

## ES3A-ES3J SURFACE MOUNT SUPER FAST RECTIFIER

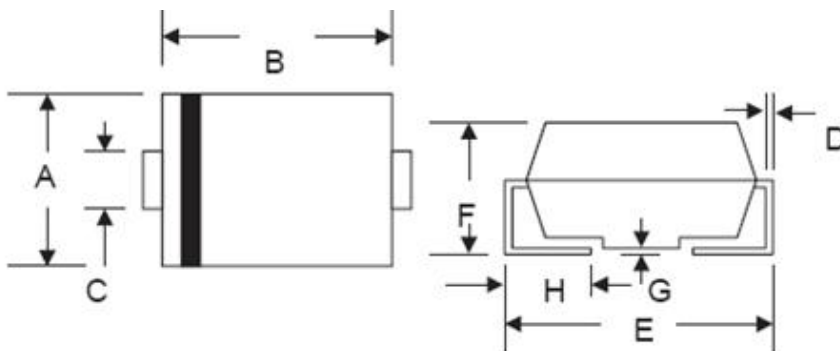
**Features:**

- Glass Passivated Die Construction
- Ideally Suited for Automatic Assembly
- Low Forward Voltage Drop, High Efficiency
- Low Power Loss
- Super-Fast Recovery Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

**Mechanical Data:**

- Case: Low Profile Molded Plastic
- Terminals: Plated Leads, Solderable per MIL-STD-750, Method 2026
- Weight: 0.21 grams(approx)

**Mechanical Dimensions: In mm / Inches**



SMC/DO-214AB				
Dim	Min	Max	Min	Max
A	5.59	6.22	0.220	0.245
B	6.60	7.11	0.260	0.280
C	2.75	3.25	0.108	0.128
D	0.152	0.305	0.006	0.012
E	7.75	8.13	0.305	0.320
F	2.00	2.62	0.079	0.103
G	0.051	0.203	0.002	0.008
H	0.76	1.27	0.030	0.05
			In mm	In inch

**SMC**

**Marking Diagram:**

Where XXXXX is YYWWL



ES3A	= Part Name
YY	= Year
WW	= Week
L	= Lot Number

**Cautions:** Molding resin  
 Epoxy resin UL:94V-0

**Ordering Information**

Device	Package	Shipping
ES3A-ES3J	SMC (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

**Maximum Ratings and Electrical Characteristics**

Rating at 25°C ambient temperature unless otherwise specified

Single Phase half wave 60Hz, resistive or inductive load. For capacitive load current derate by 20%.

Characteristic	Symbol	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	150	200	300	400	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	210	280	420	V
Average Rectified Output Current @ $T_L = 75^\circ C$	$I_o$	3.0							V
Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	100							A
Forward Voltage @ $I_F = 3.0A$	$V_F$	0.95				1.25		1.7	V
Maximum DC reverse current at rated DC blocking voltage $T_A = 25^\circ C$ $T_A = 100^\circ C$	$I_R$					5.0 500			$\mu A$
Typical junction capacitance (Note 2)	$C_J$					45			pF
Maximum Reverse Recovery Time (Note 1)	$T_{rr}$					35			ns
Typical Thermal Resistance Junction to Lead (Note 3)	$R_{\theta JL}$					16			K/W
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +150							$^\circ C$

**Note:** 1. Measured with  $I_F = 0.5A$ ,  $I_R = 1.0A$ ,  $I_{rr} = 0.25A$ ,  
 2. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC  
 3. Mounted on P.C. Board with 8.0mm<sup>2</sup> lead area

