

# ES3A - ES3J

**PRV : 50 - 600 Volts**  
**Io : 3.0 Amperes**

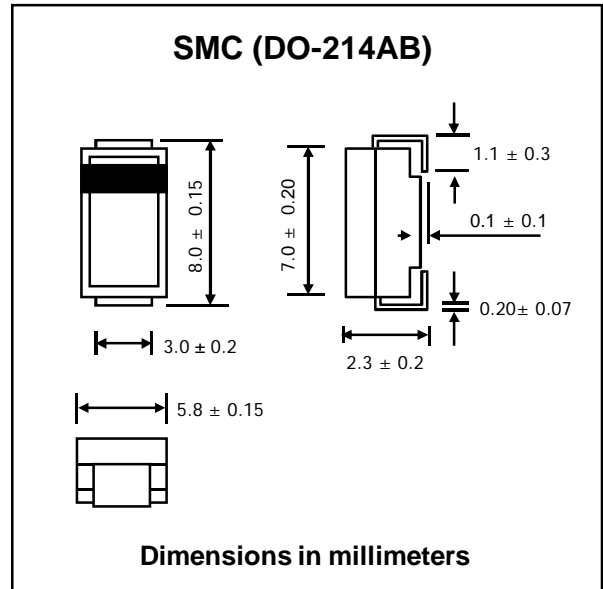
**FEATURES :**

- \* Glass passivated junction chip
- \* High current capability
- \* High surge current capability
- \* High reliability
- \* Low reverse current
- \* Low forward voltage drop
- \* Super fast recovery time
- \* Pb / RoHS Free

**MECHANICAL DATA :**

- \* Case : SMC Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Lead Formed for Surface Mount
- \* Mounting position : Any
- \* Weight : 0.21 gram

## SURFACE MOUNT SUPER FAST RECTIFIERS



**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Rating at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

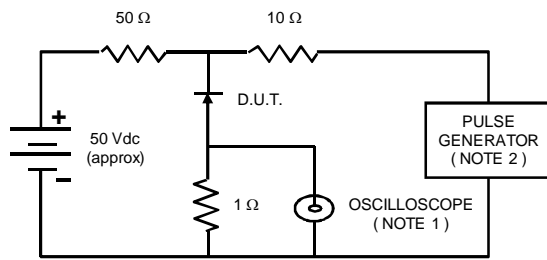
RATING	SYMBOL	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J	UNIT
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	V
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	600	V
Maximum Average Forward Current at $T_L = 100\text{ }^\circ\text{C}$	$I_{F(AV)}$	3.0							A
Maximum Peak Forward Surge Current, 8.3ms Single half sine wave Superimposed on rated load	$I_{FSM}$	100							A
Maximum Peak Forward Voltage at $I_F = 3.0\text{ A}$ .	$V_F$	0.95				1.3		1.7	V
Maximum DC Reverse Current $T_a = 25\text{ }^\circ\text{C}$ at Rated DC Blocking Voltage $T_a = 100\text{ }^\circ\text{C}$	$I_R$	10							$\mu\text{A}$
	$I_{R(H)}$	500							
Maximum Reverse Recovery Time ( Note 1 )	$T_{rr}$	35							ns
Typical Junction Capacitance ( Note 2 )	$C_J$	50				40			pF
Junction Temperature Range	$T_J$	- 55 to + 150							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	- 55 to + 150							$^\circ\text{C}$

**Notes :**

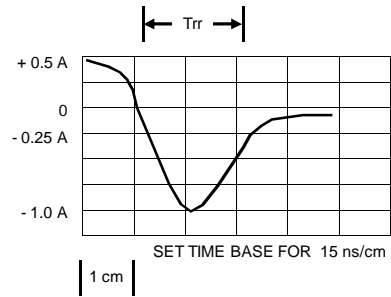
- ( 1 ) Reverse Recovery Test Conditions :  $I_F = 0.5\text{ A}$ ,  $I_R = 1.0\text{ A}$ ,  $I_{rr} = 0.25\text{ A}$ .
- ( 2 ) Measured at 1.0 MHz and applied reverse voltage of 4.0 Vdc

## RATING AND CHARACTERISTIC CURVES ( ES3A - ES3J )

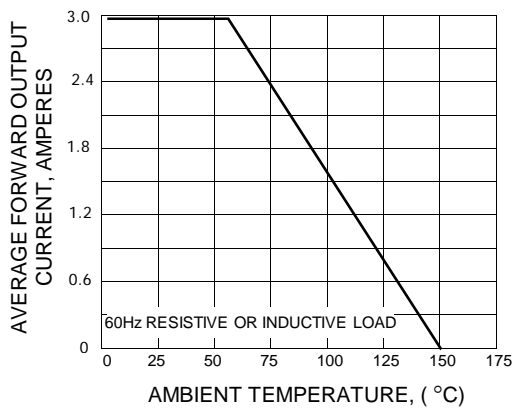
**FIG.1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**



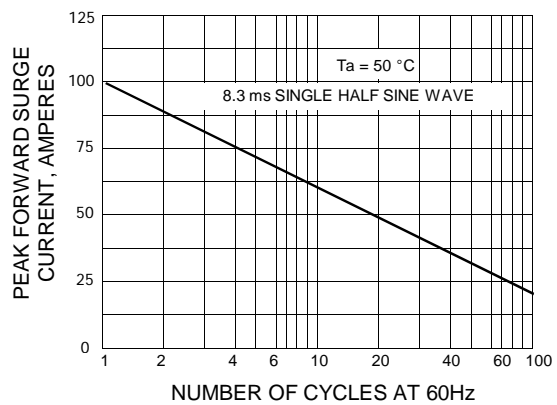
NOTES: 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF.  
 2. Rise time = 10 ns max., Source Impedance = 50 ohms.  
 3. All Resistors = Non-inductive Types.



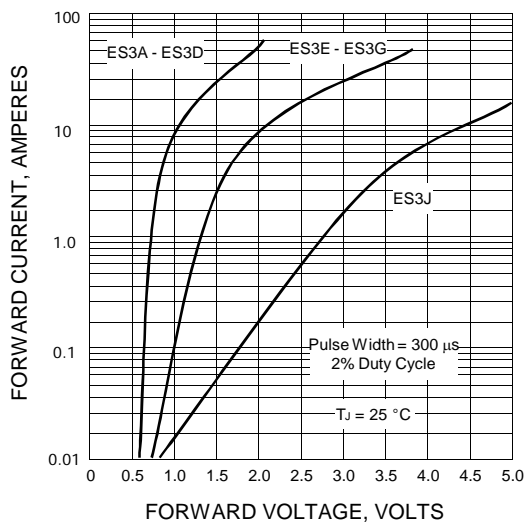
**FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT**



**FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



**FIG.4 - TYPICAL FORWARD CHARACTERISTICS**



**FIG.5 - TYPICAL REVERSE CHARACTERISTICS**

