

## Pb Free Plating Product

## TUR2020CTU thru TUR20120CTU



## 20.0 Ampere Heatsink Dual Common Cathode Ultra Fast Recovery Rectifiers

| Features                                                                                                                                                                                                                                                      | TO-220AB/TO-220-3L                                                                             | Unit:inch(mm) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------|
| ※ ThinkSemi latest&matured process FRD/FRED<br>※ Low forward voltage drop<br>※ High current capability<br>※ Low reverse leakage current<br>※ High surge current capability                                                                                    | <p>Internal Configuration</p> <p>① → ② → Case<br/>③ → Positive Common Cathode Suffix "CTU"</p> |               |
| Application                                                                                                                                                                                                                                                   |                                                                                                |               |
| ※ Automotive Inverters and Solar Inverters<br>※ Car Audio Amplifiers and Sound Device Systems<br>※ Plating Power Supply, Motor Control, UPS and SMPS etc.                                                                                                     |                                                                                                |               |
| Mechanical Data                                                                                                                                                                                                                                               |                                                                                                |               |
| ※ Case: Heatsink open metal TO-220AB/TO-220-3L package<br>※ Epoxy: UL 94V-0 rate flame retardant<br>※ Terminals: Solderable per MIL-STD-202 method 208<br>※ Polarity: As marked on diode body<br>※ Mounting position: Any<br>※ Weight: 2.0 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%.

| PARAMETER                                                                                                            | SYMBOL          | TUR2020CTU  | TUR2040CTU | TUR2060CTU | TUR2080CTU | TUR20100CTU | TUR20120CTU | UNIT |
|----------------------------------------------------------------------------------------------------------------------|-----------------|-------------|------------|------------|------------|-------------|-------------|------|
| Maximum Recurrent Peak Reverse Voltage                                                                               | VRRM            | 200         | 400        | 600        | 800        | 1000        | 1200        | V    |
| Maximum RMS Voltage                                                                                                  | VRMS            | 140         | 280        | 420        | 560        | 700         | 840         | V    |
| Maximum DC Blocking Voltage                                                                                          | VDC             | 200         | 400        | 600        | 800        | 1000        | 1200        | V    |
| Maximum Average Forward Rectified Current TC=125℃<br>(Total Device 2x10.0A=20.0A)                                    | IF(AV)          | 20.0        |            |            |            |             |             | A    |
| Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)(Per Diode/Per Leg) | IFSM            | 200         |            |            |            |             |             | A    |
| Maximum Instantaneous Forward Voltage @10.0A(Per Diode/Per Leg)                                                      | VF<br>(Typical) | 0.85-0.95   | 1.00-1.25  | 1.25-1.50  | 1.50-1.70  |             |             | V    |
| Maximum DC Reverse Current @TJ=25℃<br>At Rated DC Blocking Voltage @TJ=125℃                                          | IR              | 1.0<br>100  |            |            |            | μA<br>μA    |             |      |
| Maximum Reverse Recovery Time (Note1)                                                                                | Trr             | 15-25       |            |            | 25-35      |             |             | nS   |
| Typical Junction Capacitance (Note 2)                                                                                | CJ              | 100         |            |            |            |             |             | pF   |
| Typical Thermal Resistance (Note 3)                                                                                  | RθJC            | 1.5         |            |            |            |             |             | ℃/W  |
| Operating Junction and Storage Temperature Range                                                                     | TJ,TSTG         | -55 to +175 |            |            |            |             |             | ℃    |

Note:(1)Reverse recovery test conditions IF = 0.5A, IR = 1.0A, Irr = 0.25A.

Note:(2)Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.

Note:(3)Thermal Resistance junction to case.

FIG.1 - FORWARD CURRENT DERATING CURVE

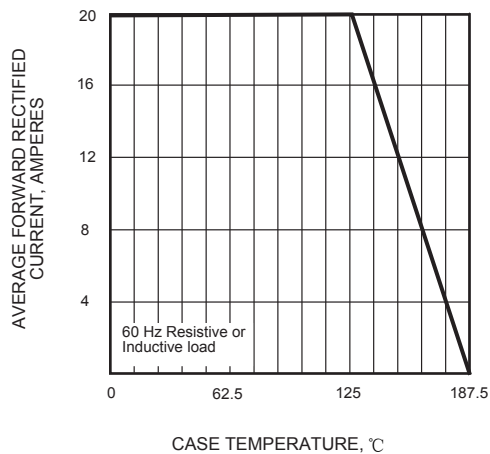


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

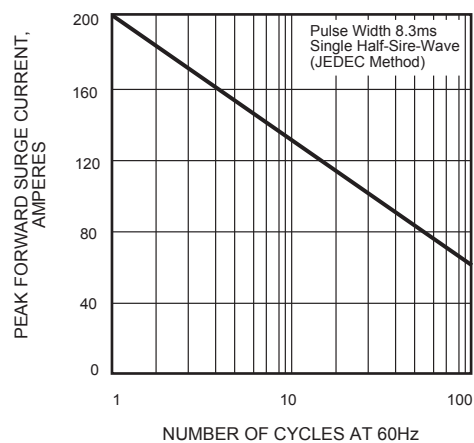


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

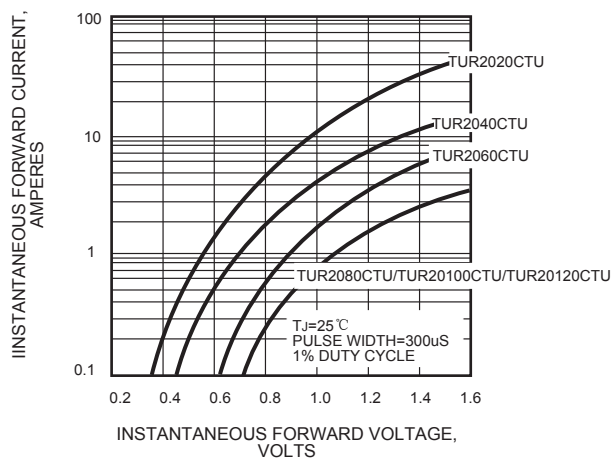


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

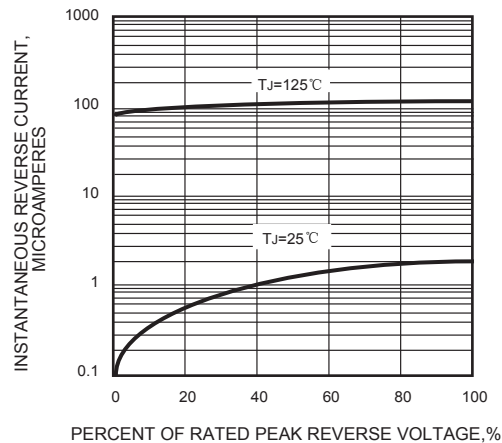


FIG.5 - TYPICAL JUNCTION CAPACITANCE