**Technical Data**  
**Data Sheet N0245, Rev. -**

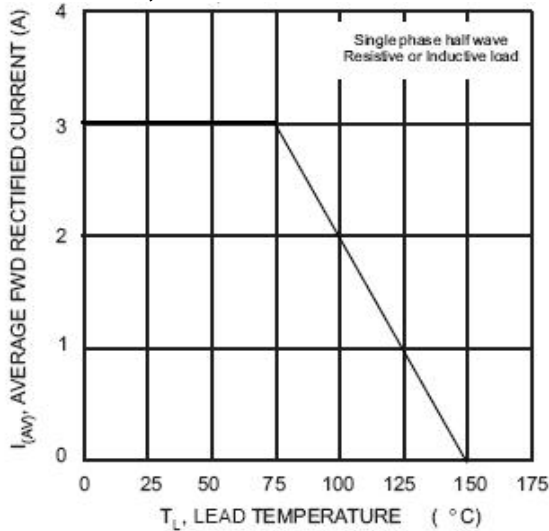


Fig. 1 Forward Current Derating Curve

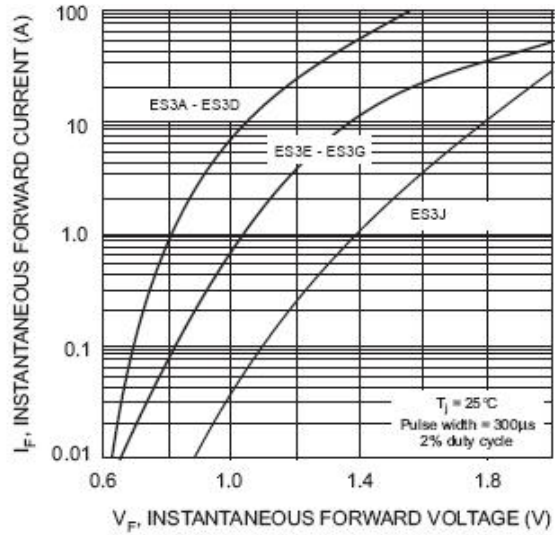


Fig. 2 Typical Forward Characteristics

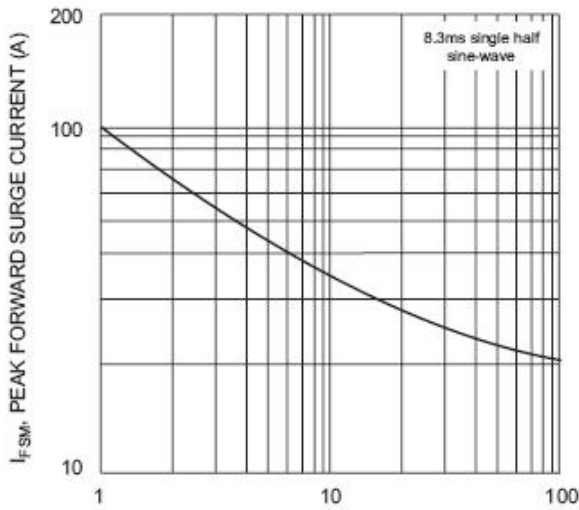


Fig. 3 Peak Forward Surge Current

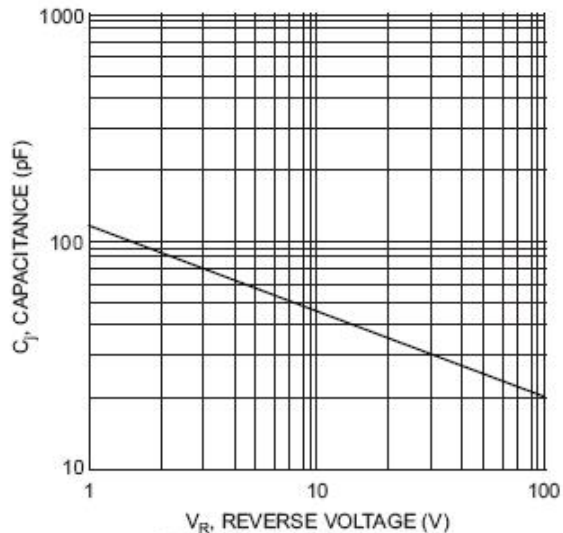
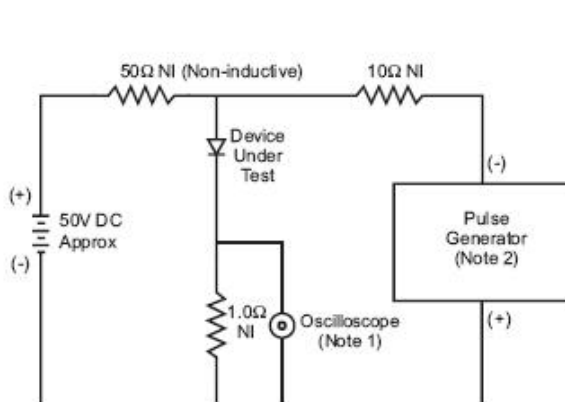
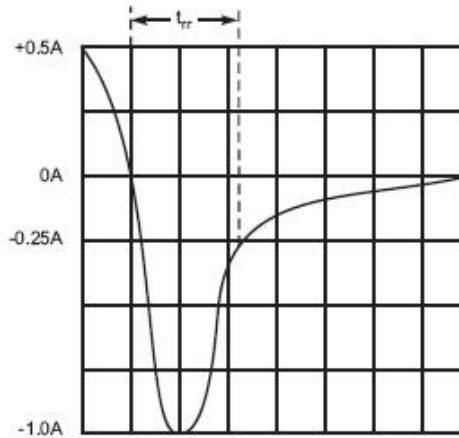


Fig. 4 Typical Junction Capacitance



- Notes:  
1. Rise Time = 7.0ns max. Input Impedance = 1.0M $\Omega$ , 22pF.  
2. Rise Time = 10ns max. Input Impedance = 50 $\Omega$ .



Set time base for 5/10ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

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