FAIRCHILD SEMICONDUCTOR®

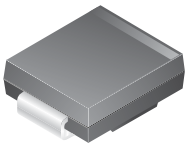
April 2012

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°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°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					°C

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

Thermal Characteristics

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

* Device mounted on FR-4 PCB 0.013 mm.

Electrical Characteristics T_a = 25°C unless otherwise noted

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

Typical Performance Characteristics

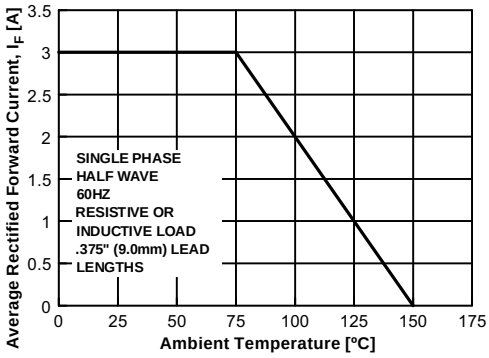


Figure 1. Foward Current Deration Curve

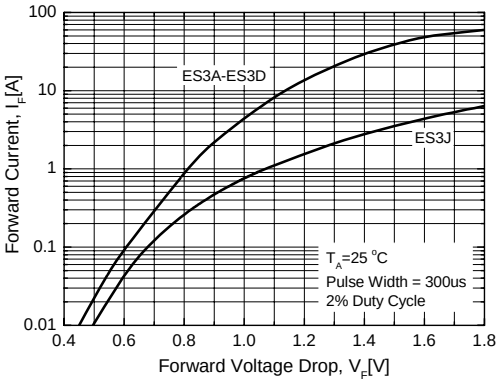


Figure 2. Foward Voltage Characteristics

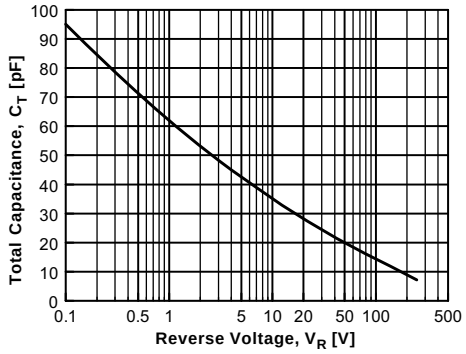


Figure 3. Total Capacitance

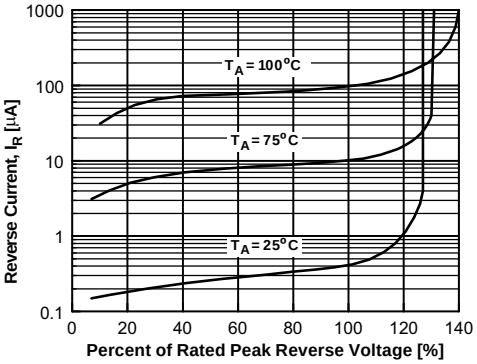
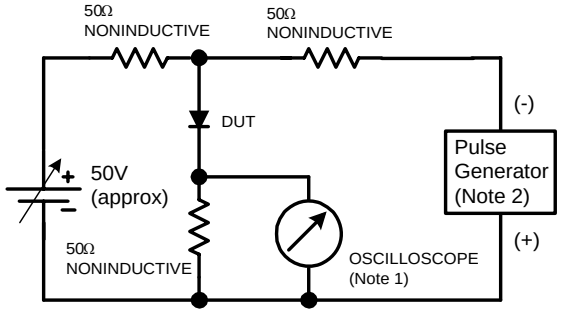
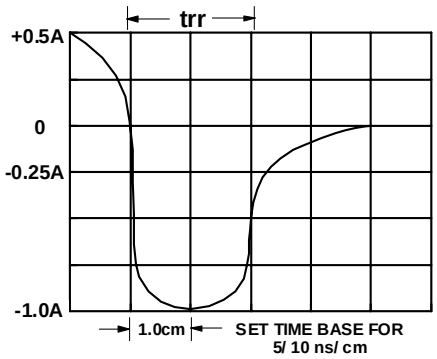


Figure 4. Reverse Current vs Reverse Voltage



NOTES:

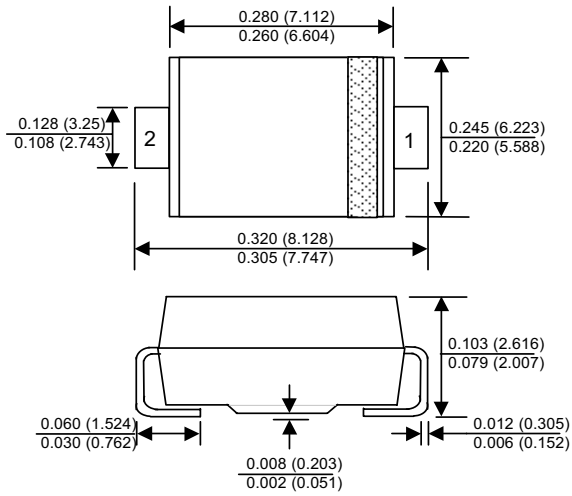
1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.

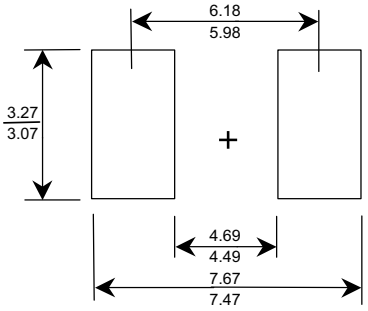


Reverse Recovery Time Characterstic and Test Circuit Diagram

Package Dimensions

SMC / DO - 214AB





Minimum Recommended
Land Pattern

Dimensions in Inches(Millimeters)

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