

CURRENT 30 Ampere
VOLTAGE RANG 200 to 1000 Volts

SFP3002 THRU SFP3010

Features

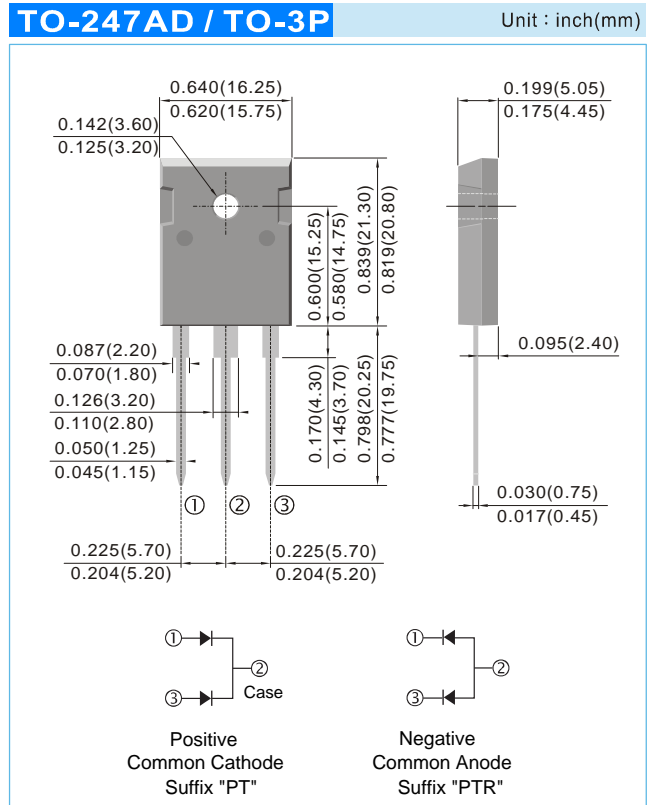
- * Fast switching for high efficiency
- * Low forward voltage drop
- * High current capability
- * Low reverse leakage current
- * High surge current capability

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-247AD/247S/3P 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



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 | SFP3002 | SFP3004 | SFP3006 | SFP3008 | SFP3010 | UNIT |
|--|----------------|-------------|---------|---------|---------|---------|--------------------------------|
| Maximum Recurrent Peak Reverse Voltage | VRRM | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS Voltage | VRMS | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC Blocking Voltage | VDC | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Average Forward Rectified Current $T_C=125^\circ\text{C}$ (Total Device $2 \times 15\text{A}=30\text{A}$) | $I_{F(AV)}$ | 30.0 | | | | | A |
| Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method) | I_{FSM} | 300 | | | | | A |
| Maximum Instantaneous Forward Voltage @ 15.0 A (Per Diode/Per Leg) | V_F | 0.98 | 1.3 | 1.5 | 1.7 | 1.9 | V |
| Maximum DC Reverse Current @ $T_J=25^\circ\text{C}$ At Rated DC Blocking Voltage @ $T_J=125^\circ\text{C}$ | I_R | 10 500 | | | | | μA μA |
| Maximum Reverse Recovery Time (Note 1) | T_{rr} | 35 | | | 50 | | nS |
| Typical junction Capacitance (Note 2) | C_J | 150 | | | | | pF |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | | | | | $^\circ\text{C}$ |

NOTES : (1) Reverse recovery test conditions $I_F = 0.5\text{A}$ $I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$.

(2) Thermal Resistance junction to terminal.

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

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RATING AND CHARACTERISTIC CURVES

