BORN SEMICONDUCTOR

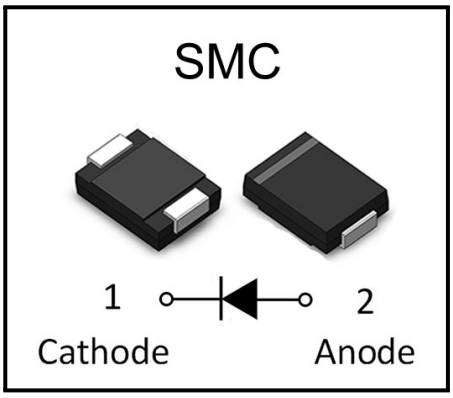
S10AC-S10MC

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

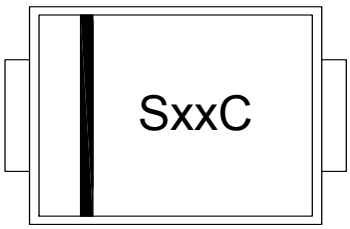
Package



Description

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

Making Code



Ordering information

Part Number	S10AC	S10BC	S10DC	S10GC	S10JC	S10KC	S10MC
Marking	S10AC	S10BC	S10DC	S10GC	S10JC	S10KC	S10MC
Base qty	3K	3K	3K	3K	3K	3K	3K

Revision: 2022-Jan-1-A

S10AC-S10MC

Rectifier Diode

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

Symbol	Characteristics	S10AC	S10BC	S10DC	S10GC	S10JC	S10KC	S10MC	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	10							A
I_{FSM}	Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	200							A
I_{FSM}	Peak Forward Surge Current @1ms square wave,1 cycle	400							A
I^2t	Current squared time @1ms≤t≤8.3ms	166							A^2S
V_F	Maximum Instantaneous Forward Voltage at 8.0A	1.10							V
I_R	Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 125°C	5.0 100							uA
C_J	Typical Junction Capacitance (Note1)	55							pF
$R_{\theta JA}$	Typical Thermal Resistance (Note2)	50							°C/W
$R_{\theta JL}$	Typical Thermal Resistance (Note2)	10							°C/W
$R_{\theta JC}$	Typical Thermal Resistance (Note2)	8							°C/W
T_J	Operating Temperature Range	-55 to +150							°C
T_{STG}	Storage Temperature Range	-55 to +150							°C

Note：1.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
2.Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.6" x 0.6" (16 mm x 16 mm) copper pad areas

