

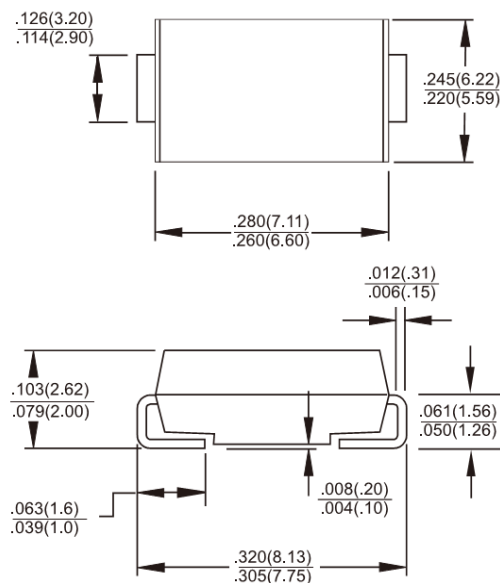
**SMC/DO-214AB**

**Features**

- ◇ Glass passivated junction chip
- ◇ For surface mounted application
- ◇ Low profile package
- ◇ Built-in strain relief, Ideal for automated placement
- ◇ Easy pick and place
- ◇ Esuper fast recovery time for high efficiency
- ◇ High temperature soldering guaranteed:  
260 °C/10 seconds at terminals
- ◇ Plastic material used carries Underwriters  
Laboratory Classification 94V-0
- ◇ Green compound with suffix "G" on packing  
code & prefix "G" on datecode
- ◇ High reliability grade (AEC Q101 specified)

**Mechanical Data**

- ◇ Cases: Molded plastic
- ◇ Epoxy: UL 94V-0 rate flame retardant
- ◇ Terminals: Pure tin plated, lead free, solderable per  
MIL-STD-202, Method 208 guaranteed
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.21 grams
- ◇ Packing: 16mm tape per EIA STD RS-481


**Dimensions in inches and (millimeters)**
**Marking Diagram**


- ES3X = Specific Device Code
- G = Green Compound
- Y = Year
- M = Work Month

**Maximum Ratings and Electrical Characteristics**

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbo l	ES 3A	ES 3B	ES 3C	ES 3D	ES 3F	ES 3G	ES 3H	ES 3J	Units	
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	500	600	V	
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	350	420	V	
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	500	600	V	
Maximum Average Forward Rectified see fig. 1	$I_{F(AV)}$	3									A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (IEDEC method)	$I_{FSM}$	100									A
Maximum Instantaneous Forward Voltage (Note 1) @ 3 A	$V_F$	0.95			1.3		1.7			V	
Maximum DC Reverse Current @ $T_A=25\text{ }^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A=100\text{ }^\circ\text{C}$	$I_R$					10		500		uA	
Typical Junction Capacitance (Note 2)	$C_j$	45			30					pF	
Typical Reverse Recovery Time (Note 3)	$T_{rr}$					35				nS	
Typical Thermal Resistance	$R_{\theta JA}$					47				$^\circ\text{C/W}$	
	$R_{\theta JL}$					12					
Operating Temperature Range	$T_J$					- 55 to + 150				$^\circ\text{C}$	
Storage Temperature Range	$T_{STG}$					- 55 to + 150				$^\circ\text{C}$	

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

Note 3: Reverse Recovery Test Conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{RR}=0.25A$

