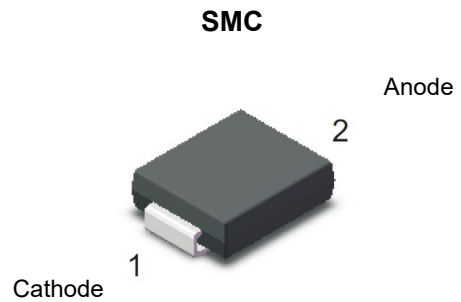


## Surface Mount Superfast Recovery Rectifier

**ES3AC-ES3JC**
**50 to 600V**
**3A**
**SMC**

### Features

- ◆ For surface mounted applications
- ◆ Low profile package
- ◆ Glass Passivated Chip Junction
- ◆ Superfast reverse recovery time
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives



### Mechanical Data

- ◆ Case : SMC.
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight : 0.22g / 0.0077oz

### Functional Diagram



### Absolute Maximum Ratings and Characteristics

Ratings 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%.

| Parameter                                                                          |                      | Symbol                               | ES3AC       | ES3BC | ES3CC | ES3DC | ES3EC | ES3GC | ES3JC | Unit |
|------------------------------------------------------------------------------------|----------------------|--------------------------------------|-------------|-------|-------|-------|-------|-------|-------|------|
| Maximum Repetitive Peak Reverse Voltage                                            |                      | V <sub>RRM</sub>                     | 50          | 100   | 150   | 200   | 300   | 400   | 600   | V    |
| Maximum RMS Voltage                                                                |                      | V <sub>RMS</sub>                     | 35          | 70    | 105   | 140   | 210   | 280   | 420   | V    |
| Maximum DC Blocking Voltage                                                        |                      | V <sub>DC</sub>                      | 50          | 100   | 150   | 200   | 300   | 400   | 600   | V    |
| Maximum Average Forward Rectified Current at T <sub>C</sub> =125℃                  |                      | I <sub>F(AV)</sub>                   | 3           |       |       |       |       |       |       | A    |
| Peak Forward Surge Current: 8.3ms Single Half Sine Wave Superimposed on Rated Load |                      | I <sub>FSM</sub>                     | 90          |       |       |       |       |       |       | A    |
| Maximum Forward Voltage at 3A                                                      |                      | V <sub>F</sub>                       | 1           |       |       |       | 1.25  |       | 1.68  | V    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                            | T <sub>a</sub> =25℃  | I <sub>R</sub>                       | 5           |       |       |       |       |       |       | μA   |
|                                                                                    | T <sub>a</sub> =125℃ |                                      | 100         |       |       |       |       |       |       |      |
| Typical junction capacitance at V <sub>R</sub> =4V, f=1MHz                         |                      | C <sub>J</sub>                       | 40          |       |       |       |       |       |       | pF   |
| Maximum Reverse Recovery Time <sup>(1)</sup>                                       |                      | t <sub>rr</sub>                      | 35          |       |       |       |       |       |       | ns   |
| Typical Thermal Resistance <sup>(2)</sup>                                          |                      | R <sub>θJA</sub><br>R <sub>θJC</sub> | 40<br>16    |       |       |       |       |       |       | ℃/W  |
| Operating and Storage Temperature Range                                            |                      | T <sub>J</sub> , T <sub>STG</sub>    | -55 to +150 |       |       |       |       |       |       | ℃    |

#### NOTES:

(1) Measured with  $I_F = 0.5 A$ ,  $I_R = 1 A$ ,  $I_{rr} = 0.25 A$ .