S10AC-S10MC

Rectifier Diode

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

Figure 1: Derating Curve Output Rectified Current

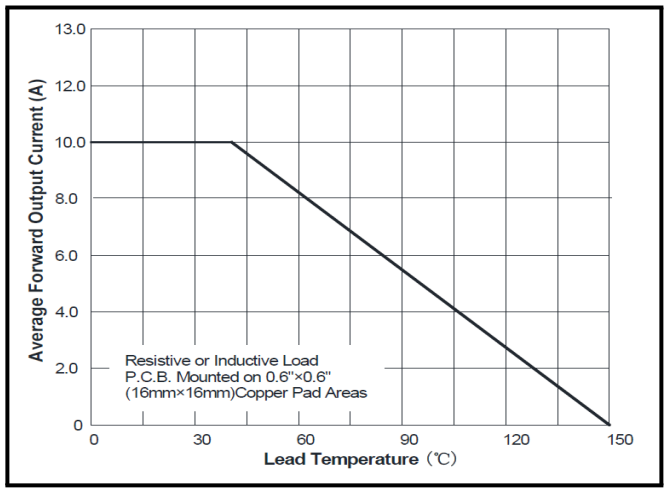


Figure 2: Maximum Non-Repetitive Peak Forward Surge Current PERLEG

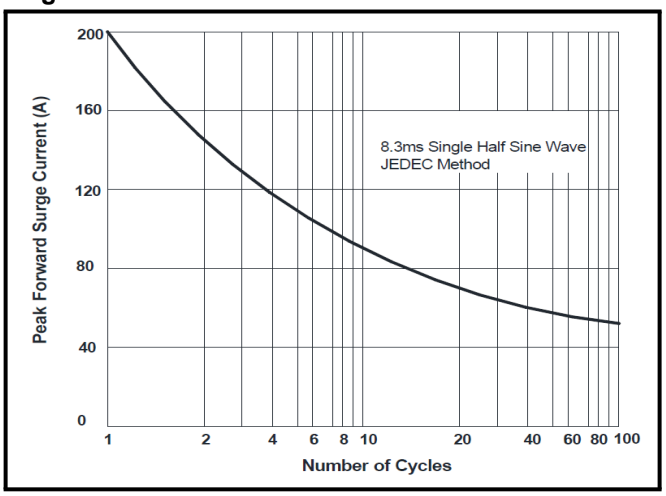


Figure 3: Typical Forward Voltage Characteristics

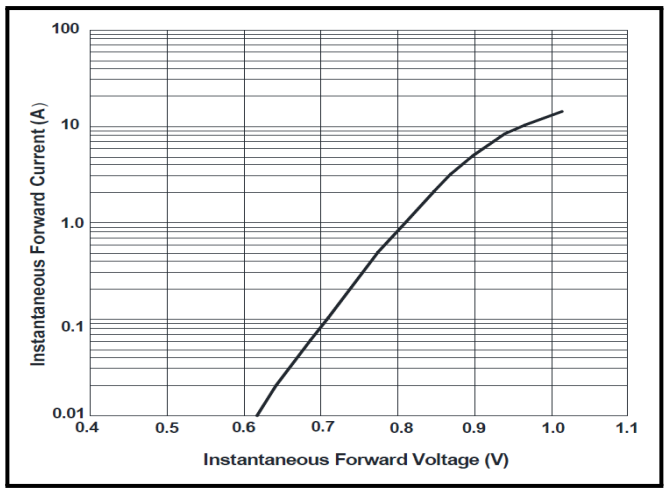
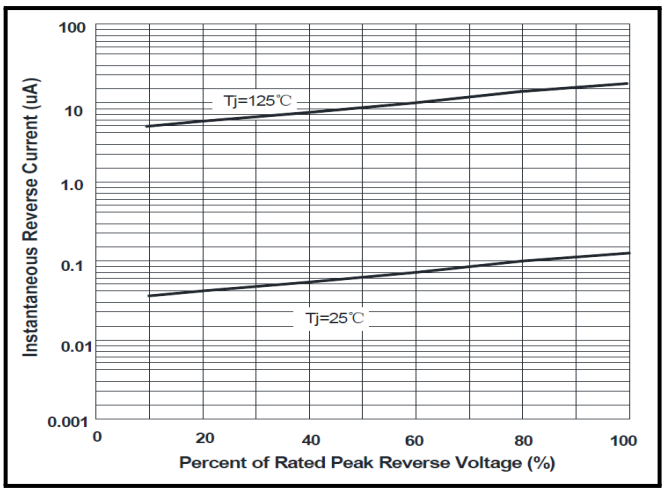


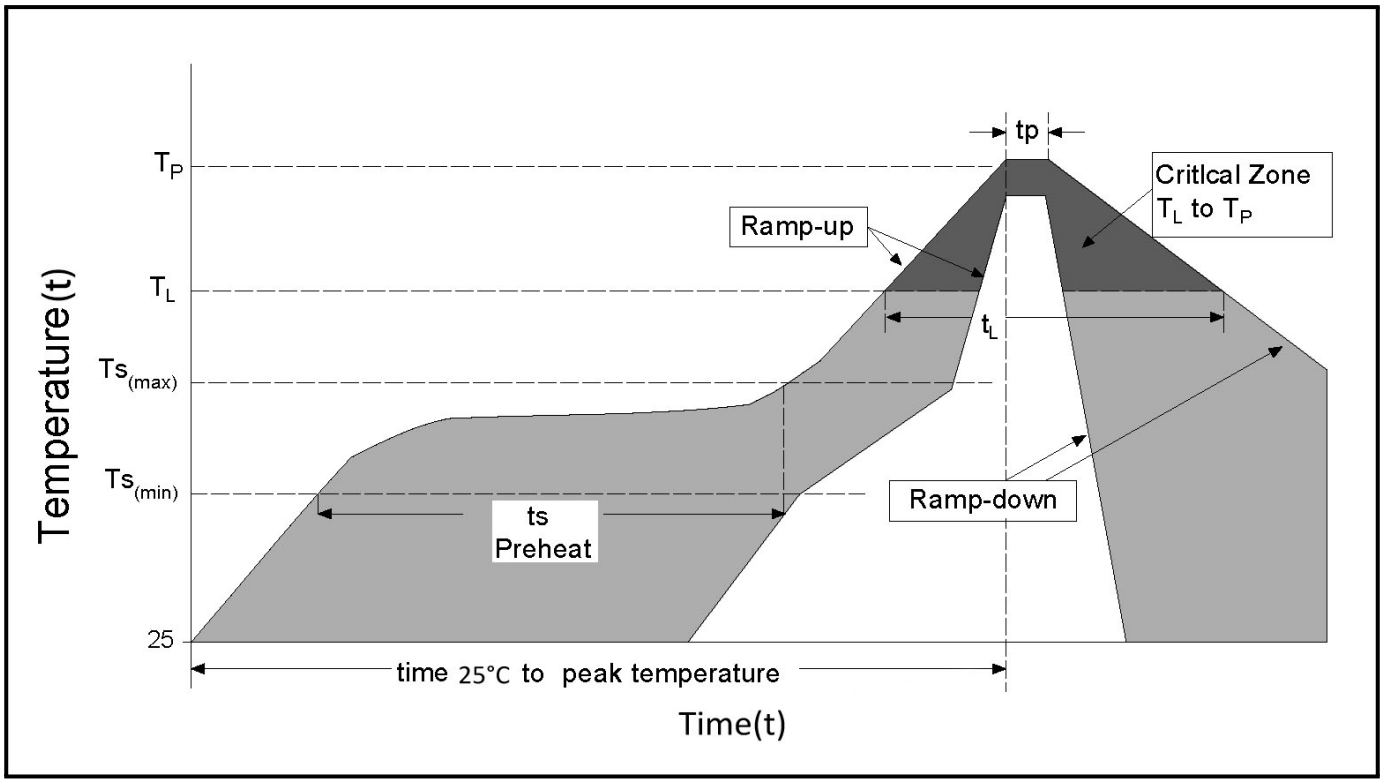
Figure 4: Typical Reverse Leakage Characteristics



