

**SURFACE MOUNT
GLASS PASSIVATED RECTIFIERS**

**REVERSE VOLTAGE – 600 to 1000 Volts
FORWARD CURRENT – 3.0 Amperes**

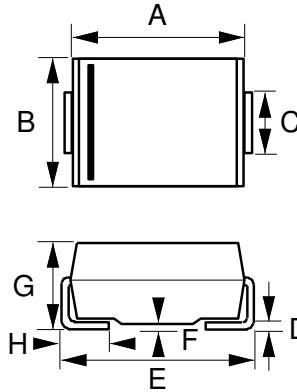
FEATURES

- Glass passivated chip
- For surface mounted applications
- Low reverse leakage current
- Low forward voltage drop
- High current capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

MECHANICAL DATA

- Package: Molded plastic
- Package Material molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl.) "Halogen-free".
- Polarity: Color band denotes cathode
- Weight: 0.246 grams (Approximate)

SMC



SMC		
DIM.	MIN.	MAX
A	6.60	7.11
B	5.59	6.22
C	2.92	3.18
D	0.15	0.31
E	7.75	8.13
F	0.05	0.20
G	2.01	2.40
H	0.76	1.52
All dimension in millimeter		

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	S3J	S3K	S3M	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	600	800	1000	V
Maximum DC blocking voltage	V_{DC}	600	800	1000	V
Maximum average forward rectified current @ $T_L=75^\circ\text{C}$	$I_{(AV)}$		3.0		A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	@ $T_J=25^\circ\text{C}$		120		A
	@ $T_J=125^\circ\text{C}$		100		A
Peak forward surge current 1ms single half sine-wave superimposed on rated load	@ $T_J=25^\circ\text{C}$		240		A
	@ $T_J=125^\circ\text{C}$		200		A
I^2t rating for fusing (t = 8.3 ms)	I^2t		59.8		A ² S
Typical junction capacitance (Note 4)	C_T		40		pF
Operation and storage temperature range	T_J, T_{STG}		-55 to +150		°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	MAX.	UNIT
Forward voltage	$I_F=3.0\text{A}$ $T_J=25^\circ\text{C}$	V_F	1.15	V
Leakage current	V_R at rated $T_J=25^\circ\text{C}$	I_R	10	uA
	$T_J=125^\circ\text{C}$		250	

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP.	UNIT
Typical thermal resistance (Note 5)	R_{thJA}	50	°C/W
	R_{thJL}	10	

DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	UNIT
Reverse recovery time	$I_F=0.5\text{A}, I_{rr}=0.25\text{A}, I_R=1.0\text{A}$	t_{rr}	2000	ns

Note:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
5. Thermal resistance junction to ambient and lead.