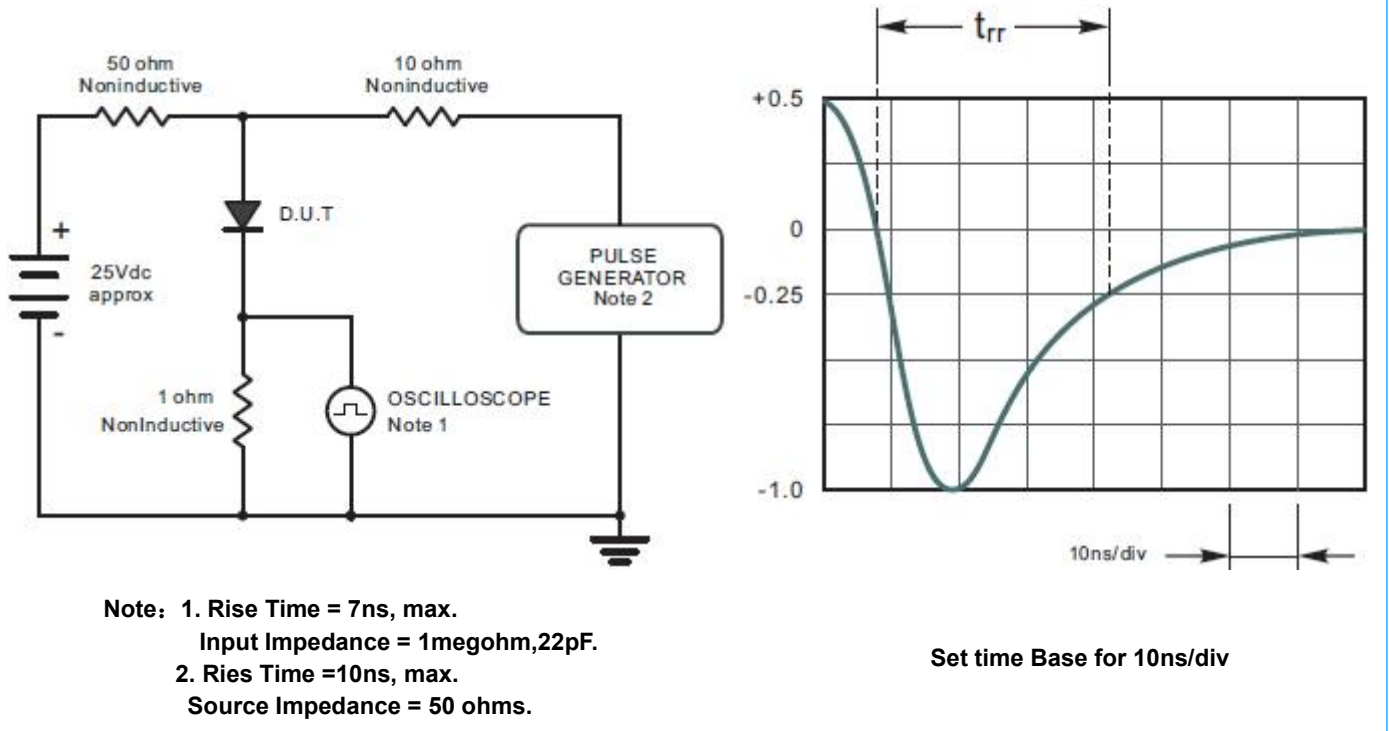
(2) P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.

## Surface Mount Superfast Recovery Rectifier

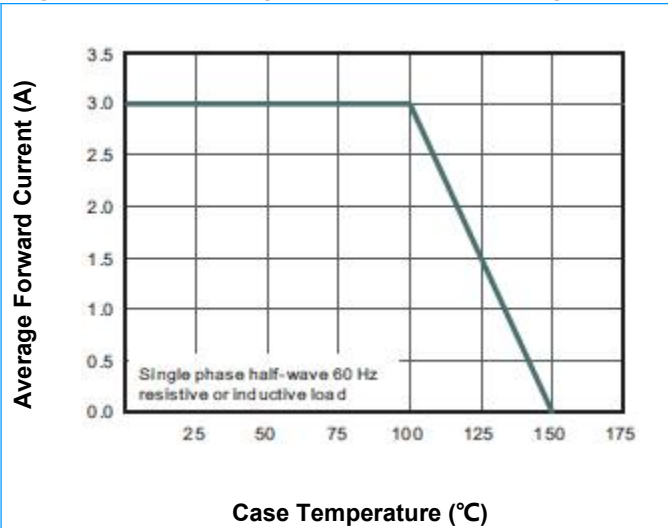
**ES3AC-ES3JC**
**50 to 600V**
**3A**
**SMC**