FIG.1 - FORWARD CURRENT DERATING CURVE

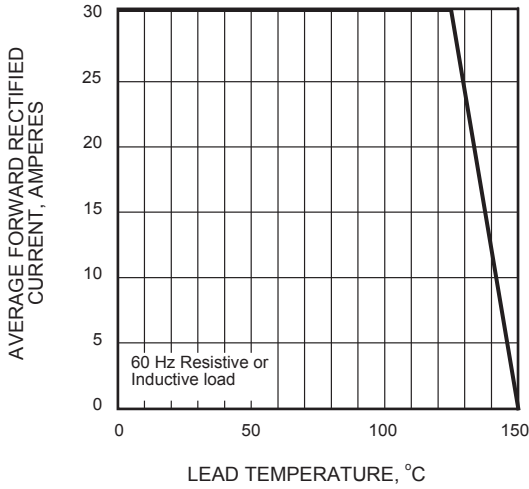


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

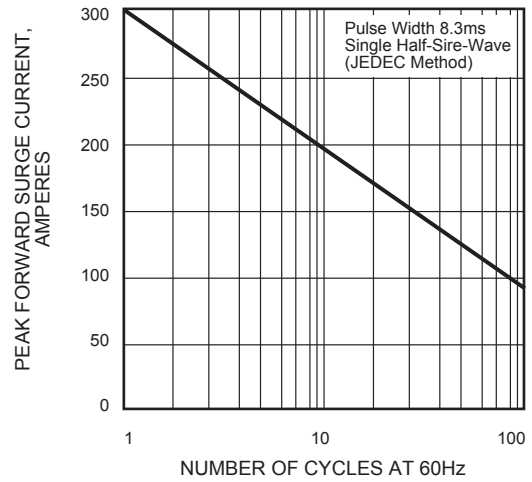


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

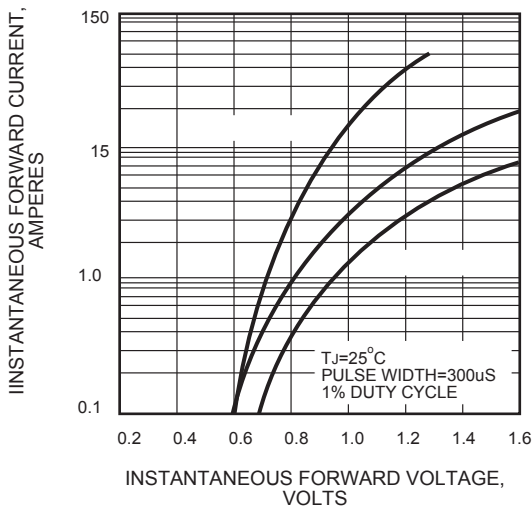


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

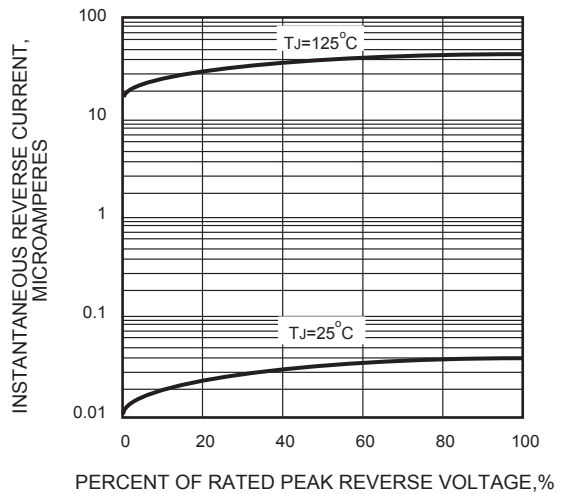
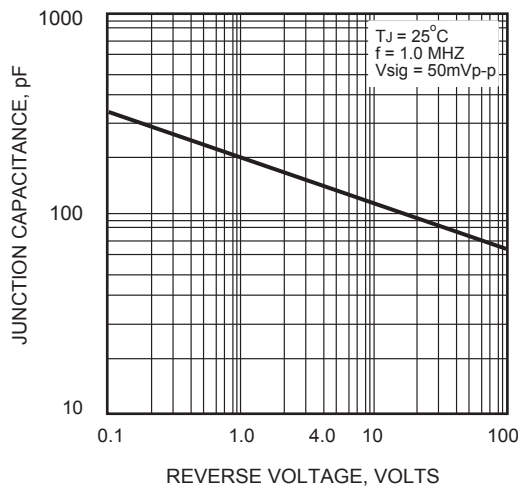


