

SuperPlanar™ Bridge Rectifiers

TDF10J--TDF10K

Features

- Planar passivated chips
- Ultra low leakage reverse current
- High temperature performance
- High surge current capability
- RoHS Compliant



Mechanical Data

- Low profile saves space on printed circuit boards
- Molding compound, UL flammability classification rating 94V-0
- Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: As marked on body

Maximum Ratings (@T_A = 25°C unless otherwise specified)

| Characteristic | | Symbol | TDF10J | TDF10K | Units |
|--|------------------------|--------------------|--------|--------|------------------|
| Peak repetitive reverse voltage | | V _{RRM} | 600 | 800 | V |
| RMS reverse voltage | | V _{RMS} | 420 | 560 | V |
| DC blocking voltage | | V _{DC} | 600 | 800 | V |
| Maximum average forward output current | | I _{F(AV)} | 1.0 | | A |
| Peak forward surge current, 8.3ms single half-sine-wave | @T _J = 25°C | I _{FSM} | 45 | | A |
| I ² t Rating for fusing | @T _J = 25°C | I ² t | 8.4 | | A ² s |

Thermal Characteristics

| Parameter | Symbol | TDF10J | TDF10K | Units |
|--|------------------|------------------|--------|-------|
| Typical thermal resistance per leg (Note 1) | R _{θJA} | 50 | | °C/W |
| | R _{θJC} | 10 | | |
| Operating junction temperature range | T _J | - 55 ----- + 150 | | °C |
| Storage temperature range | T _{STG} | - 55 ----- + 150 | | °C |

Note:

1. Device mounted on PCB with 10 mm x 20 mm x 0.1mm copper pad areas

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Electrical Characteristics (@T_A = 25°C unless otherwise specified)

| Parameter | Symbol | Test conditions | Typ. | Max. | Units | |
|---------------------------------------|----------------|-------------------------------------|------------------------|------|-------|-----|
| Maximum instantaneous forward voltage | V _F | I _F =0.5A Per Diode | 0.92 | 0.95 | V | |
| | | I _F =1.0A Per Diode | -- | 1 | | |
| Maximum Reverse current | I _R | Rated V _R , Per Diode | @T _A =25°C | -- | 0.5 | μ A |
| | | | @T _A =150°C | -- | 40 | |

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

Fig.1-Forward Current Derating Curve

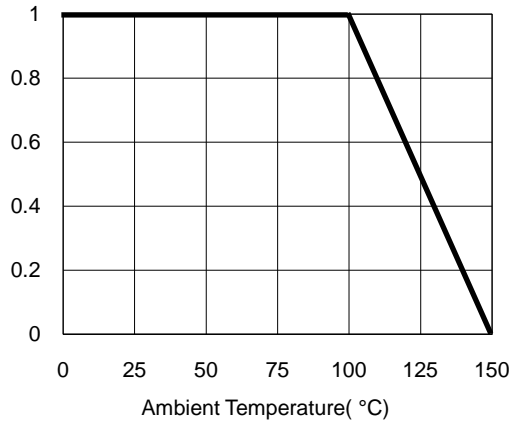


Fig.2- Surge Current Derating Curve

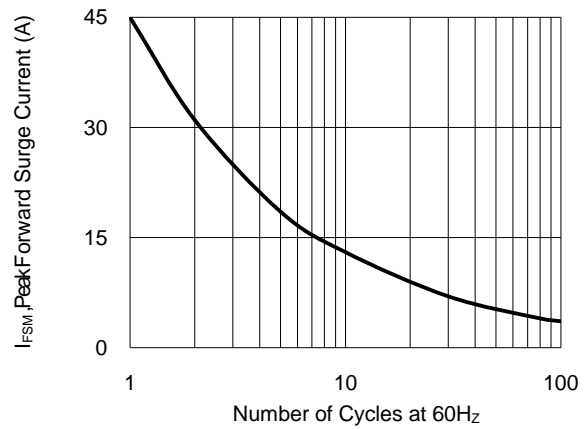


Fig.3- Typical Forward Voltage Characteristic

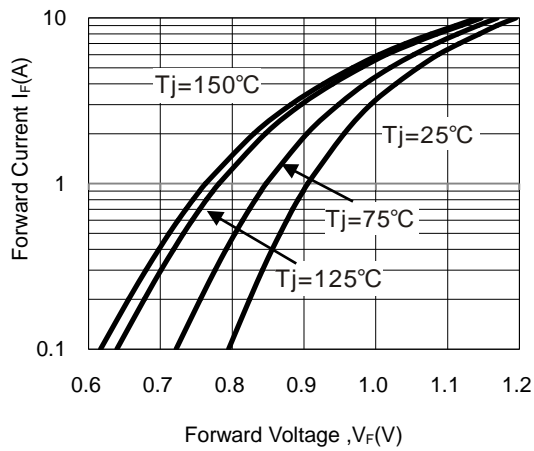
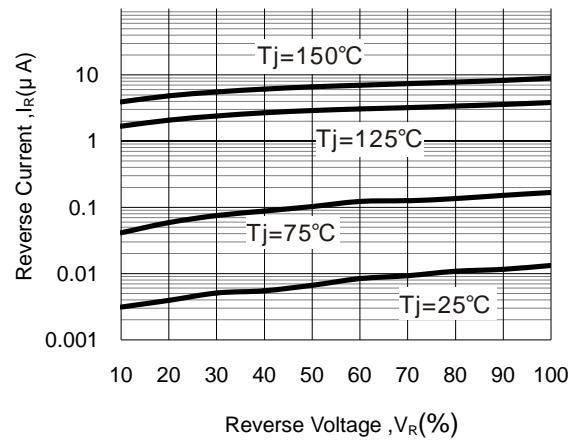


