

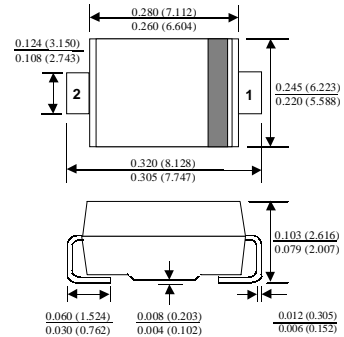
## ES3A - ES3D

### Features

- For surface mount applications.
- Glass passivated junction.
- Low profile package.
- Easy pick and place.
- Built-in strain relief.
- Superfast recovery times for high efficiency.



**SMC/DO-214AB**  
COLOR BAND DENOTES CATHODE



## 3.0 Ampere Superfast Rectifiers

### Absolute Maximum Ratings\* $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$I_o$	Average Rectified Current .375 " lead length @ $T_A = 75^\circ\text{C}$	3.0	A
$i_{f(\text{surge})}$	Peak Forward Surge Current 8.3 ms single half-sine-wave Superimposed on rated load (JEDEC method)	100	A
$P_D$	Total Device Dissipation Derate above $25^\circ\text{C}$	2.66 21.28	W mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient**	47	$^\circ\text{C}/\text{W}$
$R_{\theta JL}$	Thermal Resistance, Junction to Lead**	12	$^\circ\text{C}/\text{W}$
$T_{\text{stg}}$	Storage Temperature Range	-50 to +150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature	-50 to +150	$^\circ\text{C}$

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

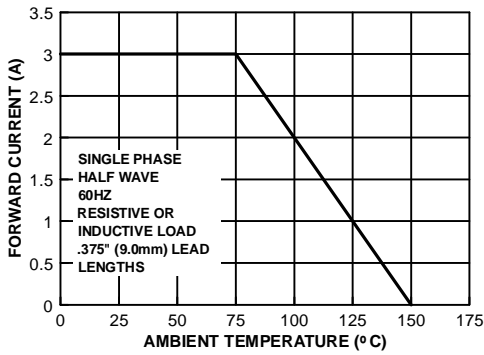
\*\* Device mounted on FR-4 PCB 0.013 mm.

### Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

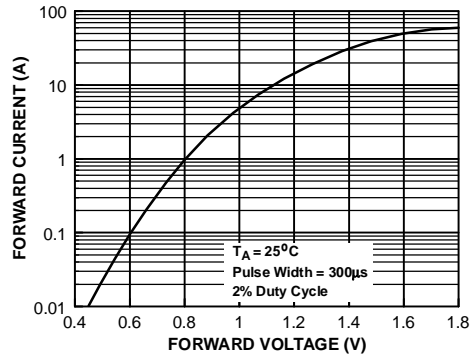
Parameter	Device				Units
	3A	3B	3C	3D	
Peak Repetitive Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
DC Reverse Voltage (Rated $V_R$ )	50	100	150	200	V
Maximum Reverse Current @ rated $V_R$ $T_A = 25^\circ\text{C}$	10				$\mu\text{A}$
$T_A = 100^\circ\text{C}$	500				$\mu\text{A}$
Maximum Reverse Recovery Time $I_F = 0.5 \text{ A}$ , $I_R = 1.0 \text{ A}$ , $I_{RR} = 0.25 \text{ A}$	20				nS
Maximum Forward Voltage @ 3.0 A	0.90				V
Typical Junction Capacitance $V_R = 4.0 \text{ V}$ , $f = 1.0 \text{ MHz}$	45				pF

# Typical Characteristics

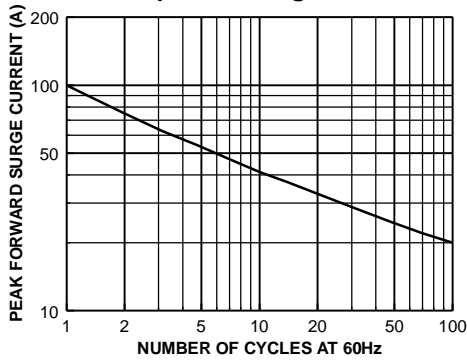
**Forward Current Derating Curve**



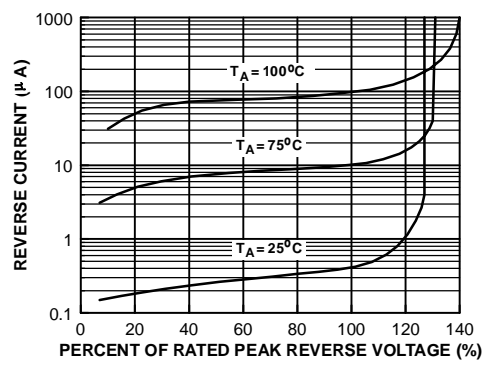
**Forward Characteristics**



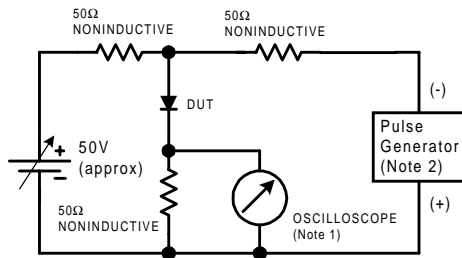
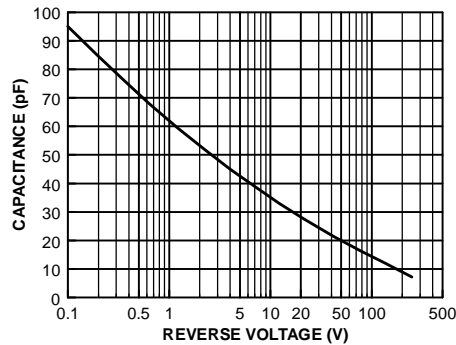
**Non-Repetitive Surge Current**



**Reverse Characteristics**

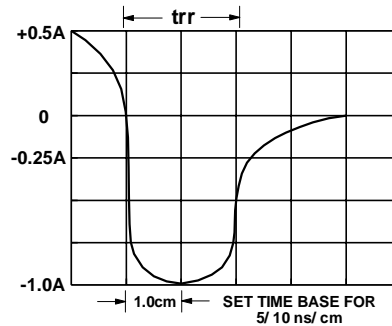


**Junction Capacitance**



**NOTES:**

1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.



**Reverse Recovery Time Characteristic and Test Circuit Diagram**

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GTO™	SuperSOT™-8
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