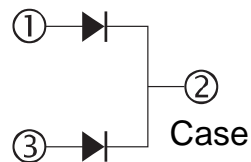
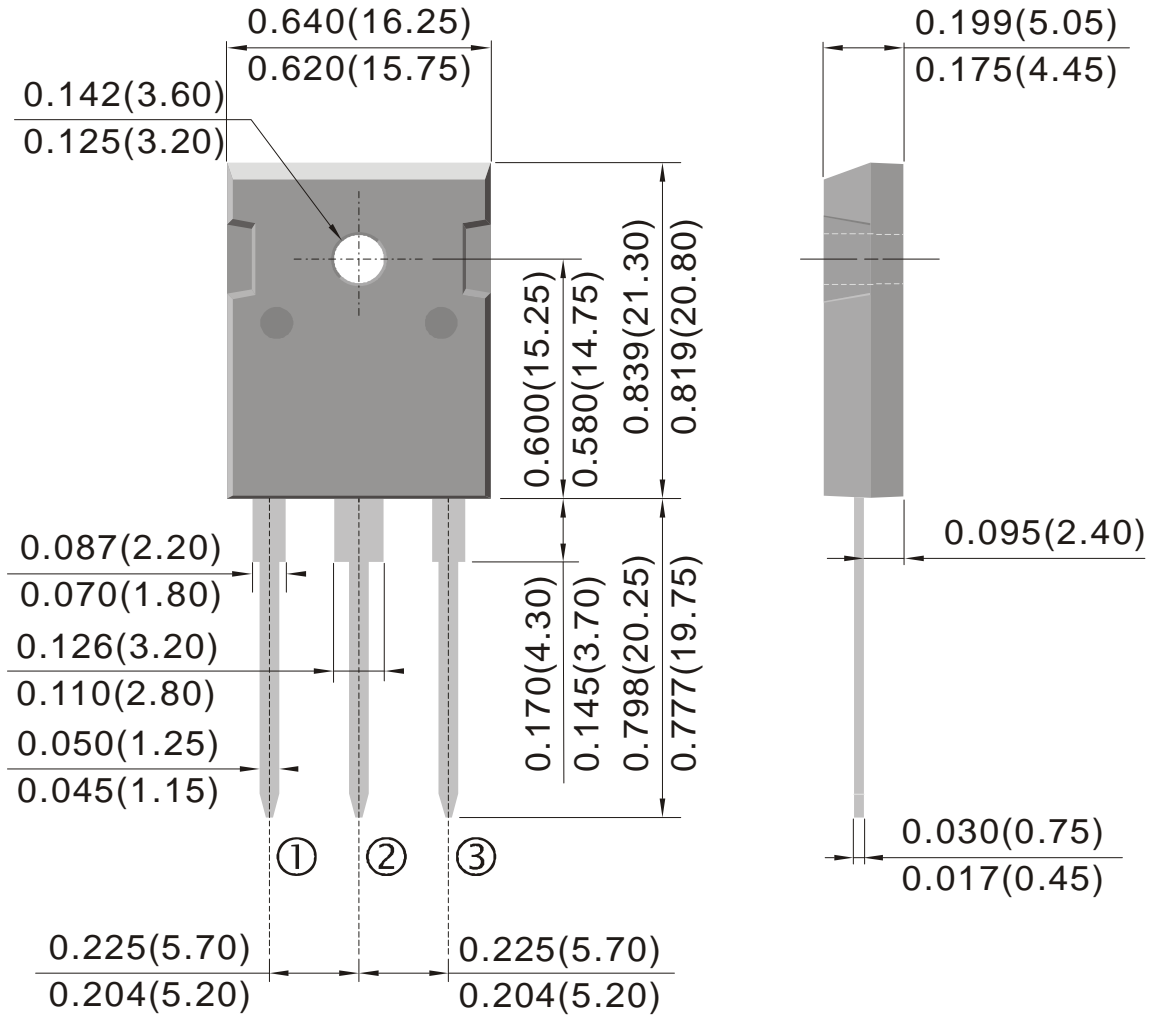
FIG.5 - TYPICAL JUNCTION CAPACITANCE



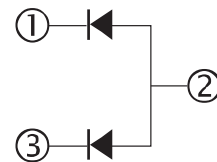
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T0-247AD



Positive
 Common Cathode
 Suffix "PT"



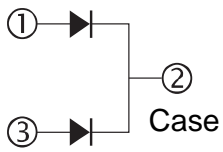
Negative
 Common Anode
 Suffix "PTR"

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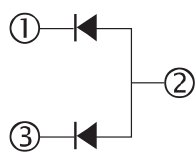
SFP3002 THRU SFP3010

T0-247S

| Ref. | Dimensions | | | | | |
|------|-------------|-------|-------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.85 | | 5.16 | 0.191 | | 0.203 |
| D | 2.20 | | 2.60 | 0.086 | | 0.102 |
| E | 0.40 | | 0.80 | 0.015 | | 0.031 |
| F | 1.00 | | 1.40 | 0.039 | | 0.055 |
| F1 | | 3.00 | | | 0.118 | |
| F2 | | 2.00 | | | 0.079 | |
| F3 | 1.90 | | 2.40 | 0.075 | | 0.094 |
| F4 | 3.00 | | 3.40 | 0.118 | | 0.134 |
| G | | 10.90 | | | 0.429 | |
| H | 15.45 | | 16.03 | 0.608 | | 0.631 |
| L | 19.85 | | 21.09 | 0.781 | | 0.830 |
| L1 | 3.70 | | 4.30 | 0.146 | | 0.169 |
| L2 | 18.30 | | 19.13 | 0.720 | | 0.753 |
| L3 | 14.20 | | 20.30 | 0.559 | | 0.799 |
| L4 | 34.05 | | 41.38 | 1.341 | | 1.629 |
| L5 | 5.35 | | 6.30 | 0.211 | | 0.248 |
| M | 2.00 | | 3.00 | 0.079 | | 0.118 |
| V | | 5° | | | 5° | |
| V2 | | 60° | | | 60° | |
| Dia. | 3.55 | | 3.65 | 0.140 | | 0.144 |



