

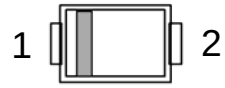
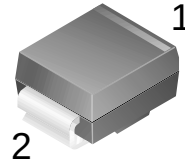


## ES3AB-ES3JB

### Features:

- ☐ For surface mounted applications
- ☐ Low profile package
- ☐ Glass Passivated Chip Junction
- ☐ Easy to pick and place
- ☐ Fast reverse recovery time
- ☐ Lead free in comply with EU RoHS 2011/65/EU directives

DO-214AA  
(SMB)



1. Cathode 2. Anode

### Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

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%.

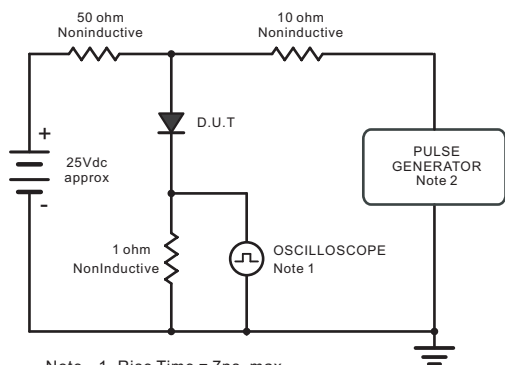
| Parameter                                                                                                   | Symbols                              | ES3AB      | ES3BB | ES3CB | ES3DB | ES3EB | ES3GB | ES3JB | Units |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------|------------|-------|-------|-------|-------|-------|-------|-------|
| 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> = 100 °C                                        | I <sub>F(AV)</sub>                   | 3          |       |       |       |       |       |       | A     |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load                          | I <sub>FSM</sub>                     | 90         |       |       |       |       |       |       | A     |
| Maximum Forward Voltage at 3 A                                                                              | V <sub>F</sub>                       | 1          |       |       |       | 1.25  |       | 1.68  | V     |
| Maximum DC Reverse Current at Rated DC Blocking Voltage<br>T <sub>a</sub> = 25 °C<br>T <sub>a</sub> =125 °C | I <sub>R</sub>                       | 5<br>100   |       |       |       |       |       |       | μA    |
| Typical Junction Capacitance at V <sub>R</sub> =4V, f=1MHz                                                  | C <sub>j</sub>                       | 45         |       |       |       |       |       |       | 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> | 50<br>16   |       |       |       |       |       |       | °C/W  |
| Operating and Storage Temperature Range                                                                     | T <sub>j</sub> , T <sub>stg</sub>    | -55 ~ +150 |       |       |       |       |       |       | °C    |

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

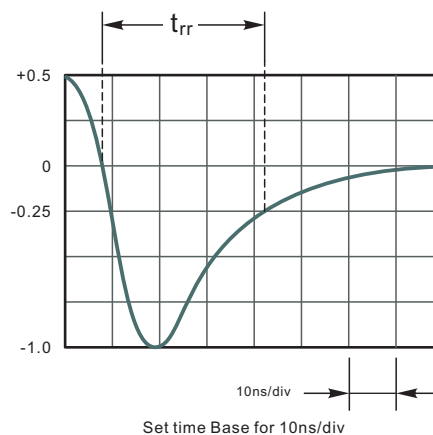
(2) P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.

## Typical Characteristics

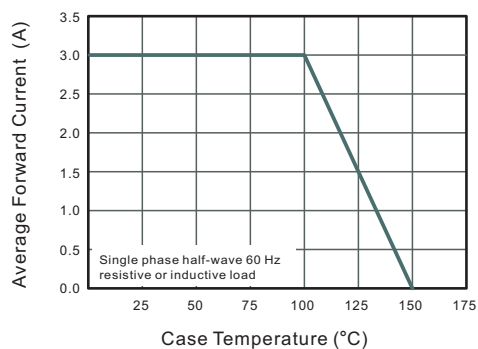
**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**



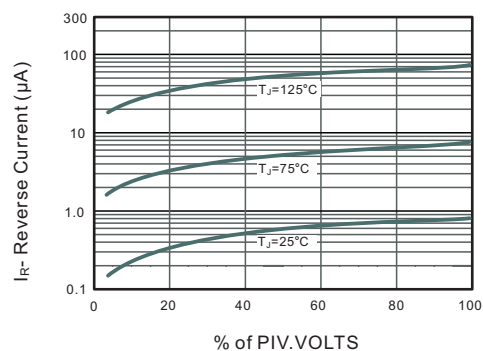
Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.



