

Pb Free Plating Product

U30D20D/U30D30D/U30D40D/U30D50D/U30D60D



30.0Ampere Heat Sink Dual Doubler Polarity Ultra Fast Recovery Half Bridge Rectifiers

**Features**

- \* Fast switching for high efficiency
- \* Low forward voltage drop
- \* High current capability
- \* Low reverse leakage current
- \* High surge current capability

**Application**

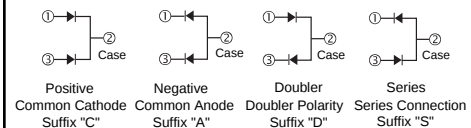
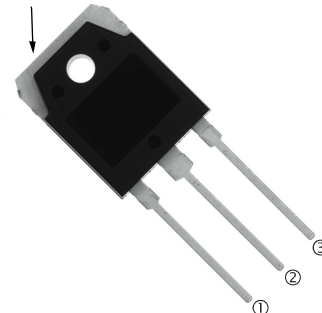
- \* Automotive Inverters and Solar Inverters
- \* Plating Power Supply, Motor Control, SMPS and UPS
- \* Car Audio Amplifiers and Sound Device Systems

**Mechanical Data**

- \* Case: Heatsink TO-3PN 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: 0.65 gram approximately

**TO-3PN**

② Bottom Side Metal Heat Sink

**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   | U30D20D     | U30D30D<br>U30D40D | U30D50D<br>U30D60D | 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 2x15A=30A)                       | IF(AV)   | 30.0        |                    |                    | A        |
| Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method) | IFSM     | 300         |                    |                    | A        |
| Maximum Instantaneous Forward Voltage @ 15.0 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       | 10<br>500   |                    |                    | uA<br>uA |
| Maximum Reverse Recovery Time (Note 1)                                                            | Trr      | 35-50       |                    |                    | nS       |
| Typical junction Capacitance (Note 2)                                                             | CJ       | 150         |                    |                    | pF       |
| Operating Junction and Storage Temperature Range                                                  | TJ, TSTG | -55 to +150 |                    |                    | °C       |

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

(2) Thermal Resistance junction to terminal.

(3) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.

