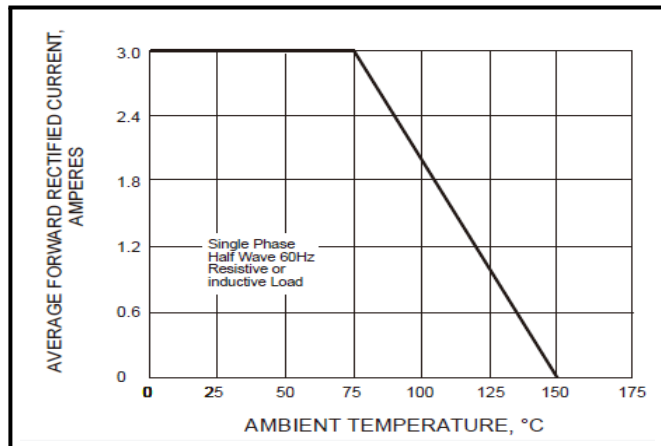


Figure 2: Maximum Non-Repetitive Peak Forward Surge Current

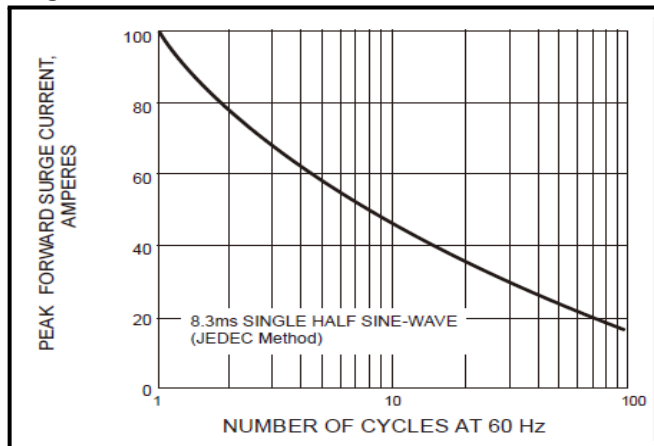


Figure 3: Instantaneous Forward Characteristics

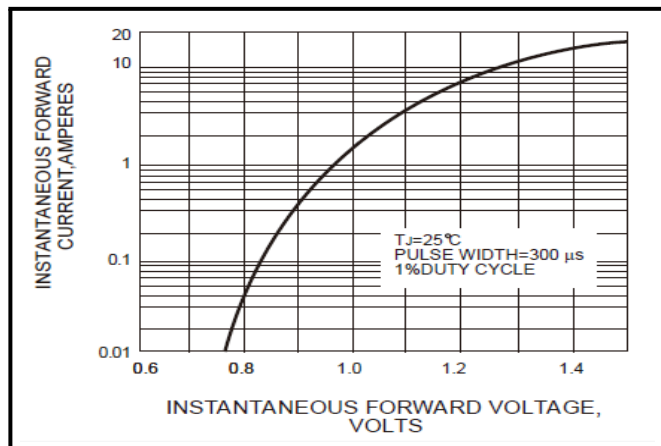


