

## Super-Fast Recovery Rectifier

## TES2AA - TES2DA

### Features

- Low forward voltage drop
- High forward surge current capability
- Low-profile SMD ideal for automated manufacturing
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards



### Mechanical Data

- Case: SMA molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated; solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end

### Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

| Parameter                                                  | Symbol            | TES2AA | TES2BA | TES2CA | TES2DA | Unit |
|------------------------------------------------------------|-------------------|--------|--------|--------|--------|------|
| Peak Repetitive Reverse Voltage                            | V <sub>RRM</sub>  | 50     | 100    | 150    | 200    | V    |
| RMS Reverse Voltage                                        | V <sub>RMS</sub>  | 35     | 70     | 105    | 140    | V    |
| DC Blocking Voltage                                        | V <sub>DC</sub>   | 50     | 100    | 150    | 200    | V    |
| Maximum Average Forward Output Current                     | I <sub>F_AV</sub> | 2.0    |        |        |        | A    |
| Peak Forward Surge Current,<br>8.3ms Single Half Sine wave | I <sub>FSM</sub>  | 50     |        |        |        | A    |

### Thermal Characteristics

| Parameter                            | Symbol           | TES2AA     | TES2BA | TES2CA | TES2DA | Unit |
|--------------------------------------|------------------|------------|--------|--------|--------|------|
| Typical Thermal Resistance *1        | R <sub>θJA</sub> | 70         |        |        |        | °C/W |
|                                      | R <sub>θJC</sub> | 25         |        |        |        |      |
|                                      | R <sub>θJL</sub> | 30         |        |        |        |      |
| Operating Junction Temperature Range | T <sub>J</sub>   | -55 ~ +150 |        |        |        | °C   |
| Storage Temperature Range            | T <sub>STG</sub> | -55 ~ +150 |        |        |        | °C   |

Note \*1: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1mm copper pad area

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## TES2AA - TES2DA

### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

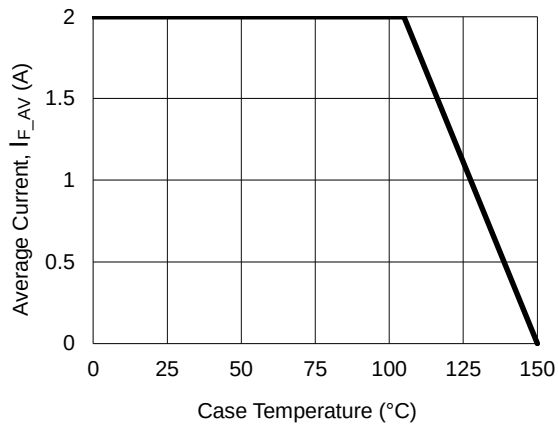
| Parameter                             | Symbol   | Test Condition                                                              |                             | Typ. | Max.  | Unit          |
|---------------------------------------|----------|-----------------------------------------------------------------------------|-----------------------------|------|-------|---------------|
| Maximum Instantaneous Forward Voltage | $V_F$    | $I_F = 2.0\text{A}$                                                         |                             | -    | 0.95  | V             |
| Maximum Reverse Current               | $I_R$    | Rated<br>$V_R$                                                              | @ $T_A = 25^\circ\text{C}$  | -    | 5.0   | $\mu\text{A}$ |
|                                       |          |                                                                             | @ $T_A = 125^\circ\text{C}$ | -    | 100.0 |               |
| Maximum Reverse Recovery Time         | $t_{rr}$ | $I_F = 0.5\text{A}$ , $I_{RM} = 1\text{A}$ ,<br>$I_{R(REC)} = 0.25\text{A}$ |                             | -    | 35.0  | ns            |

# Super-Fast Recovery Rectifier

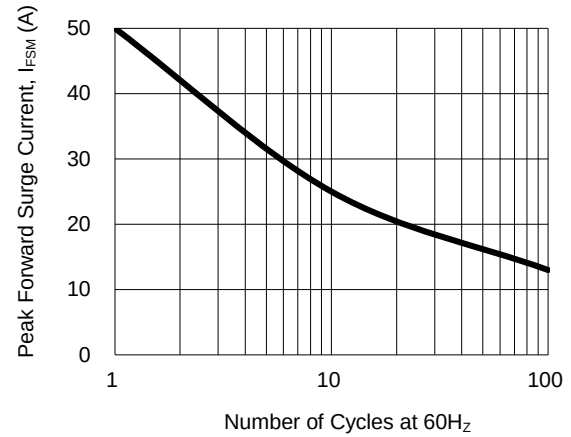
## TES2AA - TES2DA

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

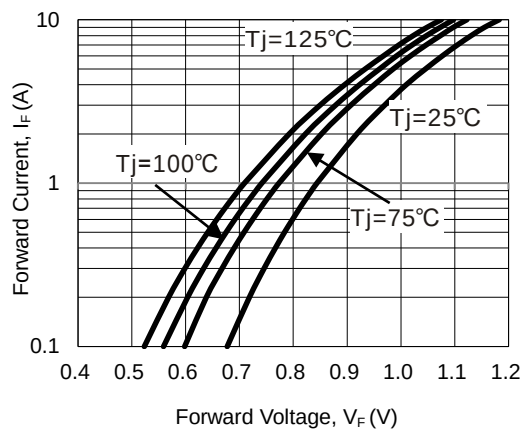
**Fig.1 Forward Current Derating Curve**