FIG.1 - FORWARD CURRENT DERATING CURVE

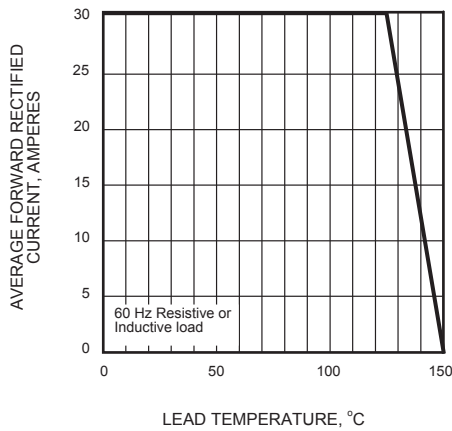


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

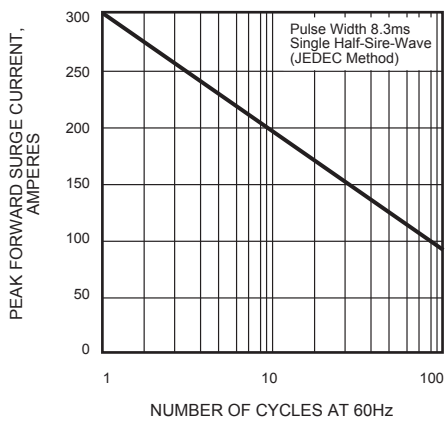


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

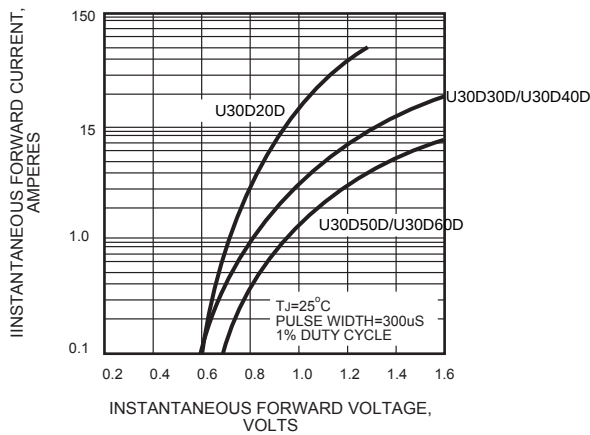


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

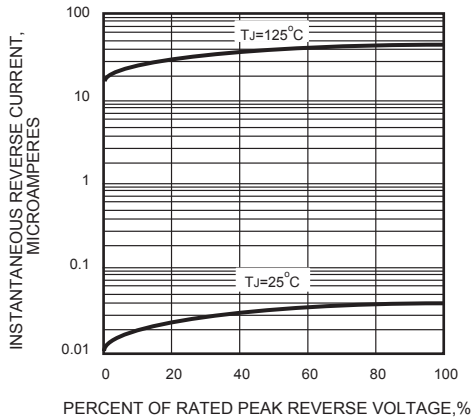
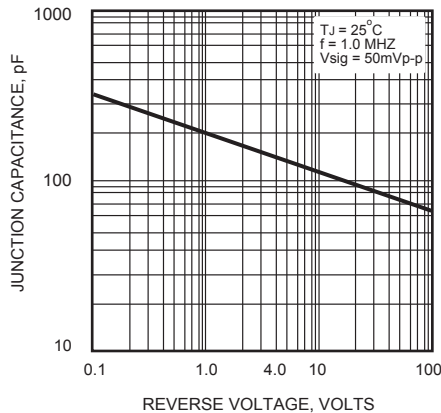
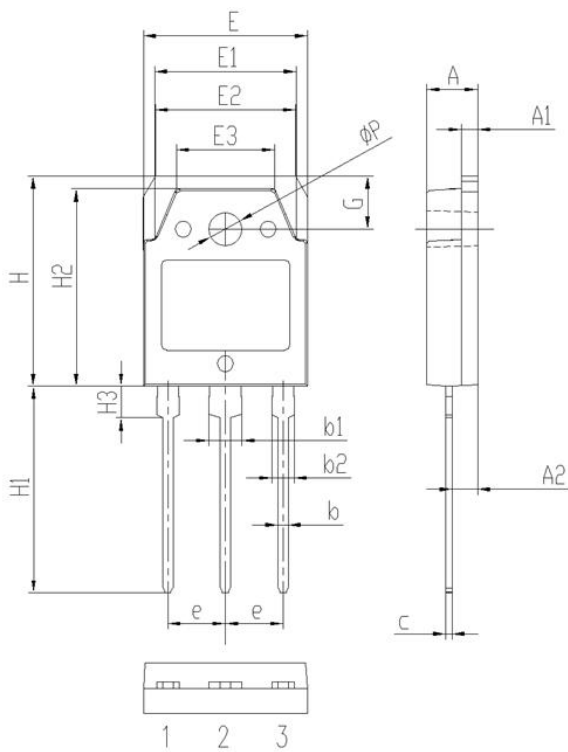


FIG.5 - TYPICAL JUNCTION CAPACITANCE



Package Information

TO-3PN Package Outline



| Symbol | Dimensions(millimeters) |      |
|--------|-------------------------|------|
|        | Min.                    | Max. |
| A      | 4.60                    | 5.00 |
| A1     | 1.50                    | 2.00 |
| A2     | 2.20                    | 2.60 |
| b      | 0.80                    | 1.20 |
| b1     | 2.90                    | 3.30 |
| b2     | 1.90                    | 2.30 |
| c      | 0.40                    | 0.80 |
| e      | 5.25                    | 5.65 |
| E      | 15.3                    | 15.7 |
| E1     | 13.2                    | 13.6 |
| E2     | 13.1                    | 13.5 |
| E3     | 9.10                    | 9.50 |
| H      | 19.7                    | 20.1 |
| H1     | 19.1                    | 20.1 |
| H2     | 18.3                    | 18.7 |
| H3     | 2.80                    | 3.20 |
| G      | 4.80                    | 5.20 |
| ΦP     | 3.00                    | 3.40 |