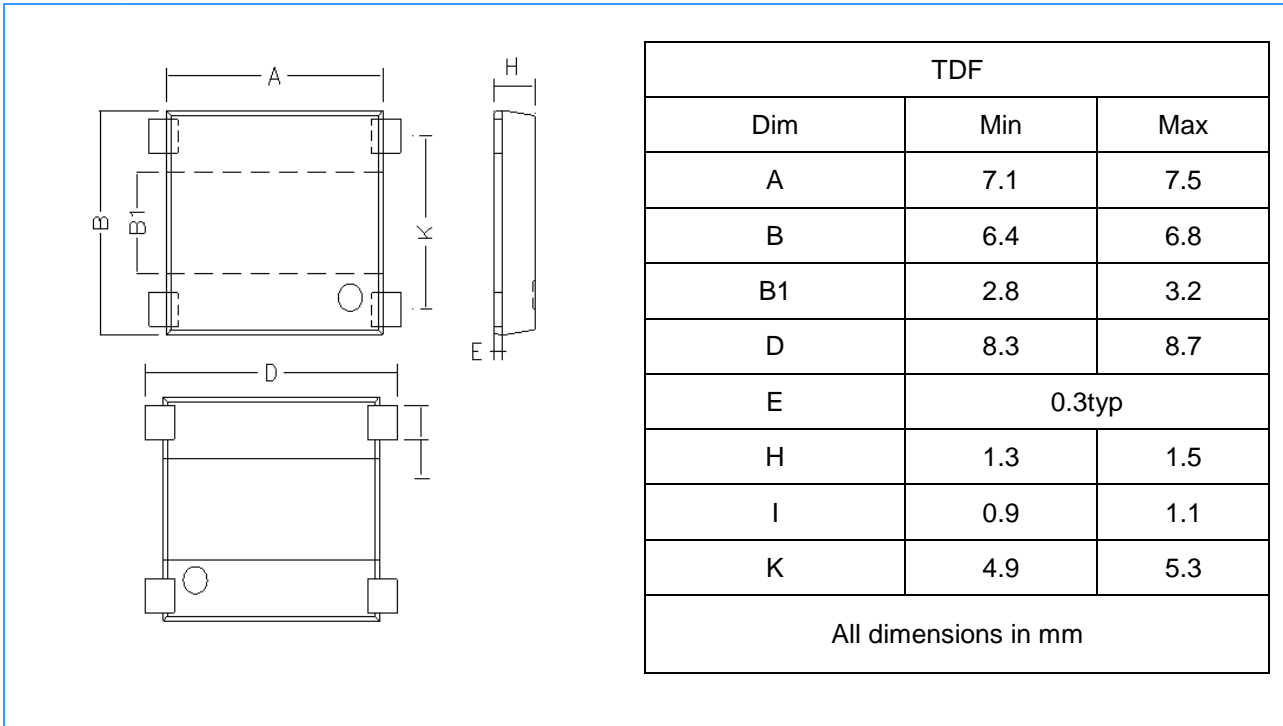
Fig.4- Typical Reverse Characteristic



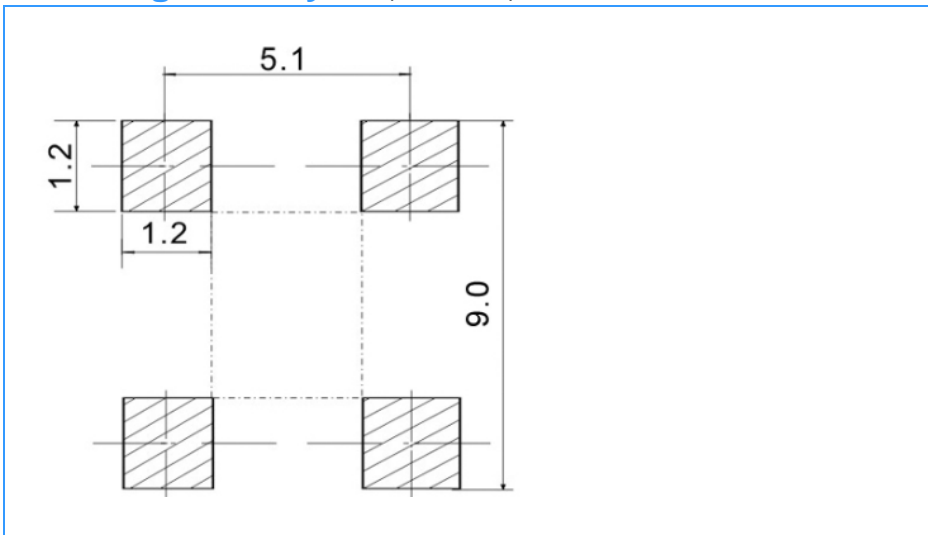
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Package Outline Dimensions(unit:mm)



Mounting Pad Layout(unit:mm)



Ordering Information

| Part No. | Marking | Package | Shipping |
|----------|---------|---------|----------------|
| TDF10J | TDF10J | TDF | 3000/Tape&Reel |
| TDF10K | TDF10K | TDF | 3000/Tape&Reel |