Figure 4: Typical Reverse Characteristics

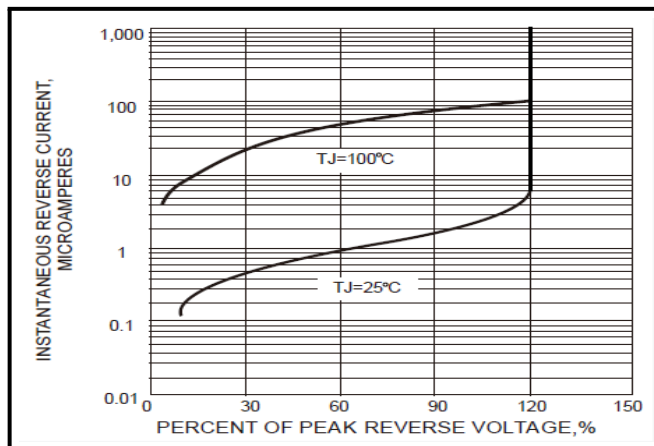


Figure 5: Typical Junction Capacitance

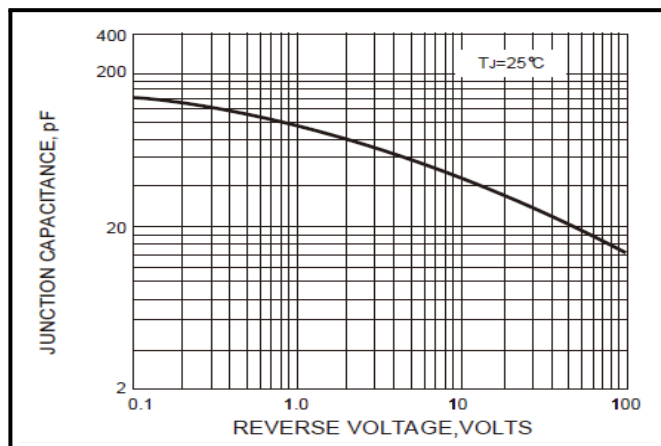
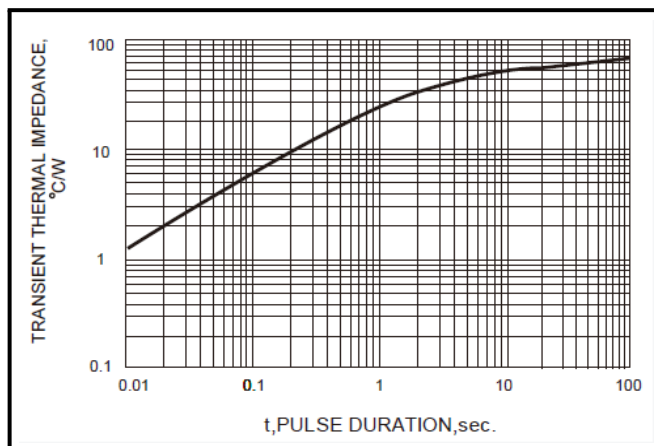
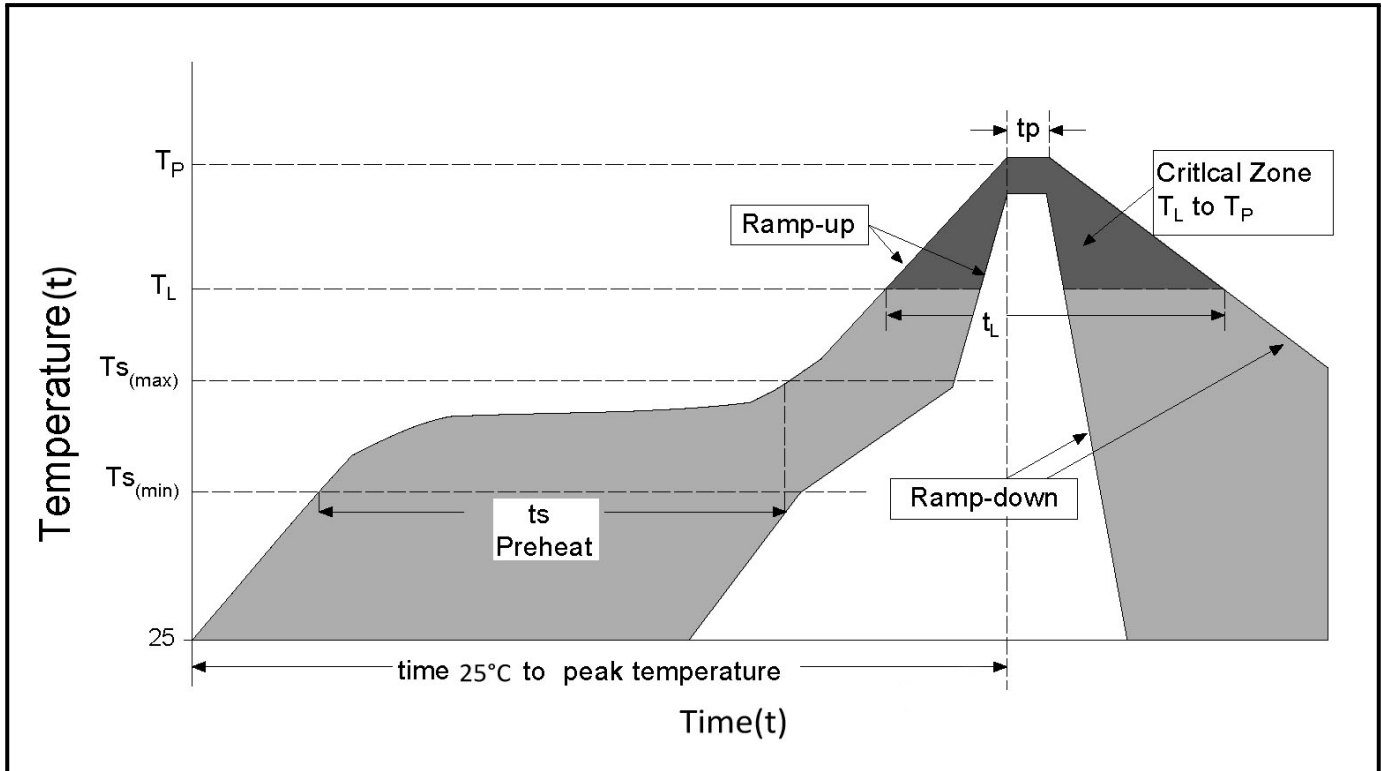


