

Pb Free Plating Product

## ES5A thru ES5J



5.0 Ampere Surface Mount Type Super Fast Recovery Rectifier Diodes

**FEATURE**

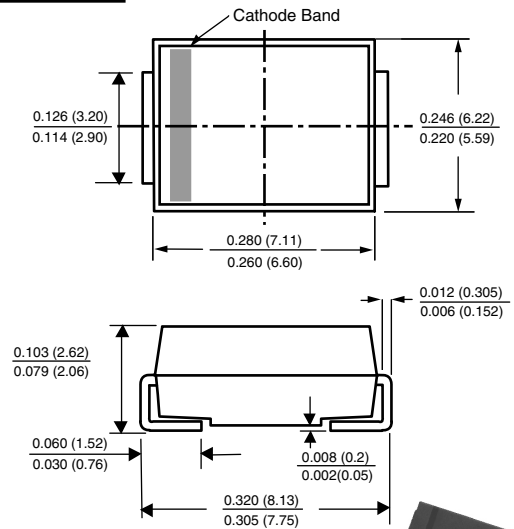
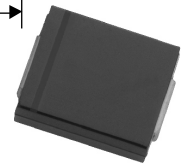
- ◆ Glass passivated chip junction
- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Low reverse leakage
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature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

**MECHANICAL DATA****Case:** SMC/DO-214AB Package**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026**Polarity:** Color band denotes cathode band**Mounting Position:** Any**Weight:** 0.22 gram approximately**APPLICATION**

- ◆ LED SMPS/Industrial power supply
- ◆ HID ballast stabilizer
- ◆ Telecommunication SMPS/LED street lamp

**OUTLINE**

Unit: inch (millimeter)

**SMC/DO-214AB****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                          | ES5A          | ES5B | ES5C | ES5D | ES5E | ES5G | ES5J | UNITS |
|--------------------------------------------------------------------------------------------------------------|----------------------------------|---------------|------|------|------|------|------|------|-------|
| Maximum repetitive peak reverse voltage                                                                      | V <sub>RRM</sub>                 | 50            | 100  | 150  | 200  | 300  | 400  | 600  | VOLTS |
| Maximum RMS voltage                                                                                          | V <sub>RMS</sub>                 | 35            | 70   | 105  | 140  | 210  | 280  | 420  | VOLTS |
| Maximum DC blocking voltage                                                                                  | V <sub>DC</sub>                  | 50            | 100  | 150  | 200  | 300  | 400  | 600  | VOLTS |
| Maximum average forward rectified current at T <sub>L</sub> =75°C                                            | I <sub>(AV)</sub>                | 5.0           |      |      |      |      |      |      | Amps  |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on<br>rated load (JEDEC Method)       | I <sub>FSM</sub>                 | 150.0         |      |      |      |      |      |      | Amps  |
| Maximum instantaneous forward voltage at 5.0A                                                                | V <sub>F</sub>                   | 0.95          |      |      |      | 1.3  |      | 1.7  | Volts |
| Maximum DC reverse current     T <sub>A</sub> =25°C<br>at rated DC blocking voltage    T <sub>A</sub> =100°C | I <sub>R</sub>                   | 10.0<br>300.0 |      |      |      |      |      |      | μA    |
| Maximum reverse recovery time   (NOTE 1)                                                                     | t <sub>rr</sub>                  | 35            |      |      |      |      |      |      | ns    |
| Typical junction capacitance (NOTE 2)                                                                        | C <sub>J</sub>                   | 58.0          |      |      |      |      |      |      | pF    |
| Typical thermal resistance                                                                                   | R <sub>θJA</sub>                 | 47.0          |      |      |      |      |      |      | °C/W  |
| Operating junction and storage temperature range                                                             | T <sub>J</sub> ,T <sub>STG</sub> | -65 to +150   |      |      |      |      |      |      | °C    |

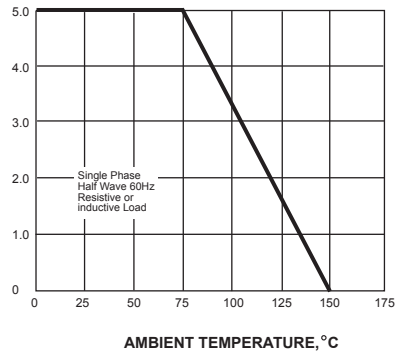
**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$ 

2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

## RATINGS AND CHARACTERISTIC CURVES ES5A thru ES5J

AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



PEAK FORWARD SURGE CURRENT,  
AMPERES

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

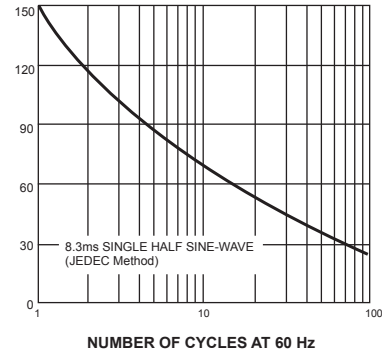


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

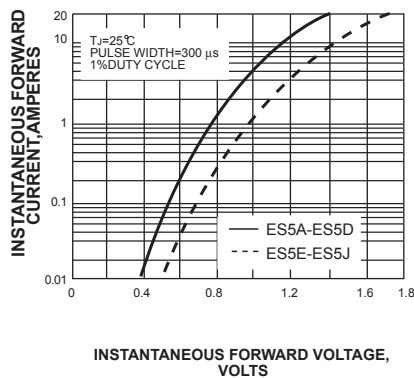


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

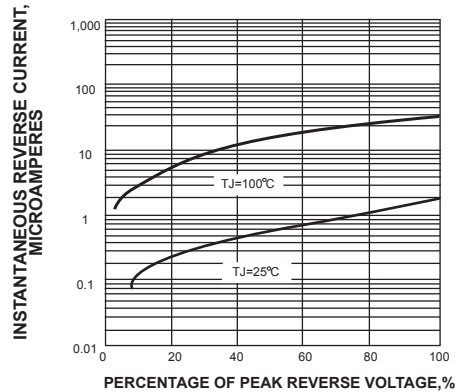
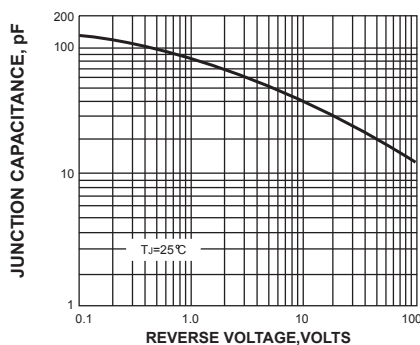


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

