

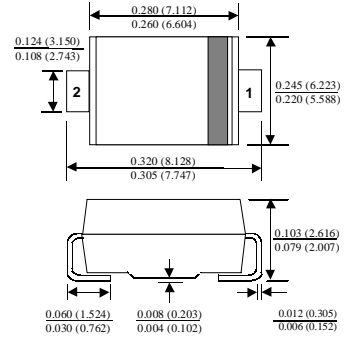
ES3A - ES3D

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°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_{stg}	Storage Temperature Range	-50 to +150	$^\circ\text{C}$
T_J	Operating Junction Temperature	-50 to +150	$^\circ\text{C}$

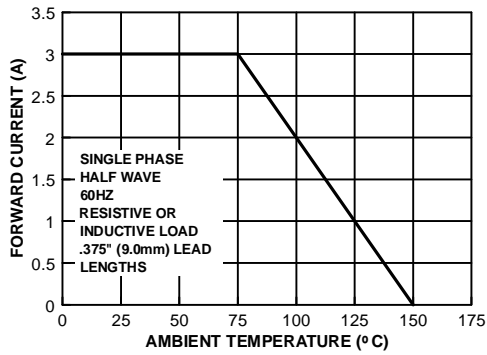
*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

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

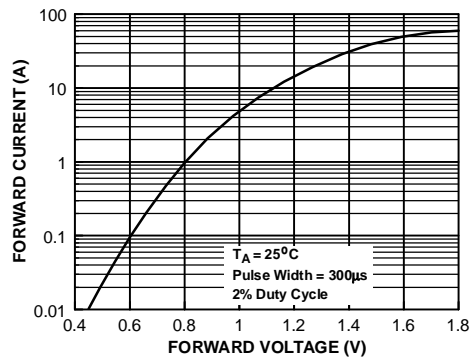
Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

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				μA
$T_A = 100^\circ\text{C}$	500				μA
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

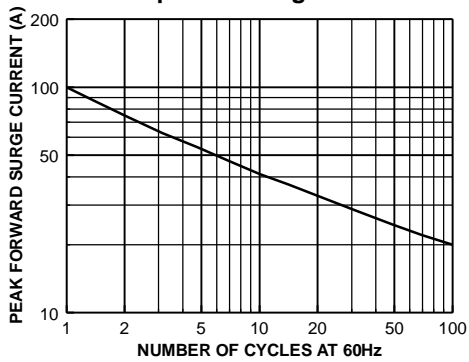
Forward Current Derating Curve



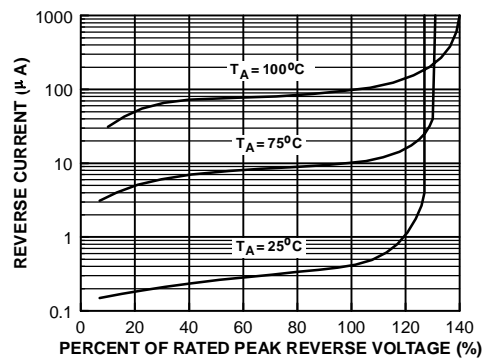
Forward Characteristics



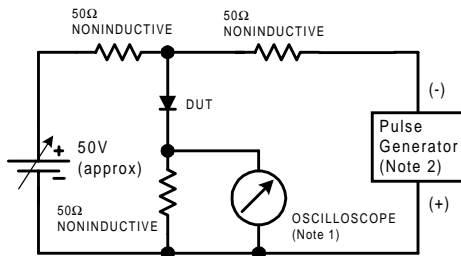
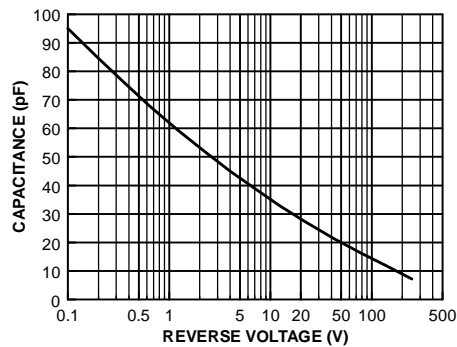
Non-Repetitive Surge Current



Reverse Characteristics

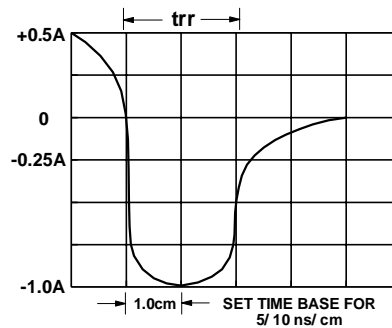


Junction Capacitance



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