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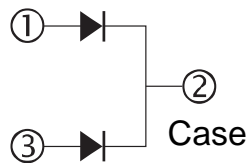
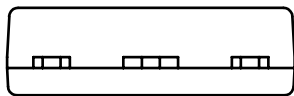
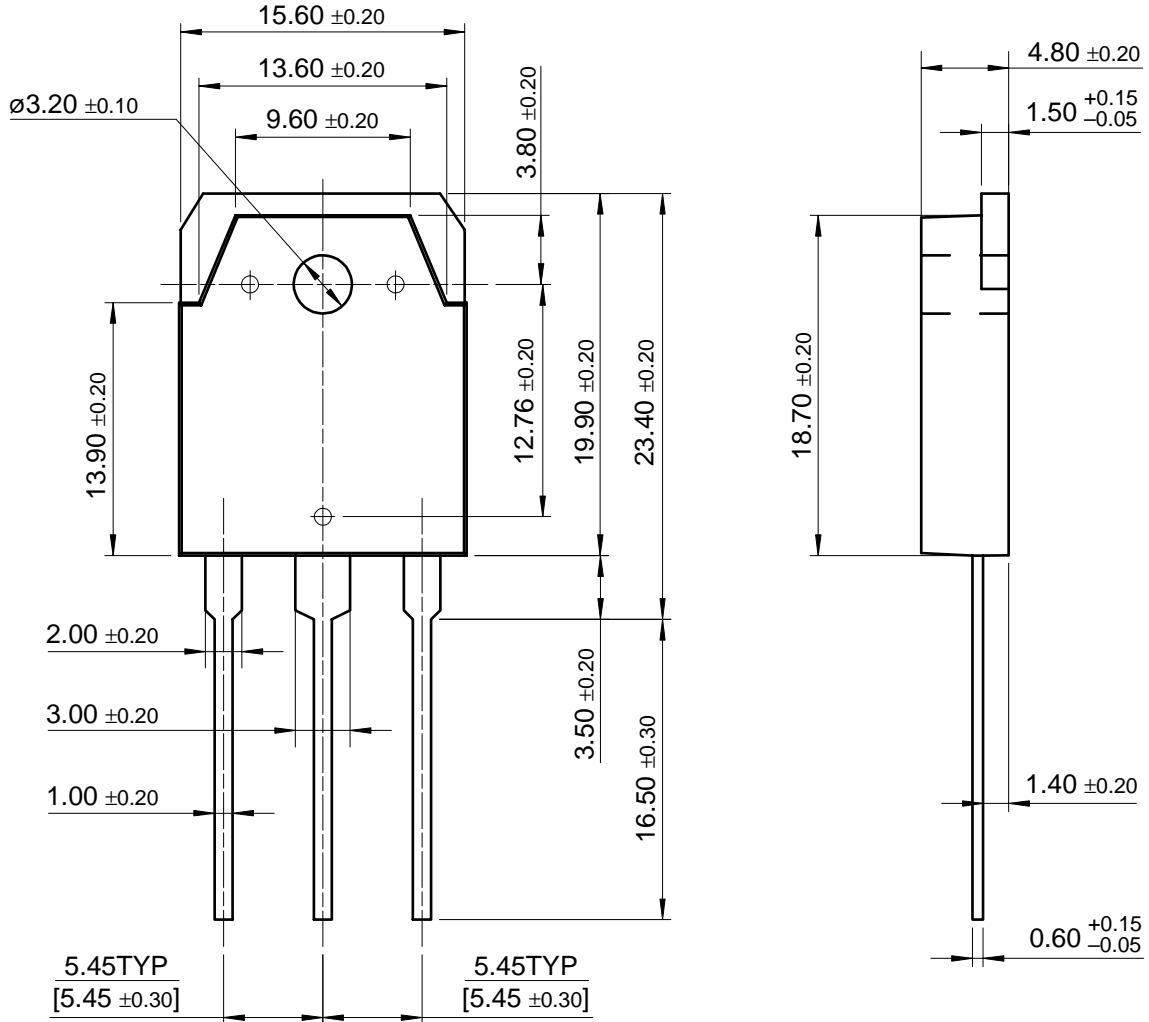


Negative
 Common Anode
 Suffix "PTR"

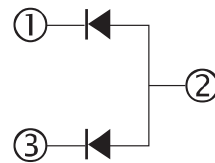
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TO-3P



Positive
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Negative
 Common Anode
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