REV. 11, Nov.-2021, KSDC01

**RATING AND CHARACTERISTIC CURVES
S3J-S3M(LS)**

FIG.1- FORWARD CURRENT DERATING CURVE

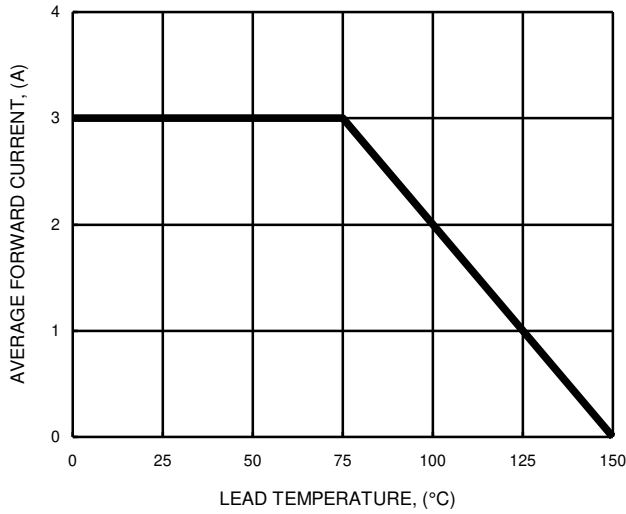


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

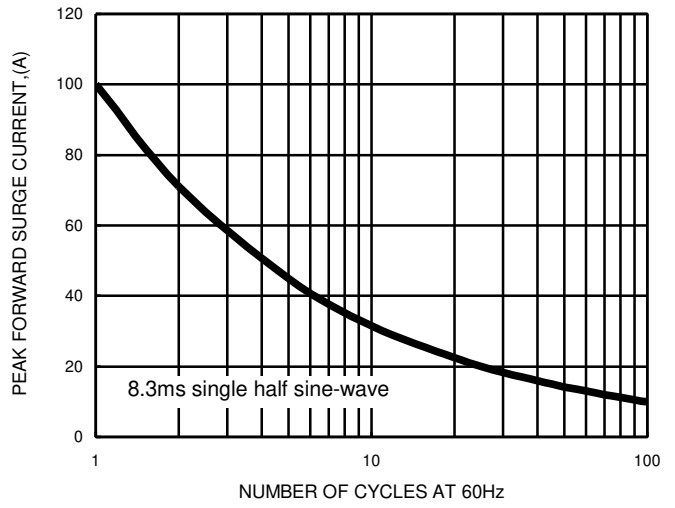


FIG.3- TYPICAL FORWARD CHARACTERISTICS

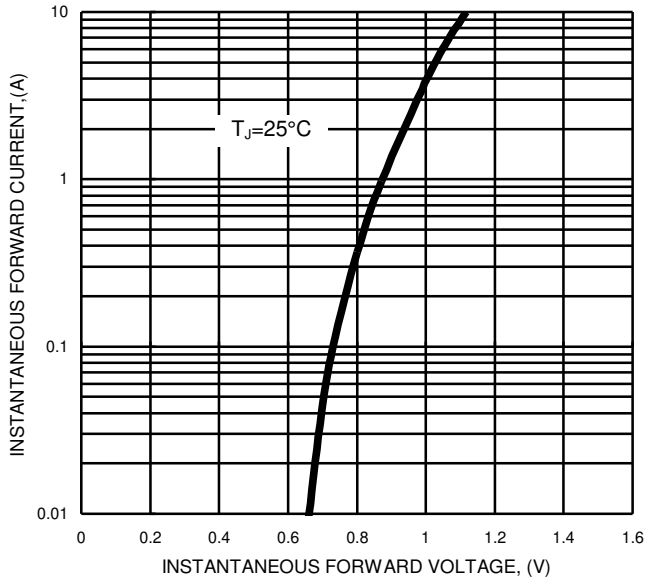
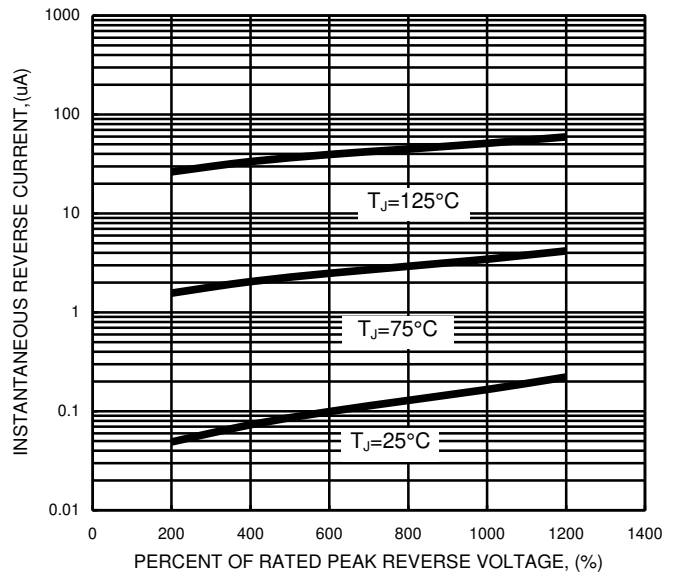


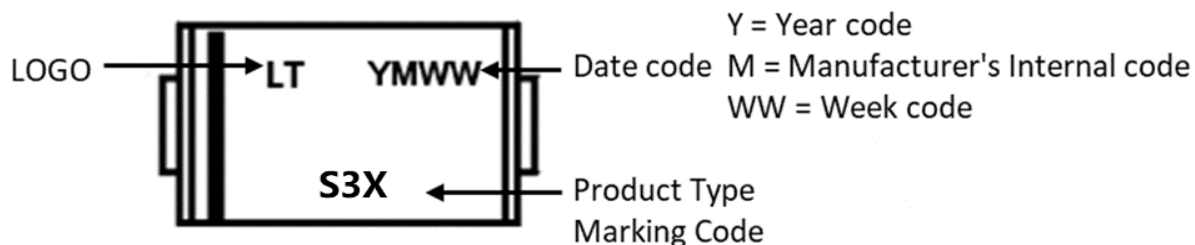
FIG.4- TYPICAL REVERSE CHARACTERISTICS



Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
S3J_HF	SMC	3000pcs	Tape & Reel
S3K_HF	SMC	3000pcs	Tape & Reel
S3M_HF	SMC	3000pcs	Tape & Reel

Marking Information:



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