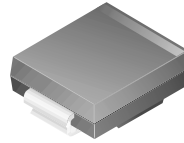


ES3A - ES3D

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

Fast Rectifiers

Absolute Maximum Ratings*

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

Symbol	Parameter	Value				Units
		3A	3B	3C	3D	
V_{RRM}	Maximum Repetitive Reverse Voltage	50	100	150	200	V
$I_{F(AV)}$	Average Rectified Forward Current, .375" lead length @ $T_A = 75^\circ\text{C}$	3.0				A
I_{FSM}	Non-repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave	100				A
T_{stg}	Storage Temperature Range	-55 to +150				$^\circ\text{C}$
T_J	Operating Junction Temperature	-55 to +150				$^\circ\text{C}$

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

Thermal Characteristics

Symbol	Parameter	Value	Units
P_D	Power Dissipation	1.66	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient*	47	$^\circ\text{C/W}$
$R_{\theta JL}$	Thermal Resistance, Junction to Lead*	12	$^\circ\text{C/W}$

*Device mounted on FR-4 PCB 0.013 mm.

Electrical Characteristics

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

Symbol	Parameter	Device				Units
		3A	3B	3C	3D	
V_F	Forward Voltage @ 3.0 A	0.90				V
t_{rr}	Reverse Recovery Time $I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{RR} = 0.25\text{ A}$	20				ns
I_R	Reverse Current @ rated V_R $T_A = 25^\circ\text{C}$ $T_A = 100^\circ\text{C}$	10 500				μA μA
C_T	Total Capacitance $V_R = 4.0\text{ V}, f = 1.0\text{ MHz}$	45				pF

Typical Characteristics

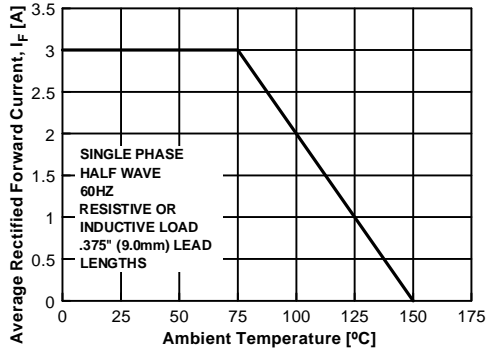


Figure 1. Forward Current Derating Curve

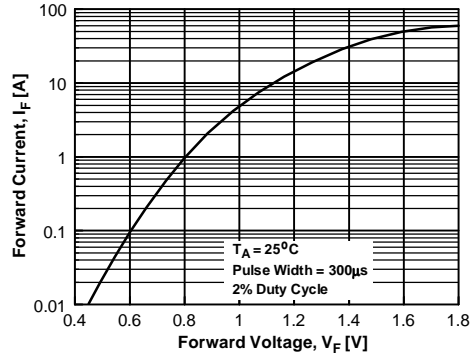


Figure 2. Forward Voltage Characteristics

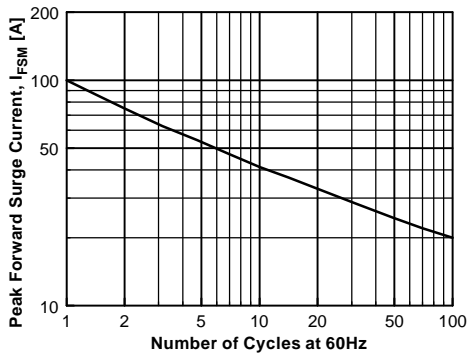


Figure 3. Non-Repetitive Surge Current

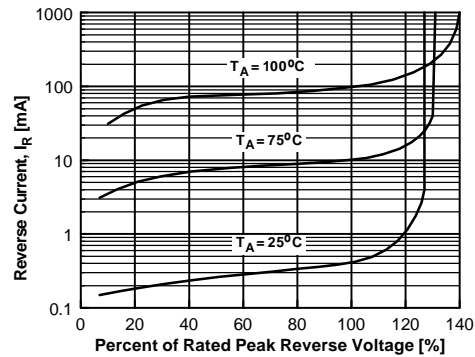


Figure 4. Reverse Current vs Reverse Voltage

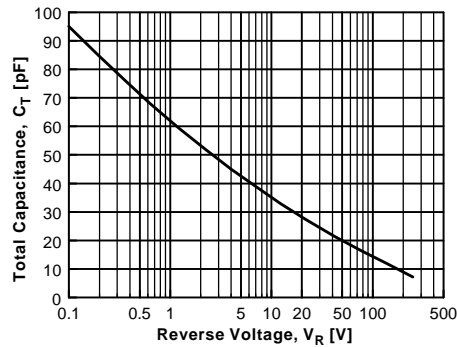
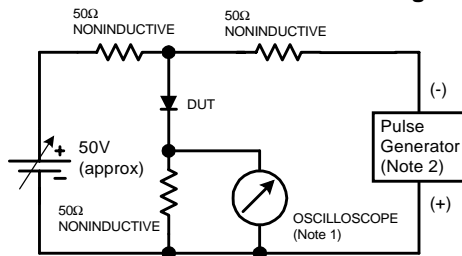
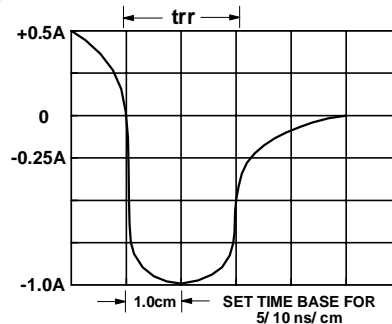


Figure 5. Total Capacitance



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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