



# ES2A-ES2J

## Surface Mount Superfast Rectifiers

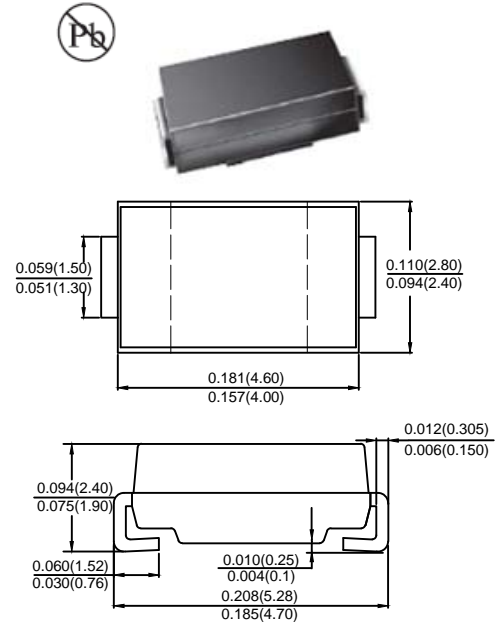
### Features

- Low profile space
- Ideal for automated placement
- Glass passivated chip junctions
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering:  
260°C/10 seconds at terminals
- Component in accordance to  
RoHS 2002/95/1 and WEEE 2002/96/EC

### Mechanical Date

- **Case:** JEDEC DO-214AC (SMA) molded plastic body over glass passivated chip
- **Terminals:** Solder plated, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** Laser band denotes cathode end

### SMA/DO-214AC



Dimensions in inches and (millimeters)

### Maximum Ratings & Thermal Characteristics

Rating at 25°C ambient temperature unless otherwise specified  
Single phase, half wave, 60Hz, resistive or inductive load  
For capacitive load derate current by 20%

| Type Number  | SYMBOL          | ES2A        | ES2B | ES2D | ES2G | ES2J | Unit                 |
|--|-----------------|-------------|------|------|------|------|----------------------|
| Maximum Recurrent Peak Reverse Voltage   | $V_{RRM}$       | 50          | 100  | 200  | 400  | 600  | V                    |
| Maximum RMS Voltage  | $V_{RMS}$       | 35          | 70   | 140  | 280  | 420  | V                    |
| Maximum DC Blocking Voltage  | $V_{DC}$        | 50          | 100  | 200  | 400  | 600  | V                    |
| Average Rectified Output Current<br>@ $T_L = 100^\circ\text{C}$                                  | IF(AV)          | 2.0         |      |      |      |      | A                    |
| Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$       | 50          |      |      |      |      | A                    |
| Rating for fusing ( $t < 8.3\text{ms}$ )   | $I^2t$          | 14.94       |      |      |      |      | $\text{A}^2\text{s}$ |
| Forward Voltage @IF=2.0A   | $V_{FM}$        | 1.0         |      | 1.25 |      | 1.65 | V                    |
| Peak Reverse Current @ $T_A = 25^\circ\text{C}$  | $I_R$           | 5.0         |      |      |      |      | uA                   |
| At Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$   |                 | 200         |      |      |      |      |                      |
| Maximum Reverse Recovery Time (Note 1)   | $T_{rr}$        | 35          |      |      |      |      | ns                   |
| Typical Junction Capacitance (Note 2)  | $C_J$           | 40          |      |      |      |      | pF                   |
| Typical Thermal Resistance Junction to Ambient (Note 3)  | $R_{\theta JA}$ | 60          |      |      |      |      | $^\circ\text{C/W}$   |
| Operating Temperature Range  | $T_J$           | -55 to +150 |      |      |      |      | $^\circ\text{C}$     |
| Storage Temperature Range  | $T_{STG}$       | -55 to +150 |      |      |      |      | $^\circ\text{C}$     |

Note: 1. Reverse Recovery Test Conditions: IF=0.5A, IR=1.0A, IRR=0.25A.  
2. Measured at 1.0 MHz and Applied reverse Voltage of 4.0V D.C  
3. 8.0MM<sup>2</sup> (.013mm Thick) Land Areas.



