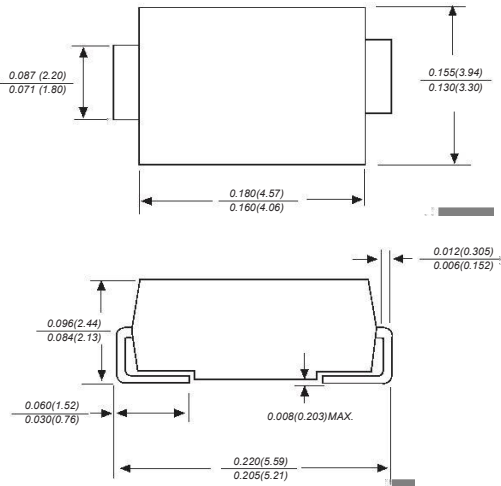


# ES3A THRU ES3J

## SURFACE MOUNT SUPER FAST RECTIFIER

Reverse Voltage - 50 to 600 Volts Forward Current - 3.0 Amperes

### SMB



Dimensions in inches and (millimeters)

### FEATURES

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- For surface mounted applications
- Low reverse leakage
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- High temperature soldering guaranteed: 250°C/10 seconds at terminals
- Glass passivated chip junction

### MECHANICAL DATA

**Case:** JEDEC SMB molded plastic body over passivated chip  
**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.005 ounce, 0.138grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

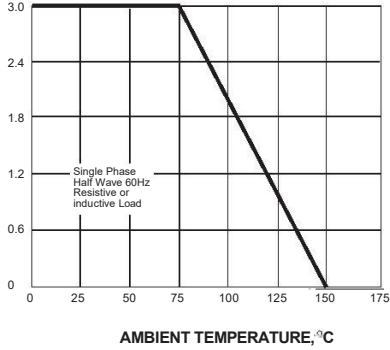
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

	SYMBOLS	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J	UNITS
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	150	200	300	400	600	VOLTS
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	210	280	420	VOLTS
Maximum DC blocking voltage	$V_{DC}$	50	100	150	200	300	400	600	VOLTS
Maximum average forward rectified current at $T_L=75^\circ\text{C}$	$I_{(AV)}$	3.0							Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	100.0							Amps
Maximum instantaneous forward voltage at 3.0A	$V_F$	0.95			1.25		1.7		Volts
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=100^\circ\text{C}$	$I_R$	5.0 100.0							$\mu\text{A}$
Maximum reverse recovery time (NOTE 1)	$t_{rr}$	35							ns
Typical junction capacitance (NOTE 2)	$C_J$	45.0							pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	47.0							$^\circ\text{C/W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +150							$^\circ\text{C}$

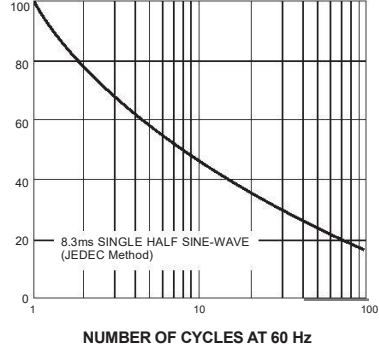
- Note:**
1. Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$
  2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
  3. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

# RATINGS AND CHARACTERISTIC CURVES ES3A THRU ES3J

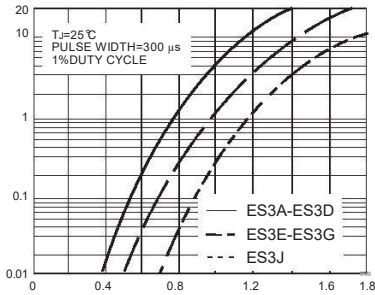
**FIG. 1- FORWARD CURRENT DERATING CURVE**



**FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

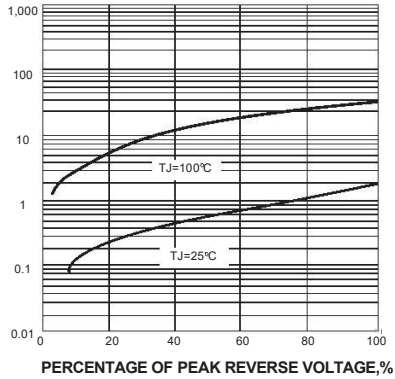


**FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



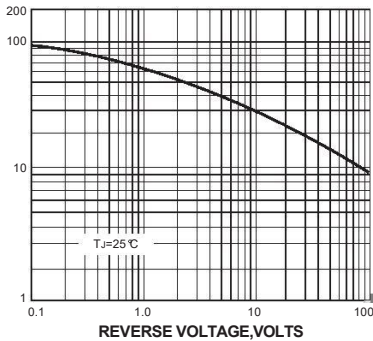
**INSTANTANEOUS FORWARD VOLTAGE, VOLTS**

**FIG. 4-TYPICAL REVERSE CHARACTERISTICS**



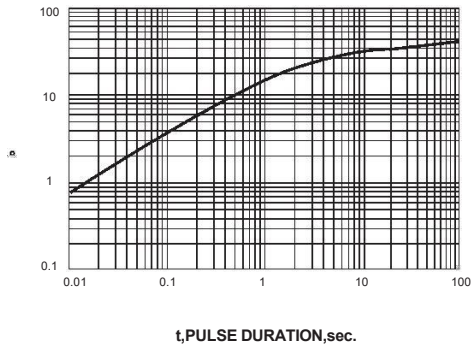
**PERCENTAGE OF PEAK REVERSE VOLTAGE, %**

**FIG. 5-TYPICAL JUNCTION CAPACITANCE**



**REVERSE VOLTAGE, VOLTS**

**FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE**



**t, PULSE DURATION, sec.**