

Pb Free Plating Product

## TURF1520U thru TURF15120U



15.0 Ampere Insulated Single Positive Type Ultra Fast Recovery Rectifier Diode

| Features                                                                                                                                                                                                                                                           | ITO-220AC/TO-220F-2L 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>Positive Type<br/>Suffix "U"</p> <p>Negative Type<br/>Suffix "UR"</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: Isolated fully plastic ITO-220AC/TO-220F-2L 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: 1.9 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       | TURF1520U   | TURF1540U | TURF1560U | TURF1580U | TURF15100U | TURF15120U | 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℃ (Total Device 15.0A)                                               | IF(AV)       | 15.0        |           |           |           |            |            | 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)                                                              | VF (Typical) | 0.85-0.95   | 1.00-1.25 | 1.25-1.50 | 1.50-1.70 |            |            | V    |          |
| Maximum DC Reverse Current @TJ=25℃ 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           | 150         |           |           |           |            |            |      | pF       |
| Typical Thermal Resistance (Note 3)                                                                                  | RθJC         | 3.0         |           |           |           |            |            | ℃/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

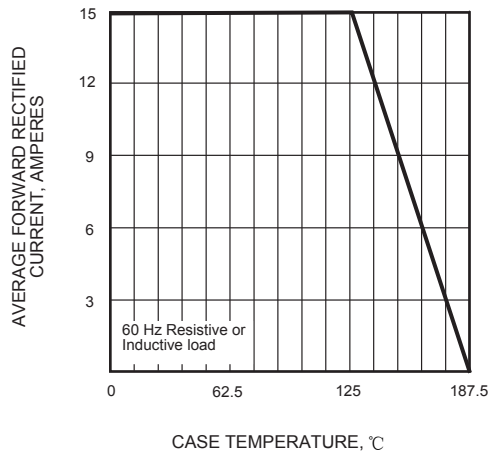


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

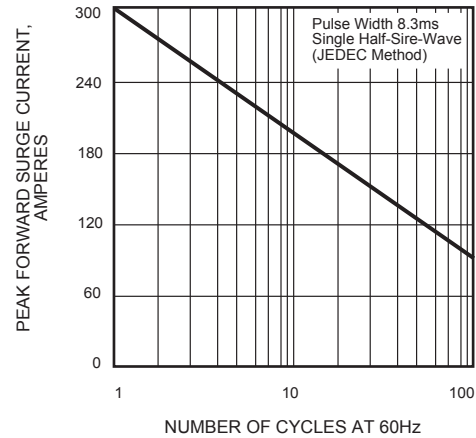


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

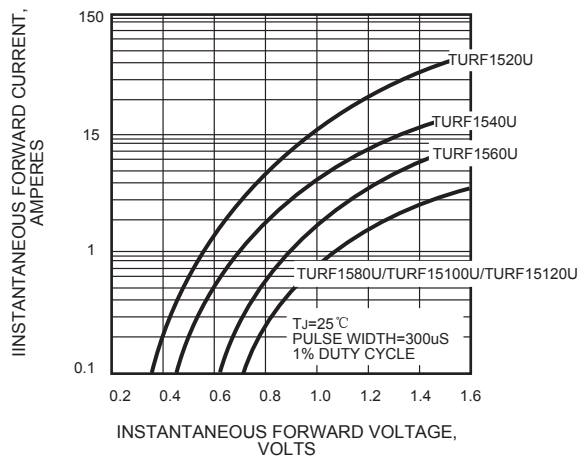


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

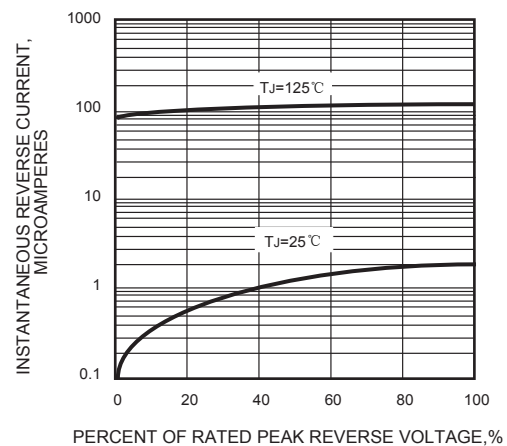


FIG.5 - TYPICAL JUNCTION CAPACITANCE