### Rating and Characteristic Curves

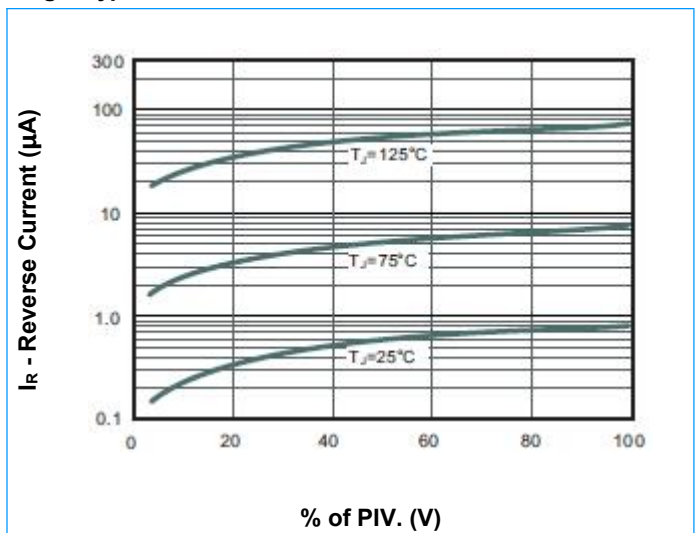
**Fig1. Reverse Recovery Time Characteristic And Test Circuit Diagram**



**Fig2. Maximum Average Forward Current Rating**



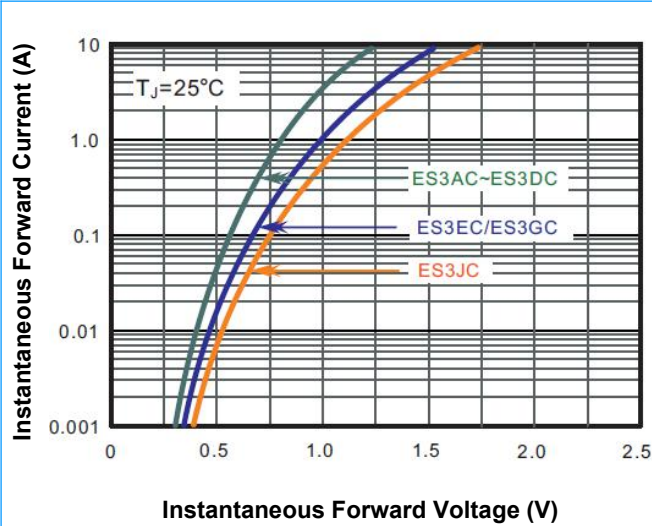
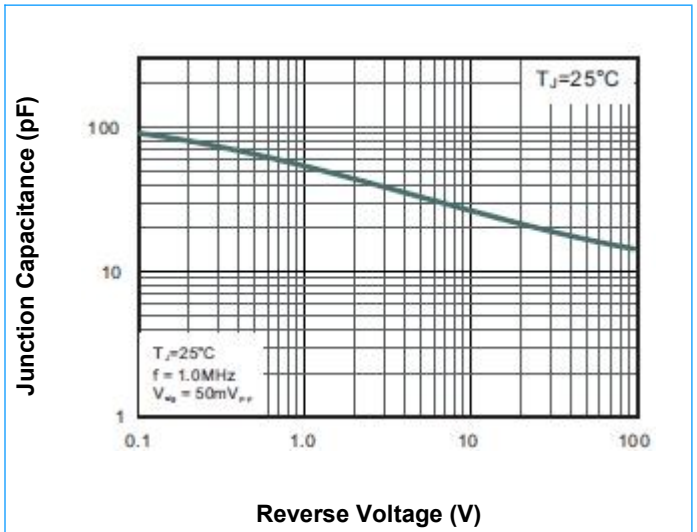
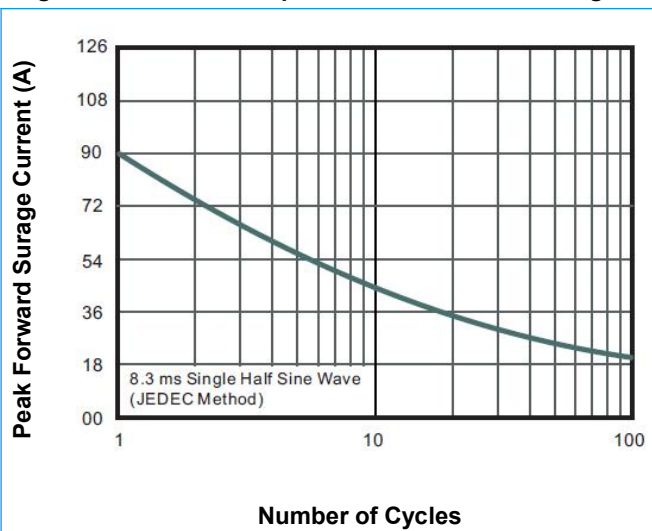
**Fig3. Typical Reverse Characteristics**