## RATINGS AND CHARACTERISTIC CURVES (ES3A THRU ES3J)

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

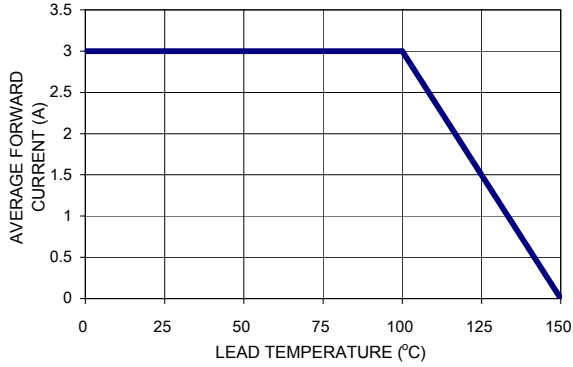


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

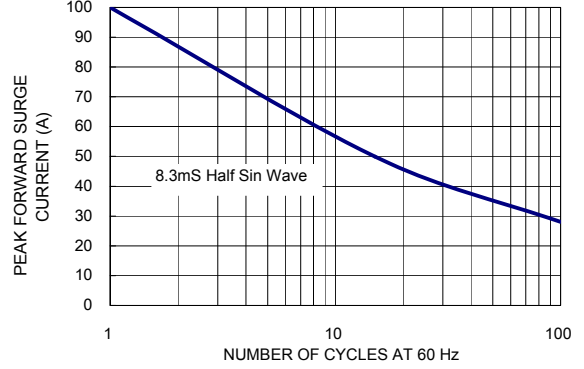


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

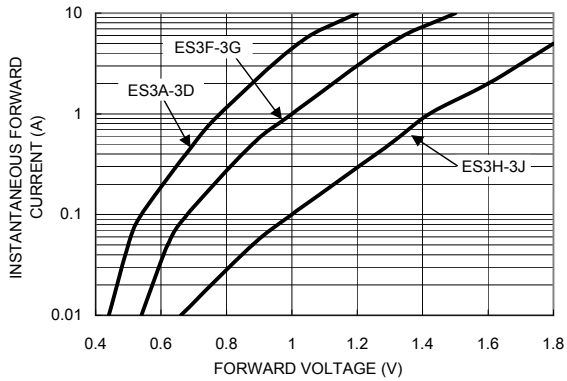


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

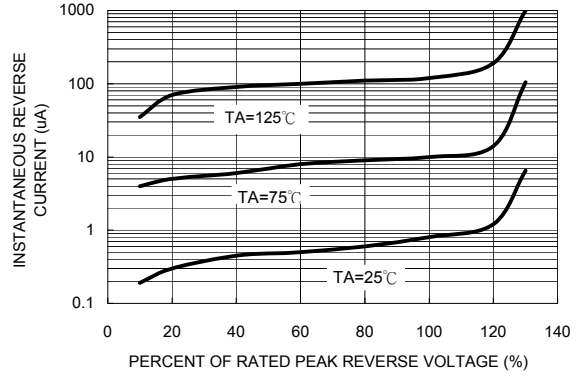


FIG. 5 TYPICAL JUNCTION CAPACITANCE

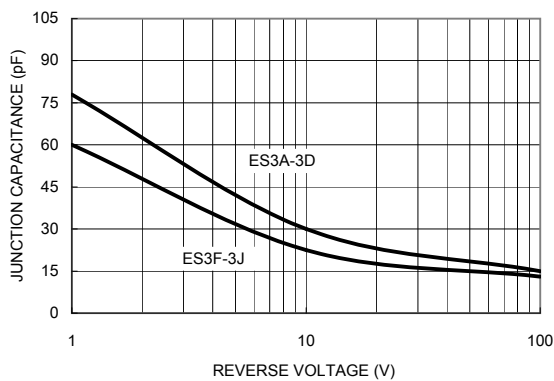


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE

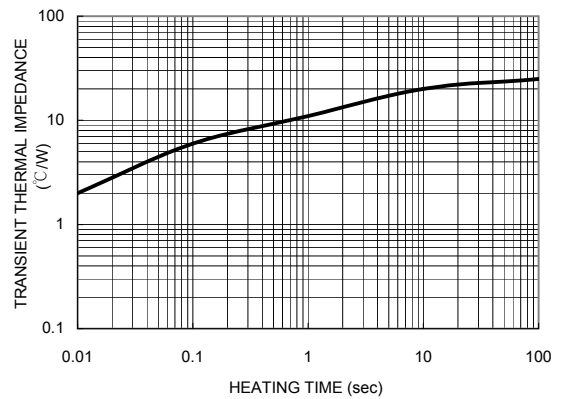


FIG. 7- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