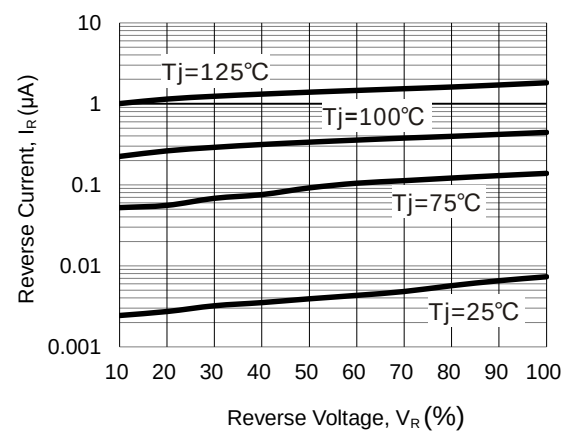
**Fig.2 Surge Current Derating Curve**



**Fig.3 Typical Forward Voltage Characteristics**



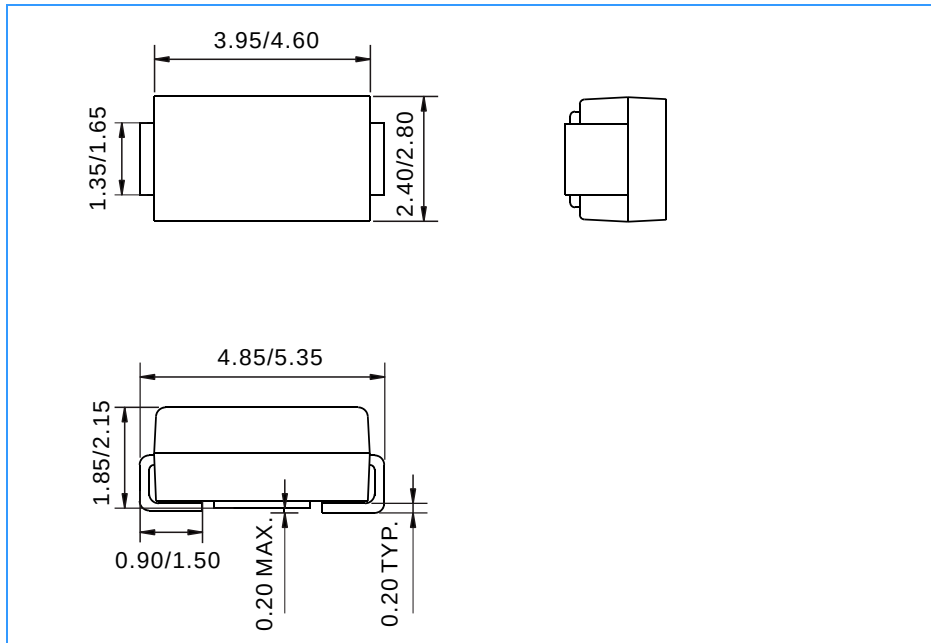
**Fig.4 Typical Reverse Characteristics**



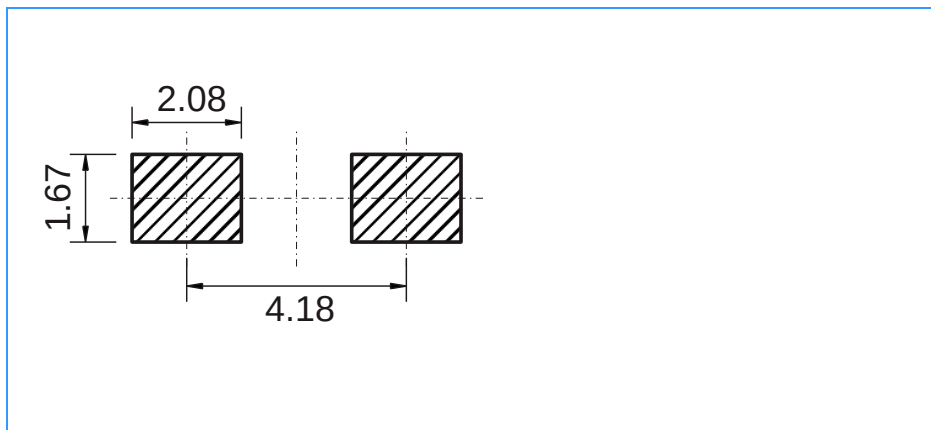
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### Package Outline Dimensions (Unit: mm)



### Mounting Pad Layout (Unit: mm)



### Ordering Information

| Part Number | Marking | Package | Shipping Quantity  |
|-------------|---------|---------|--------------------|
| TES2AA      | ES2AA   | SMA     | 5000 / Tape & Reel |
| TES2BA      | ES2BA   | SMA     | 5000 / Tape & Reel |
| TES2CA      | ES2CA   | SMA     | 5000 / Tape & Reel |
| TES2DA      | ES2DA   | SMA     | 5000 / Tape & Reel |