Figure 6: Typical Transient Thermal Impedance



Soldering Parameters



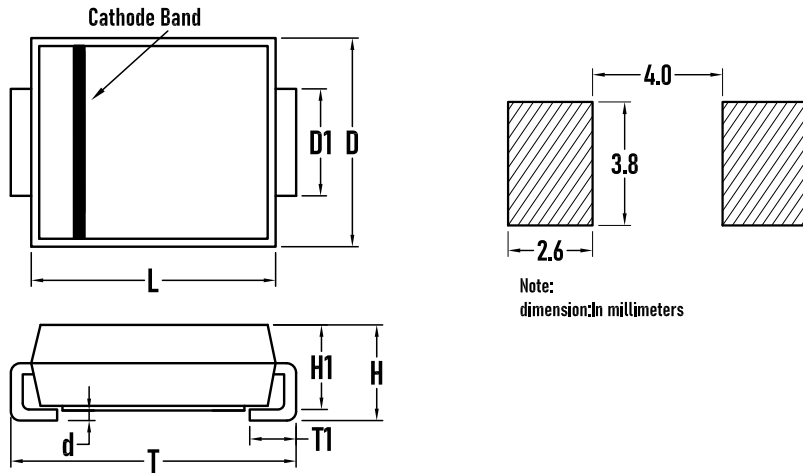
Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{S(min)}$)	150°C
	- Temperature Max ($T_{S(max)}$)	200°C
	- Time (min to max) (t_s)	60 - 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (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



S3A-S3M

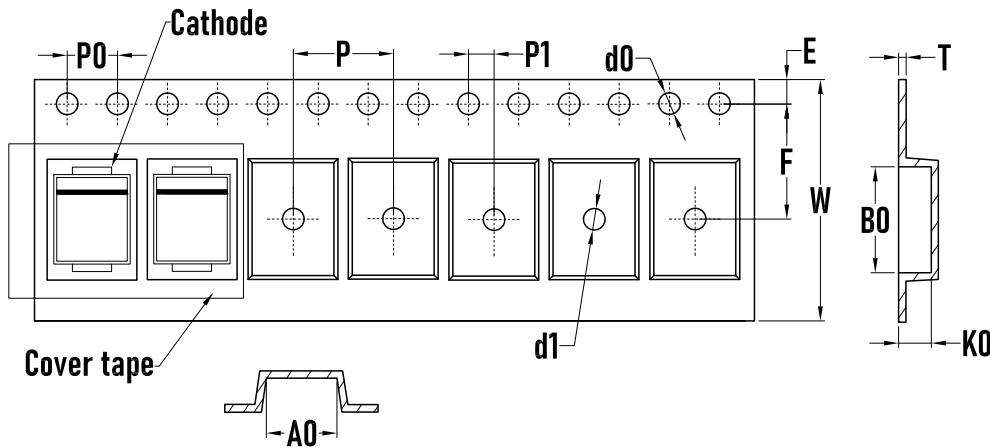
Rectifier Diode

Package Mechanical Data - SMC



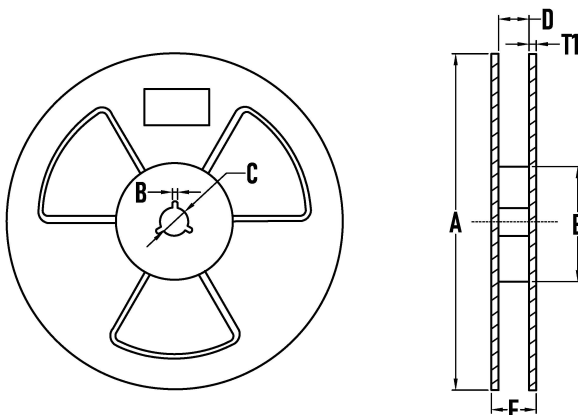
SYMBOL	MILLIMETER		Inches	
	MIN	MAX	MIN	MAX
D	5.5	6.1	0.217	0.240
D1	2.7	3.3	0.106	0.130
T	7.4	8.4	0.291	0.331
T1	0.8	1.6	0.031	0.063
d	—	0.3	—	0.012
H1	2.0	2.6	0.079	0.102
H	2.1	2.7	0.083	0.106
L	6.5	7.1	0.256	0.280

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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Specifications are subject to change without notice.

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

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