



# ES5A THRU ES5J

## SURFACE MOUNT GLASS PASSIVATED JUNCTION SUPER FAST RECOVERY RECTIFIER

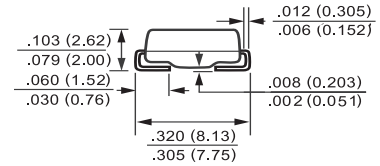
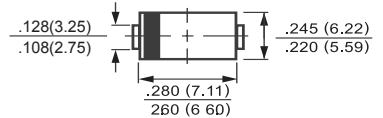
Reverse Voltage: 50 to 600 Volts  
Forward Current: 5.0 Amperes

### Features

- Super fast switching time for high efficiency
- Low forward voltage drop and high current capability
- Low reverse leakage current
- Plastic material has UL flammability classification 94V-0



### SMC (DO-214AB)



Dimensions in inches and (millimeters)

### Mechanical Data

- Case: DO-214AB (SMC) molded plastic body
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Lead formed for surface mount
- Mounting Position: Any

## Maximum Ratings and Electrical Characteristics Rating at 25 °C

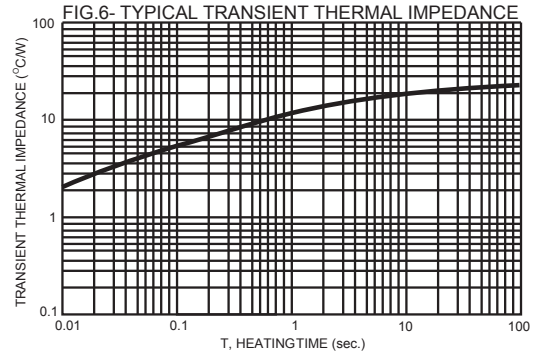
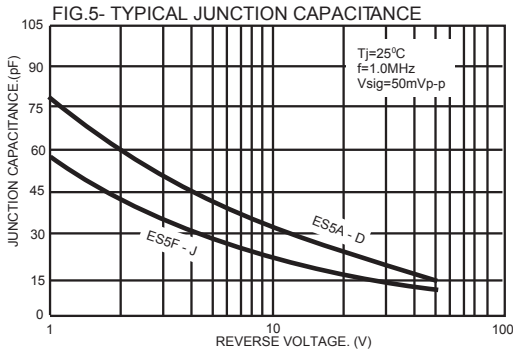
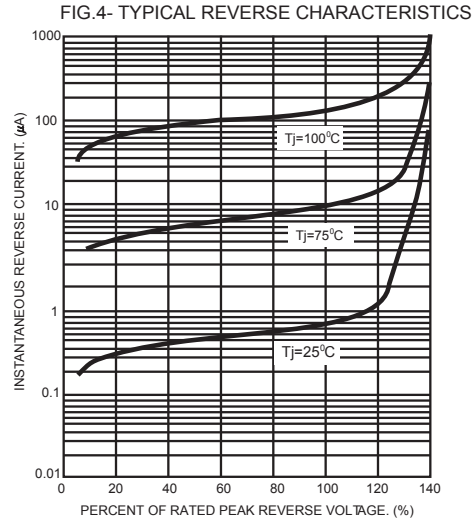
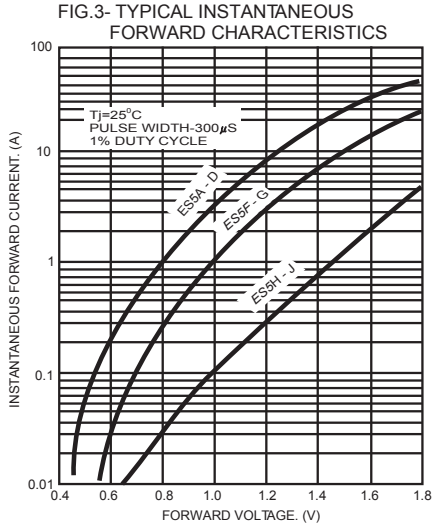
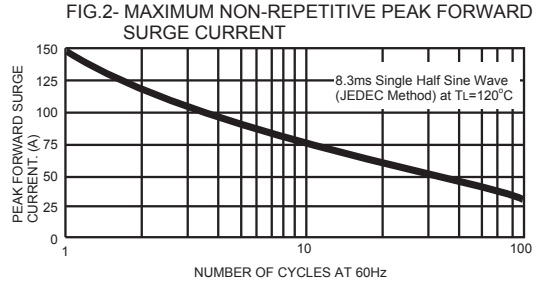
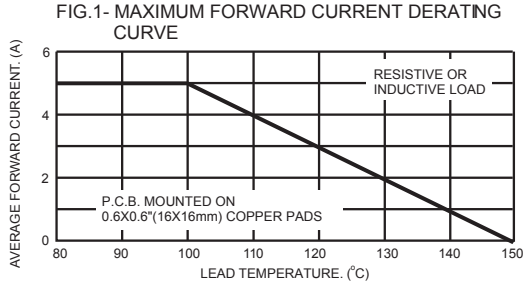
ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%

