

Pb Free Plating Product

TSF2020CTG/TSF2040CTG/TSF2060CTG



20.0 Ampere Heatsink Common Cathode Super Fast Recovery Rectifiers

**Features**

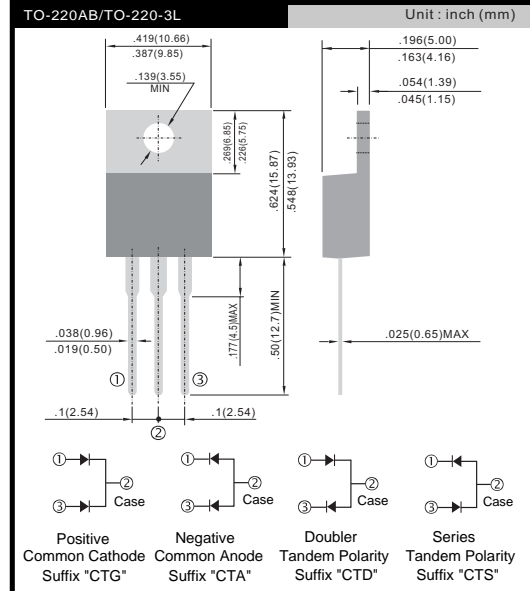
- \* ThinkiSemi mature FRD process
- \* Low forward voltage drop
- \* High current capability
- \* Low reverse leakage current
- \* High surge current capability

**Application**

- \* Automotive Inverters and Solar Inverters
- \* Plating Power Supply, SMPS and UPS
- \* Car Audio Amplifiers and Sound Device Systems

**Mechanical Data**

- \* Case: Heatsink TO-220AB open metal package
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Terminals: Solderable per MIL-STD-202 method 208
- \* Polarity: As marked on diode body
- \* Mounting position: Any
- \* Weight: 2.2 gram approximately



**MAXIMUM RATINGS AND ELECTRICAL 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%.

|   | SYMBOL   | TSF2020CTG   | TSF2040CTG | TSF2060CTG | UNIT     |
|---|----------|--------------|------------|------------|----------|
| Maximum Recurrent Peak Reverse Voltage  | VRRM     | 200          | 400        | 600        | V        |
| Maximum RMS Voltage   | VRMS     | 140          | 280        | 420        | V        |
| Maximum DC Blocking Voltage   | VDC      | 200          | 400        | 600        | V        |
| Maximum Average Forward Rectified Current Tc=125 °C (Total Device 2x10A=20A)                      | IF(AV)   | 20.0         |            |            | A        |
| Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method) | IFSM     | 200          |            |            | A        |
| Maximum Instantaneous Forward Voltage @ 10.0 A (Per Diode/Per Leg)                                | VF       | 0.98         | 1.3        | 1.7        | V        |
| Maximum DC Reverse Current @Tj=25 °C At Rated DC Blocking Voltage @Tj=125 °C                      | IR       | 5.0<br>100   |            |            | µA<br>µA |
| Maximum Reverse Recovery Time (Note 1)  | Trr      | 35           |            |            | nS       |
| Typical junction Capacitance (Note 2)   | CJ       | 120          | 70         |            | pF       |
| Typical Thermal Resistance (Note 3)   | RθJC     | 2.0          |            |            | °C/W     |
| Operating Junction and Storage Temperature Range  | TJ, TSTG | -55 to + 150 |            |            | °C       |

NOTES : (1) Reverse recovery test conditions IF = 0.5A, R = 1.0A, Irr = 0.25A.  
 (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.  
 (3) Thermal Resistance junction to case.

FIG.1 - FORWARD CURRENT DERATING CURVE

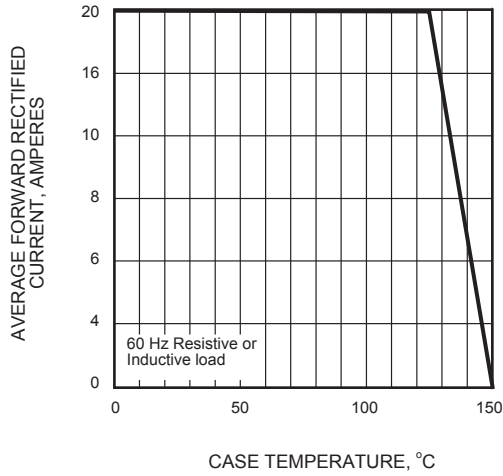


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

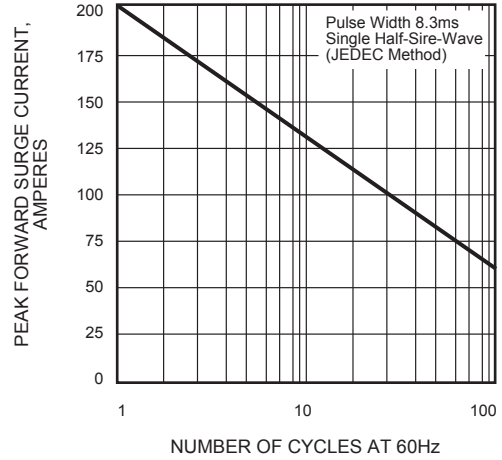


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

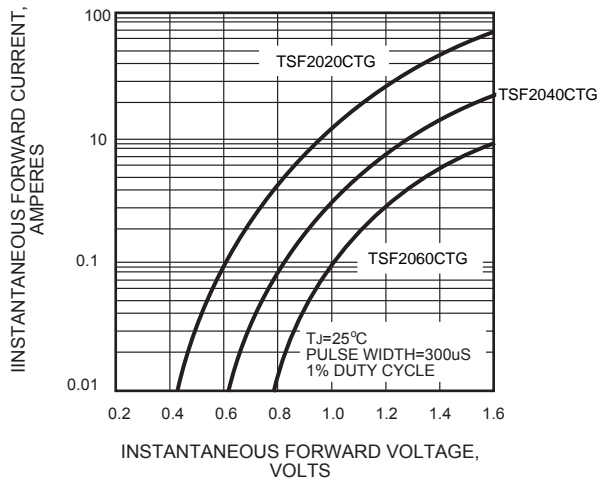


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

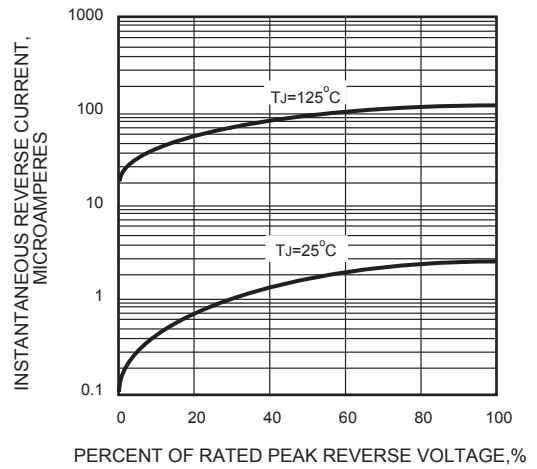


FIG.5 - TYPICAL JUNCTION CAPACITANCE