# Surface Mount Superfast Recovery Rectifier

**ES3AC-ES3JC**
**50 to 600V**
**3A**
**SMC**

## Rating and Characteristic Curves (Continue)

**Fig4. Typical Forward Characteristics**

**Fig5. Typical Junction Capacitance**

**Fig6. Maximum Non-Repetitive Peak Forward Surge Current**


## Surface Mount Superfast Recovery Rectifier

ES3AC-ES3JC

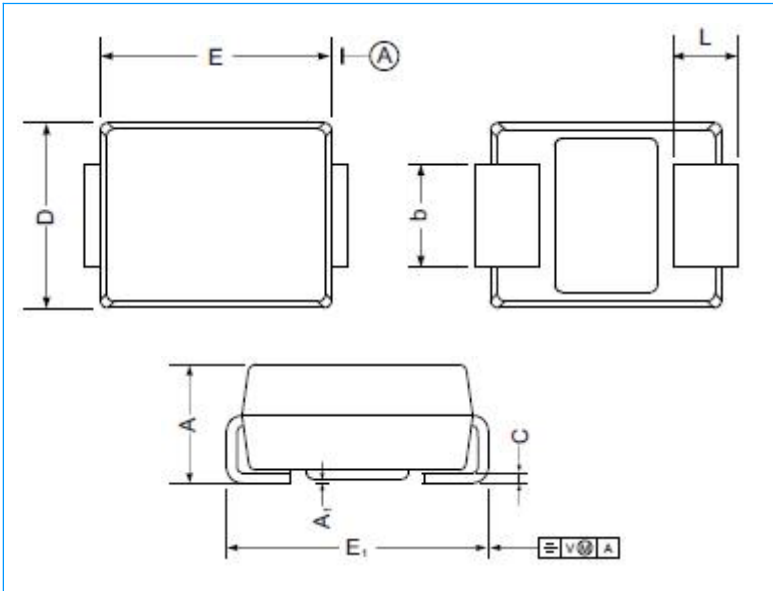
50 to 600V

3A

SMC

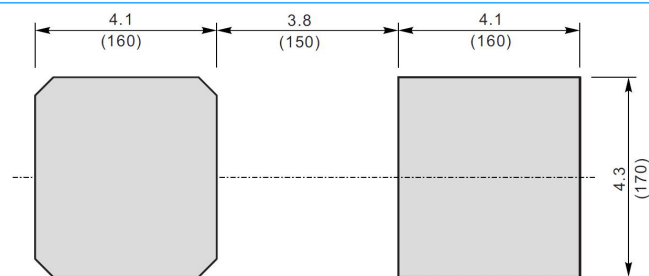
### SMC Package Outline

Plastic surface mounted package; 2 leads



| Symbol         | mm   |      | mil  |      |
|----------------|------|------|------|------|
|                | min. | max. | min. | max. |
| A              | 2.00 | 2.62 | 79   | 103  |
| E              | 6.5  | 7.0  | 256  | 276  |
| D              | 5.6  | 6.2  | 220  | 244  |
| E <sub>1</sub> | 7.6  | 8.0  | 299  | 315  |
| A <sub>1</sub> | 0.05 | 0.21 | 2.0  | 8.3  |
| L              | 0.9  | 1.6  | 35   | 63   |
| C              | 0.15 | 0.31 | 5.9  | 12   |
| b              | 2.75 | 3.25 | 108  | 128  |

### The Recommended Mounting Pad Size



Unit :  $\frac{\text{mm}}{(\text{mil})}$

### Marking

| Part Number | ES3AC | ES3BC | ES3CC | ES3DC | ES3EC | ES3GC | ES3JC |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| Marking     | ES3A  | ES3B  | ES3C  | ES3D  | ES3E  | ES3G  | ES3J  |

### Packaging Information

| Part Number | Component Package | Quantity |
|-------------|-------------------|----------|
| ES3AC-ES3JC | SMC               | 3000 PCS |