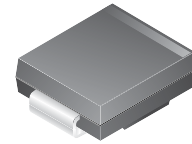


ES3A - ES3J

Fast Rectifiers

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

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

Symbol	Parameter	Value					Units
		ES3A	ES3B	ES3C	ES3D	ES3J	
V_{RRM}	Maximum Repetitive Reverse Voltage	50	100	150	200	600	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_J, T_{STG}	Operating Junction and Storage Temperature Range	-50 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	$^\circ\text{C}/\text{W}$
$R_{\theta JL}$	Thermal Resistance, Junction to Lead *	12	$^\circ\text{C}/\text{W}$

* Device mounted on FR-4 PCB 0.013 mm.

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

Symbol	Parameter	Value					Units	
		ES3A	ES3B	ES3C	ES3D	ES3J		
V_F	Maximum Forward Voltage @ $I_F = 3.0\text{ A}$	0.95					1.7	V
T_{rr}	Reverse Recovery Time $I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{RR} = 0.25\text{ A}$	Typ.	20			35	ns	
		Max.	30			45	ns	
I_R	Maximum Reverse Current @ rated V_R $T_a = 25^\circ\text{C}$ $T_a = 100^\circ\text{C}$	10					μA	
		500					μA	
C_T	Total Capacitance $V_R = 4.0\text{ V}, f = 1.0\text{ MHz}$	45					pF	

Typical Performance Characteristics

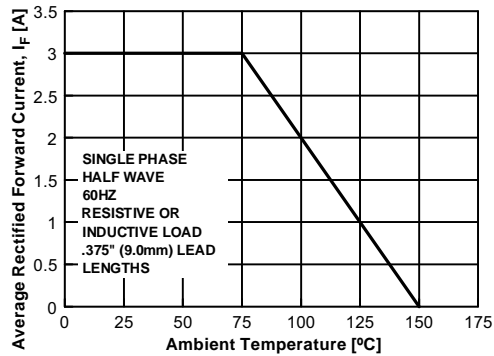


Figure 1. Forward Current Deration Curve

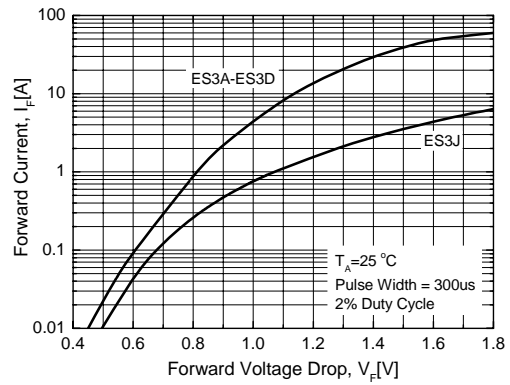


Figure 2. Forward Voltage Characteristics

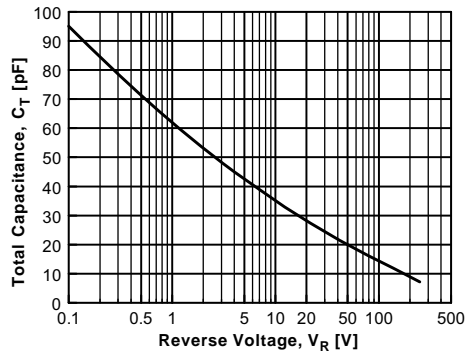


Figure 3. Total Capacitance

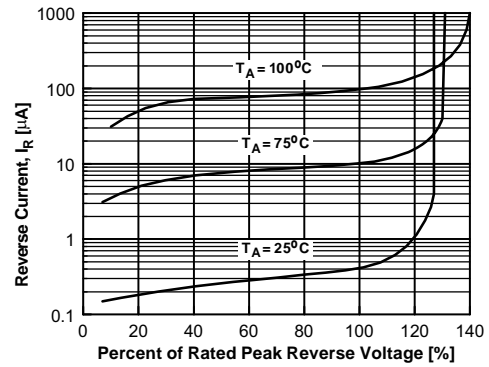
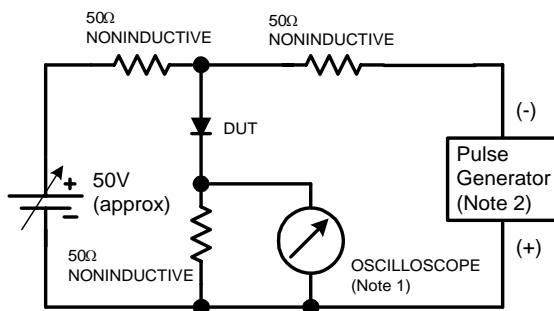
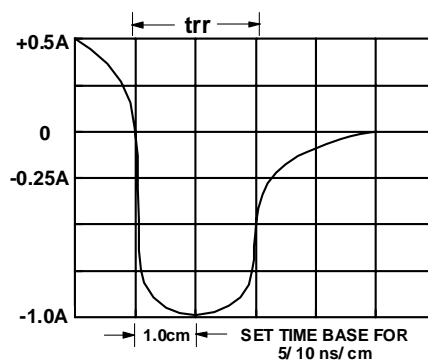


Figure 4. Reverse Current vs Reverse Voltage



NOTES:

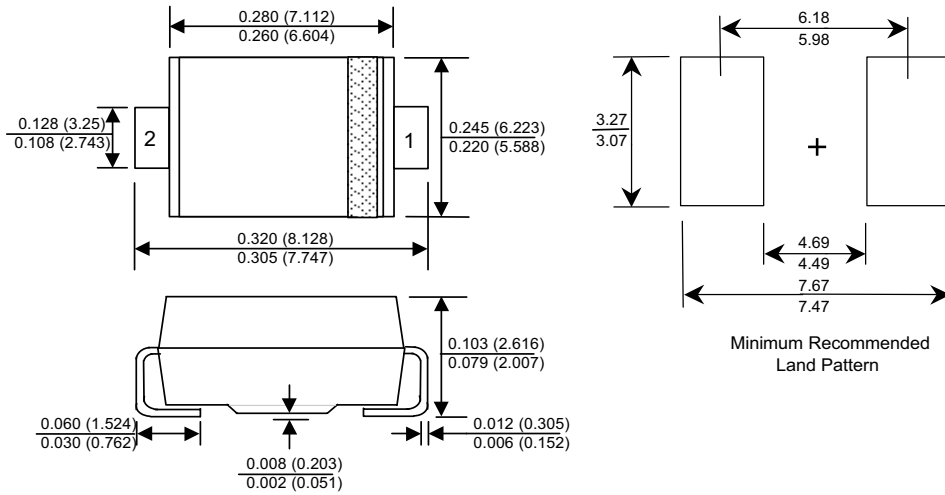
1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.



Reverse Recovery Time Characteristic and Test Circuit Diagram

Package Dimensions

SMC / DO - 214AB





Dimensions in Inches(Millimeters)



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