

Pb Free Plating Product

FMU31UR/FMU32UR/FMU33UR/FMU34UR/FMU35UR/FMU36UR  

20.0 Ampere Heatsink Dual Series Connection Ultra Fast Recovery Rectifiers

**Features**

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

**Application**

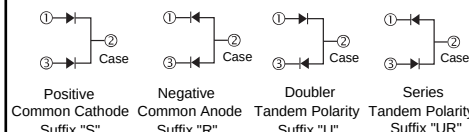
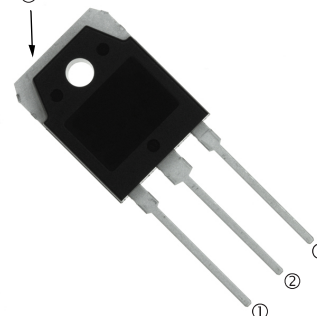
- ★ Automotive Inverters and Solar Inverters
- ★ Plating Power Supply, Motor Control, SMPS and UPS
- ★ Car Audio Amplifiers and Sound Device Systems

**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: 0.61 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   | FMU31UR<br>FMU32UR | FMU33UR<br>FMU34UR | FMU35UR<br>FMU36UR | 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<br>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)                                                               | RAJC     | 0.85               |                    |                    | °C/W     |
| Operating Junction and Storage Temperature Range                                                  | TJ, TSTG | -55 to + 150       |                    |                    | °C       |

NOTES : (1) Reverse recovery test conditions I<sub>F</sub> = 0.5A, R = 1.0A, I<sub>rr</sub> = 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

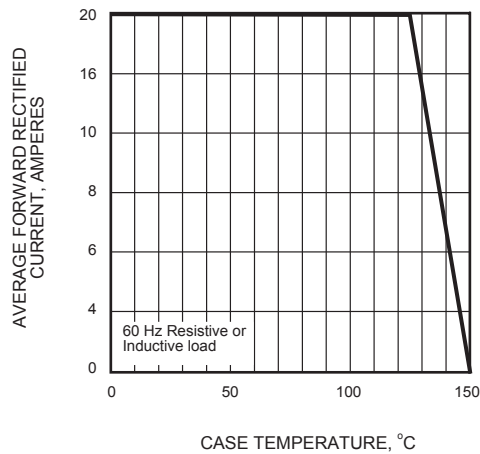


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

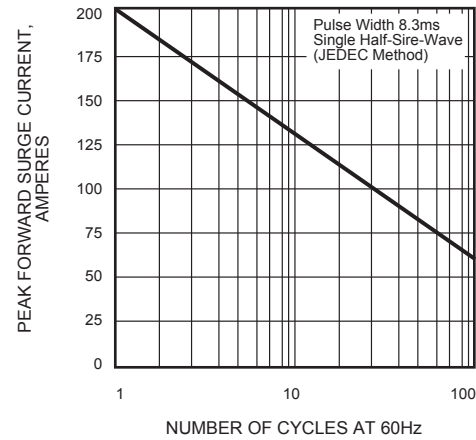


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

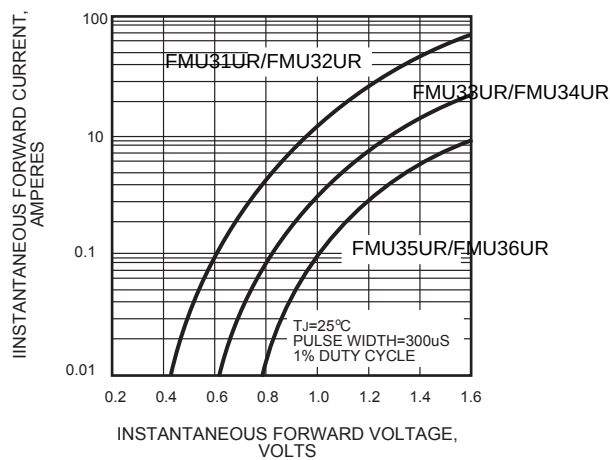


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

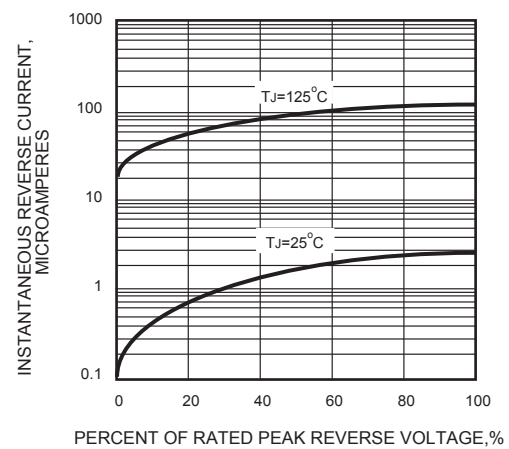
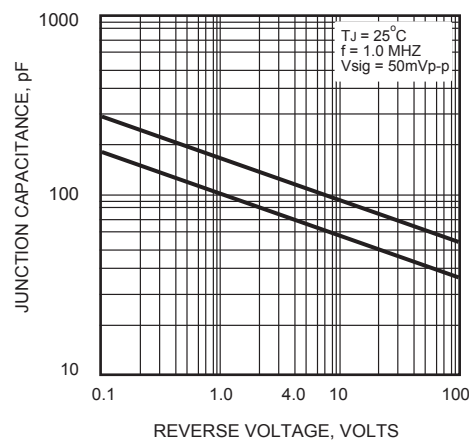
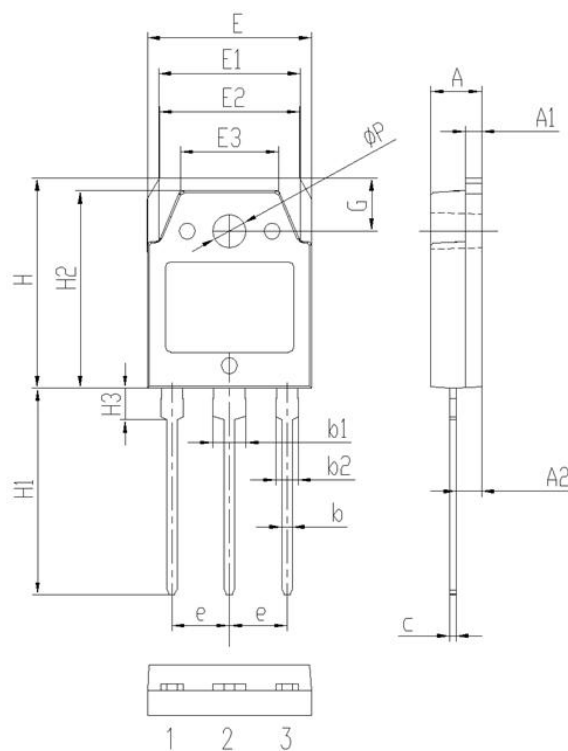


FIG.5 - TYPICAL JUNCTION CAPACITANCE



## 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 |
| $\Phi P$ | 3.00                    | 3.40 |