

Pb Free Plating Product

## TURB3020CTG thru TURB30120CTG



30.0 Ampere Surface Mount Dual Common Cathode Ultra Fast Recovery Rectifiers

| Features                                                                                                                                                                                                                                            | TO-263AB/D2PAK 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                                                                          |                              |
| 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: Surface Mount TO-263AB/D2PAK 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          | TURB3020CTG | TURB3040CTG | TURB3060CTG | TURB3080CTG | TURB30100CTG | TURB30120CTG | 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 2x15.0A=30.0A)                                    | IF(AV)          | 30.0        |             |             |             |              |              | A    |
| Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)(Per Diode/Per Leg) | IFSM            | 300         |             |             |             |              |              | A    |
| Maximum Instantaneous Forward Voltage @15.0A(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             | 25-50       |             |             | 50-75       |              |              | nS   |
| Typical Junction Capacitance (Note 2)                                                                                | CJ              | 150         |             |             |             |              |              | 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

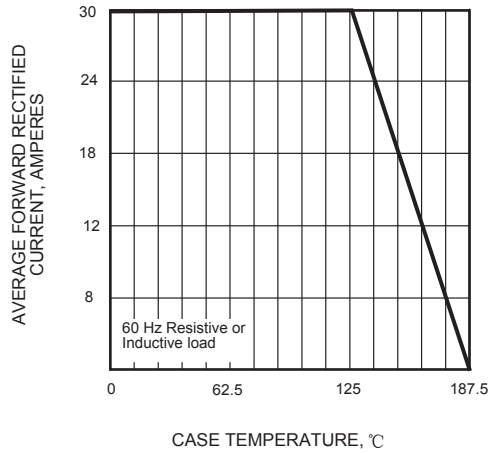


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

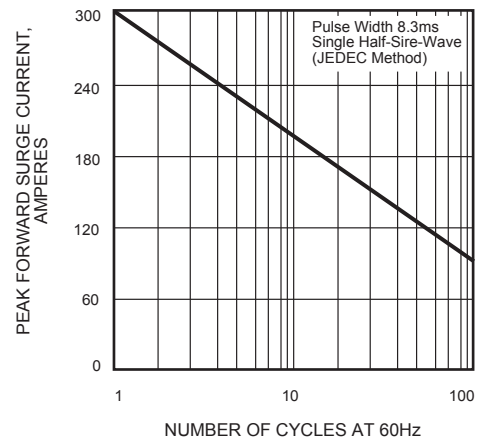


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

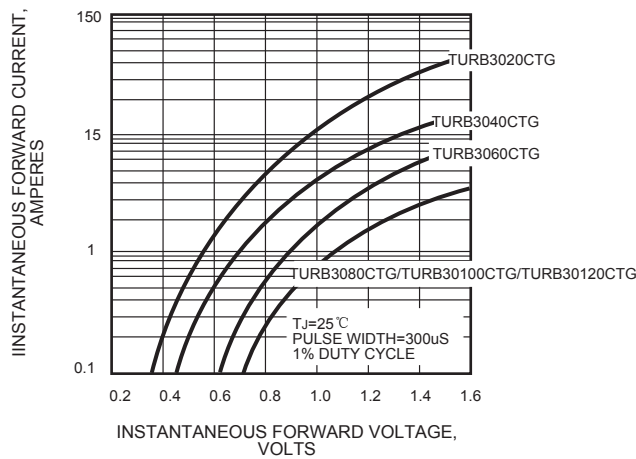


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

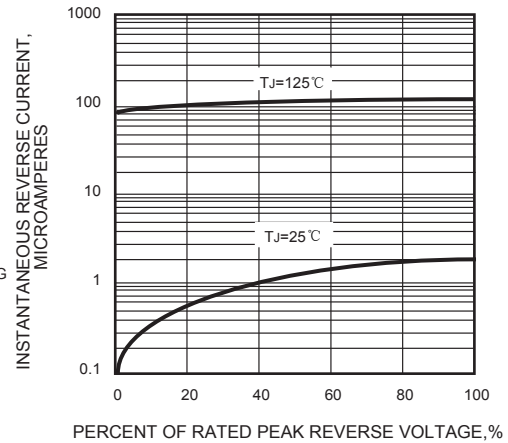


FIG.5 - TYPICAL JUNCTION CAPACITANCE