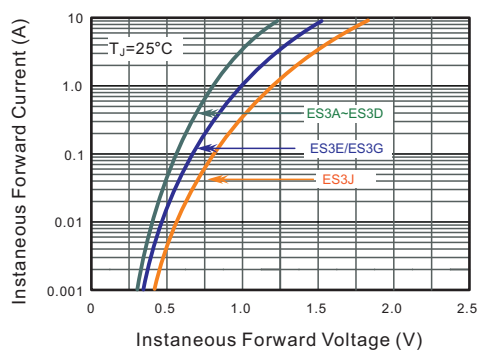
**Fig.2 Maximum Average Forward Current Rating**



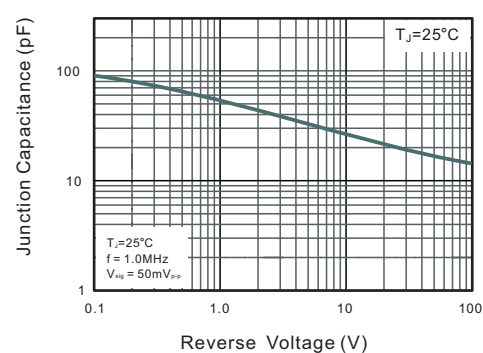
**Fig.3 Typical Reverse Characteristics**



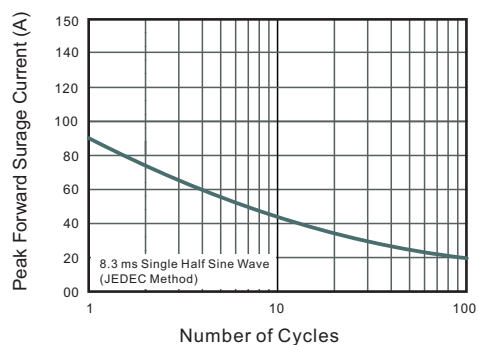
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Junction Capacitance**

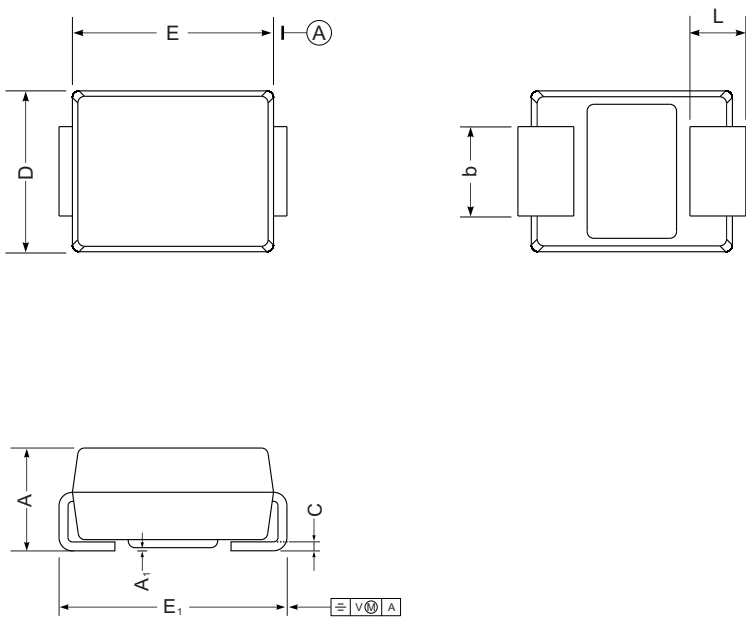


**Fig.6 Maximum Non-Repetitive Peak Forward Surge Current**



Package Dimension

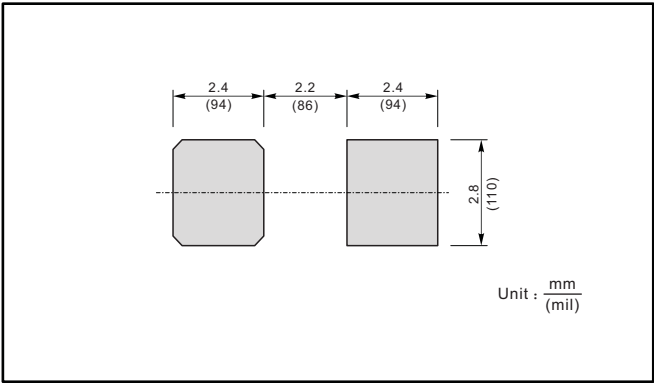
DO-214AA (SMB)



SMB mechanical data

| UNIT |     | A    | E    | D    | E <sub>1</sub> | A <sub>1</sub> | L   | C     | b   |
|------|-----|------|------|------|----------------|----------------|-----|-------|-----|
| mm   | max | 2.44 | 4.70 | 3.94 | 5.59           | 0.20           | 1.5 | 0.305 | 2.2 |
|      | min | 2.13 | 4.06 | 3.3  | 5.08           | 0.05           | 0.8 | 0.152 | 1.9 |
| mil  | max | 96   | 185  | 155  | 220            | 7.9            | 59  | 12    | 87  |
|      | min | 84   | 160  | 130  | 200            | 2.0            | 32  | 6     | 75  |

The recommended mounting pad size



Marking

| Type number | Marking code |
|-------------|--------------|
| ES3AB       | ES3A         |
| ES3BB       | ES3B         |
| ES3CB       | ES3C         |
| ES3DB       | ES3D         |
| ES3EB       | ES3E         |
| ES3GB       | ES3G         |
| ES3JB       | ES3J         |