| Type Number   | Symbol          | ES 5A | ES 5B | ES 5C | ES 5D | ES 5F       | ES 5G | ES 5H | ES 5J | Units                       |
|---|-----------------|-------|-------|-------|-------|-------------|-------|-------|-------|-----------------------------|
| Maximum Recurrent Peak Reverse Voltage  | $V_{RRM}$       | 50    | 100   | 150   | 200   | 300         | 400   | 500   | 600   | V                           |
| Maximum RMS Voltage   | $V_{RMS}$       | 35    | 70    | 105   | 140   | 210         | 280   | 350   | 420   | V                           |
| Maximum DC Blocking Voltage   | $V_{DC}$        | 50    | 100   | 150   | 200   | 300         | 400   | 500   | 600   | V                           |
| Maximum Average Forward Rectified Current<br>See Fig. 1   | $I_{(AV)}$      | 5.0   |       |       |       |             |       |       |       | A                           |
| Peak Forward Surge Current, 8.3 ms Single<br>Half Sine-wave Superimposed on Rated<br>Load (JEDEC method ) @ $T_J = 100^\circ\text{C}$ | $I_{FSM}$       | 150   |       |       |       |             |       |       |       | A                           |
| Maximum Instantaneous Forward<br>Voltage @ 5.0A   | $V_F$           | 0.95  |       |       | 1.3   |             | 1.7   |       |       | V                           |
| Maximum DC Reverse Current @ $T_A = 25^\circ\text{C}$<br>at Rated DC Blocking Voltage @ $T_A = 100^\circ\text{C}$                     | $I_R$           |       |       |       |       | 10          |       |       |       | $\mu\text{A}$               |
|   |                 |       |       |       |       | 500         |       |       |       | $\mu\text{A}$               |
| Maximum Reverse Recovery Time ( Note 1 )  | $T_{rr}$        |       |       |       |       | 35          |       |       |       | nS                          |
| Typical Junction Capacitance ( Note 2 )   | $C_j$           | 45    |       |       | 30    |             |       |       |       | pF                          |
| Typical Thermal Resistance (Note 3)   | $R_{\theta JA}$ |       |       |       |       | 47          |       |       |       | $^\circ\text{C} / \text{W}$ |
|   | $R_{\theta JL}$ |       |       |       |       | 12          |       |       |       | $^\circ\text{C} / \text{W}$ |
| Operating 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 MHz and Applied  $V_R = 4.0$  Volts
  3. Units Mounted on P.C.B. with 0.6" x 0.6" (16mm x 16mm) Copper Pad Areas

# RATINGS AND CHARACTERISTIC CURVES ES5A THRU ES5J

## Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)



**FIG.7- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**