S10AC-S10MC

Rectifier Diode

Soldering Parameters

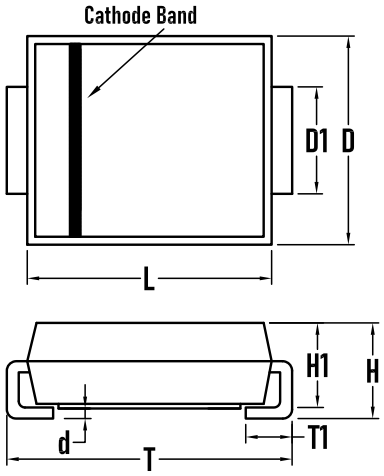


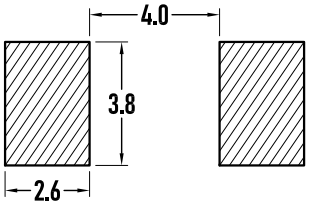
Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min (T_S(min))	150°C
	- Temperature Max (T_S(max))	200°C
	- Time (min to max) (t_S)	60 - 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
T_S(max) to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)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

S10AC-S10MC

Rectifier Diode

Package Mechanical Data - SMC

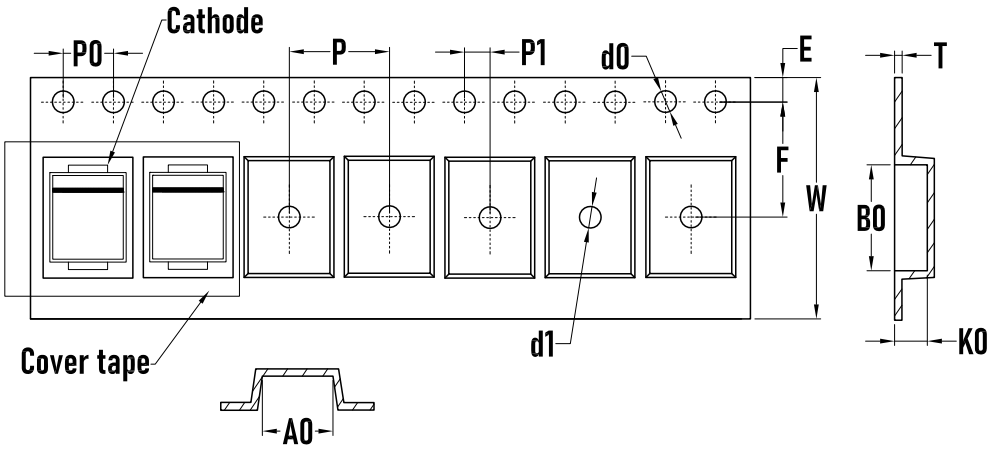




Note:
dimension:In millimeters

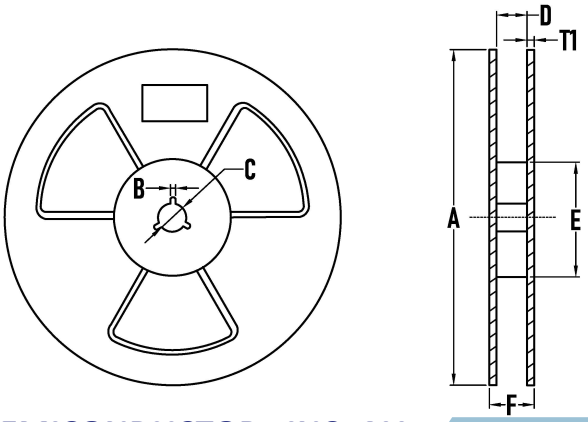
SYMBOL	MILLIMETER		Inches	
	MIN	MAX	MIN	MAX
D	5.5	6.1	0.217	0.240
D1	2.7	3.3	0.106	0.130
T	7.4	8.4	0.291	0.331
T1	0.8	1.6	0.031	0.063
d	–	0.3	–	0.012
H1	2.0	2.6	0.079	0.102
H	2.1	2.7	0.083	0.106
L	6.5	7.1	0.256	0.280

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