

## SURFACE MOUNT SUPER FAST RECTIFIERS

REVERSE VOLTAGE - **50** to **400** Volts  
FORWARD CURRENT - **3.0** Amperes

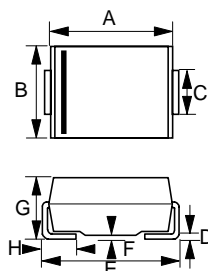
### FEATURES

- Glass passivated chip
- Super fast switching for high efficiency
- For surface mounted applications
- Low forward voltage drop and high current capability
- Low reverse leakage current
- Plastic material has UL flammability classification 94V-0

### MECHANICAL DATA

- Case : Molded plastic
- Polarity : Color band denotes cathode
- Weight : 0.003 ounces, 0.093 grams

### SMB



| SMB  |      |      |
|------|------|------|
| DIM. | MIN. | MAX. |
| A    | 4.06 | 4.57 |
| B    | 3.30 | 3.94 |
| C    | 1.96 | 2.21 |
| D    | 0.15 | 0.31 |
| E    | 5.21 | 5.59 |
| F    | 0.05 | 0.20 |
| G    | 2.01 | 2.62 |
| H    | 0.76 | 1.52 |

All Dimensions in millimeter

### 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, derate current by 20%

| CHARACTERISTICS   | SYMBOL            | ES3A         | ES3B | ES3C | ES3D | ES3G | ES3J | UNIT |
|---|-------------------|--------------|------|------|------|------|------|------|
| Maximum Recurrent Peak Reverse Voltage  | V <sub>RRM</sub>  | 50           | 100  | 150  | 200  | 400  | 600  | V    |
| Maximum RMS Voltage   | V <sub>RMS</sub>  | 35           | 70   | 105  | 140  | 280  | 420  | V    |
| Maximum DC Blocking Voltage   | V <sub>DC</sub>   | 50           | 100  | 150  | 200  | 400  | 600  | V    |
| Maximum Average Forward Rectified Current @TL =110°C  | I <sub>(AV)</sub> | 3.0          |      |      |      |      |      | A    |
| Peak Forward Surge Current<br>8.3ms single half sine-wave<br>super imposed on rated load (JEDEC METHOD) | I <sub>FSM</sub>  | 100          |      |      |      |      |      | A    |
| Maximum forward Voltage at 3.0A DC  | V <sub>F</sub>    | 0.92         |      |      |      | 1.25 | 1.30 | V    |
| Maximum DC Reverse Current @T <sub>J</sub> =25°C<br>at Rated DC Blocking Voltage @T <sub>J</sub> =125°C | I <sub>R</sub>    | 10<br>500    |      |      |      |      |      | uA   |
| Maximum Reverse Recovery Time (Note 1)  | T <sub>RR</sub>   | 25           |      |      |      |      | 35   | ns   |
| Typical Reverse Recovery Time   | T <sub>RR</sub>   | 20           |      |      |      |      | 30   | ns   |
| Typical Junction Capacitance (Note 2)   | C <sub>J</sub>    | 45           |      |      |      |      |      | pF   |
| Typical Thermal Resistance (Note 3)   | R <sub>θ JL</sub> | 10           |      |      |      |      | 15   | °C/W |
| Typical Thermal Resistance (Note 4)   | R <sub>θ JA</sub> | 50           |      |      |      |      |      |      |
| Operating Temperature Range   | T <sub>J</sub>    | -55 to + 150 |      |      |      |      |      | °C   |
| Storage Temperature Range   | T <sub>STG</sub>  | -55 to + 150 |      |      |      |      |      | °C   |

NOTES : 1. Reverse Recovery Test Conditions :I<sub>F</sub>=0.5A,I<sub>R</sub>=1.0A,I<sub>RR</sub>=0.25A.

2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

3. Thermal Resistance junction to Lead

4. Thermal Resistance junction to Ambient

# RATING AND CHARACTERISTIC CURVES ES3A thru ES3J

FIG.1 - FORWARD CURRENT DERATING CURVE

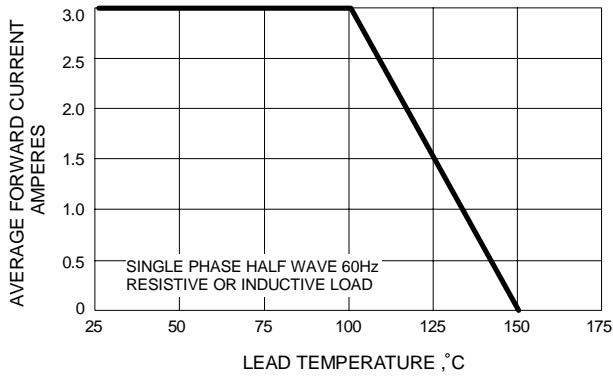


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

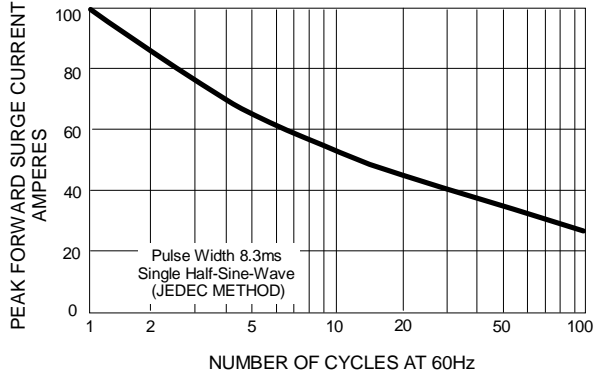


FIG.3 - TYPICAL FORWARD CHARACTERISTICS

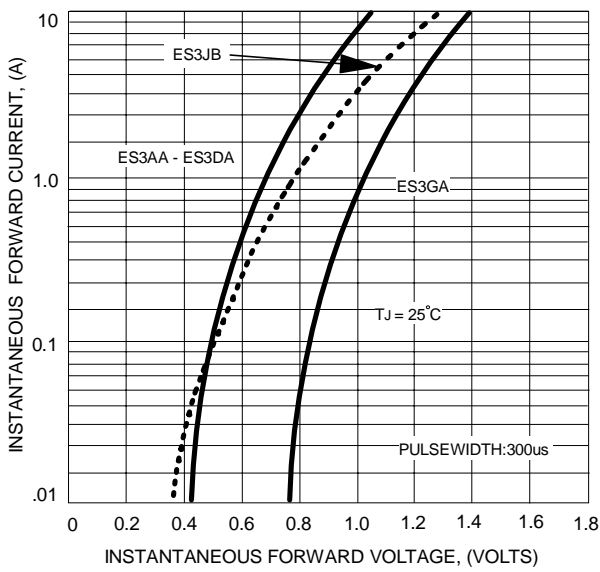


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