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

Fig.1 Maximum Average Forward Current Rating

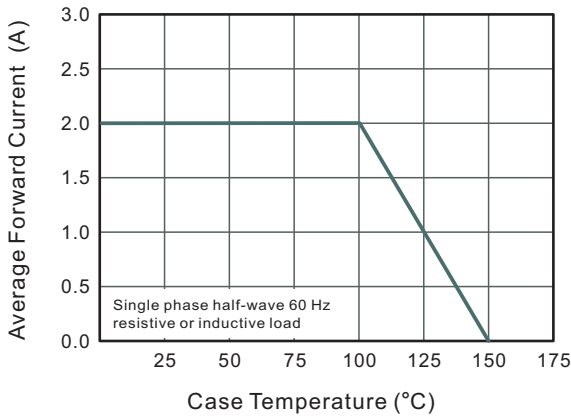


Fig.2 Typical Reverse Characteristics

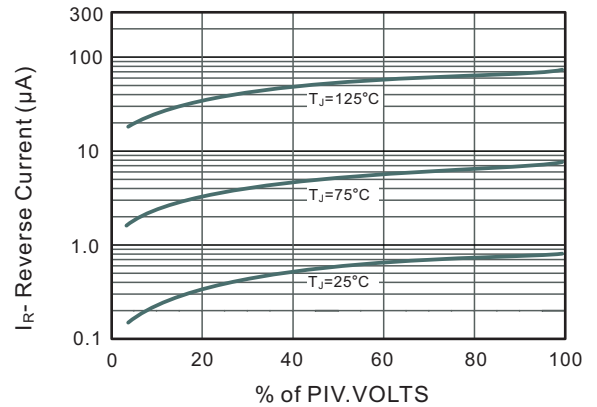


Fig.3 Typical Forward Characteristics

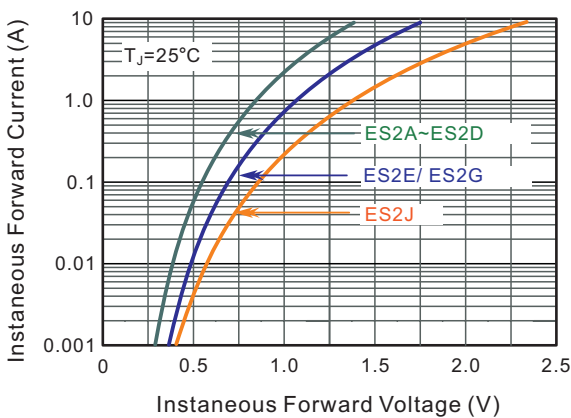


Fig.4 Typical Junction Capacitance

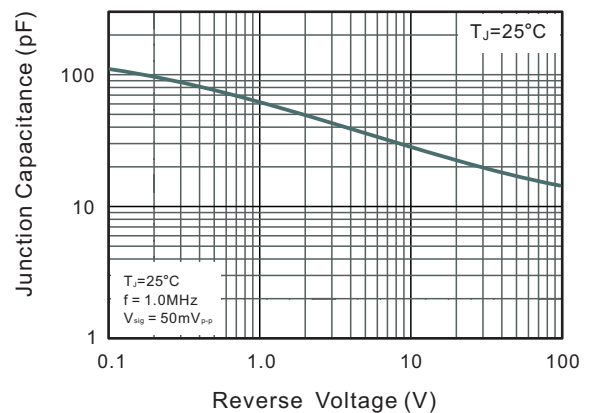
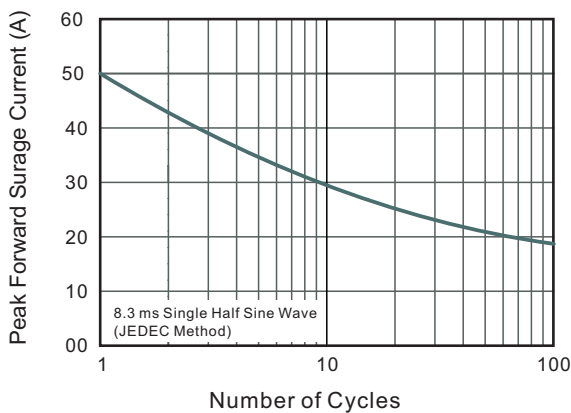
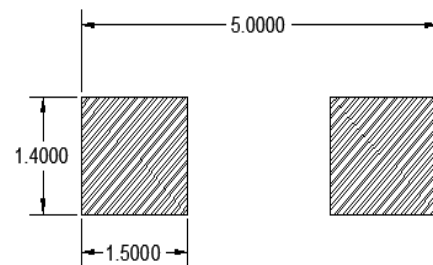


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



SMA PAD LAYOUT



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