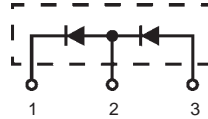


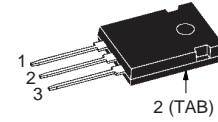
Phase-leg Rectifier Diode

$V_{RRM} = 1200/1600 \text{ V}$
 $I_{F(RMS)} = 2 \times 43 \text{ A}$
 $I_{F(AV)M} = 2 \times 28 \text{ A}$

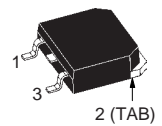
| V_{RSM} | V_{RRM} | TO-247 AD | TO-268 AA | ISOPLUS 247™ |
|-----------|-----------|------------|-------------|--------------|
| V | V | Type | | |
| 1300 | 1200 | DSP 25-12A | DSP 25-12AT | |
| 1700 | 1600 | DSP 25-16A | DSP 25-16AT | DSP 25-16AR |



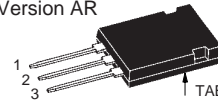
TO-247 AD
Version A



TO-268 AA
Version AT



ISOPLUS 247™
Version AR



1 = Cathode, 2 = Anode/Cathode, 3 = Anode

| Symbol | Test Conditions | Maximum Ratings |
|-----------------|---|----------------------|
| $I_{F(RMS)}$ | $T_{VJ} = T_{VJM}$ | 43 A |
| $I_{F(AV)M}$ | $T_{case} = 100^\circ\text{C}; 180^\circ \text{ sine}$ | 28 A |
| I_{FSM} | $T_{VJ} = 45^\circ\text{C}; t = 10 \text{ ms}$ (50 Hz), sine | 300 A |
| | $t = 8.3 \text{ ms}$ (60 Hz), sine | 330 A |
| I^2t | $T_{VJ} = 150^\circ\text{C}; t = 10 \text{ ms}$ (50 Hz), sine | 270 A ² s |
| | $t = 8.3 \text{ ms}$ (60 Hz), sine | 300 A ² s |
| I^2t | $T_{VJ} = 45^\circ\text{C}; t = 10 \text{ ms}$ (50 Hz), sine | 450 A ² s |
| | $t = 8.3 \text{ ms}$ (60 Hz), sine | 450 A ² s |
| T_{VJ} | | -40...+180 °C |
| T_{VJM} | | 180 °C |
| T_{stg} | | -40...+150 °C |
| M_d^* | mounting torque M3 | 0.8...1.2 Nm |
| F_c | mounting force with clip | 20...120 N |
| V_{ISOL}^{**} | 50/60 Hz, RMS, $t = 1 \text{ minute}$, leads-to-tab | 2500 V~ |
| Weight | TO-268 / TO-247 | 4 / 6 g |

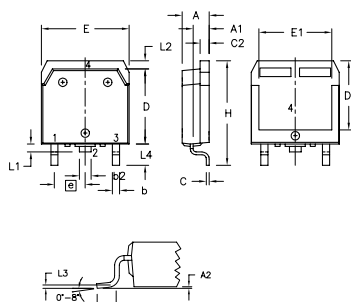
* Version A only; ** Version AR only

Features

- International standard packages JEDEC TO-247 AD and TO-268 AA surface mountable
- For single and three phase bridge configuration
- Planar passivated chips
- Epoxy meets UL 94V-0 flammability classification
- Version AR isolated and UL registered E153432

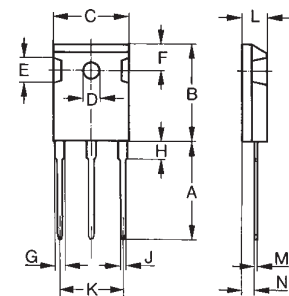
| Symbol | Test Conditions | Characteristic Values |
|------------|---|-----------------------|
| I_R | $T_{VJ} = 150^\circ\text{C}$ $V_R = V_{RRM}$ | $\leq 2 \text{ mA}$ |
| V_F | $I_F = 55 \text{ A}; T_{VJ} = 25^\circ\text{C}$ | $\leq 1.6 \text{ V}$ |
| V_{T0} | For power-loss calculations only | 0.8 V |
| r_T | $T_{VJ} = T_{VJM}$ | 15 mΩ |
| R_{thJC} | DC current | 1.5 K/W |
| R_{thCH} | DC current (with heatsink compound) | 0.4 K/W |
| a | Maximum allowable acceleration | 100 m/s ² |

TO-268 AA Outline



| Dim. | Millimeter | | Inches | |
|----------------|------------|-------|----------|------|
| | Min. | Max. | Min. | Max. |
| A | 4.9 | 5.1 | .193 | .201 |
| A ₁ | 2.7 | 2.9 | .106 | .114 |
| A ₂ | .02 | .25 | .001 | .010 |
| b | 1.15 | 1.45 | .045 | .057 |
| b ₂ | 1.9 | 2.1 | .75 | .83 |
| C | .4 | .65 | .016 | .026 |
| D | 13.80 | 14.00 | .543 | .551 |
| E | 15.85 | 16.05 | .624 | .632 |
| E ₁ | 13.3 | 13.6 | .524 | .535 |
| e | 5.45 BSC | | .215 BSC | |
| H | 18.70 | 19.10 | .736 | .752 |
| L | 2.40 | 2.70 | .094 | .106 |
| L1 | 1.20 | 1.40 | .047 | .055 |
| L2 | 1.00 | 1.15 | .039 | .045 |
| L3 | 0.25 BSC | | .010 BSC | |
| L4 | 3.80 | 4.10 | .150 | .161 |

TO-247 AD and ISOPLUS 247™



| Dim. | Millimeter | | Inches | |
|------|------------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 19.81 | 20.32 | 0.780 | 0.800 |
| B | 20.80 | 21.46 | 0.819 | 0.845 |
| C | 15.75 | 16.26 | 0.610 | 0.640 |
| D* | 3.55 | 3.65 | 0.140 | 0.144 |
| E | 4.32 | 5.49 | 0.170 | 0.216 |
| F | 5.4 | 6.2 | 0.212 | 0.244 |
| G | 1.65 | 2.13 | 0.065 | 0.084 |
| H | - | 4.5 | - | 0.177 |
| J | 1.0 | 1.4 | 0.040 | 0.055 |
| K | 10.8 | 11.0 | 0.426 | 0.433 |
| L | 4.7 | 5.3 | 0.185 | 0.209 |
| M | 0.4 | 0.8 | 0.016 | 0.031 |
| N | 1.5 | 2.49 | 0.087 | 0.102 |

* ISOPLUS 247™ without hole

Data according to IEC 60747 and refer to a single diode
IXYS reserves the right to change limits, test conditions and dimensions

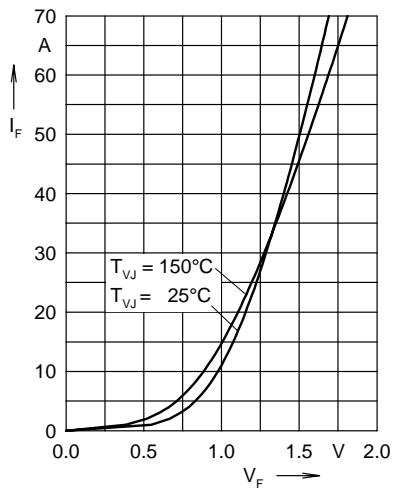


Fig. 1 Forward current versus voltage drop per diode

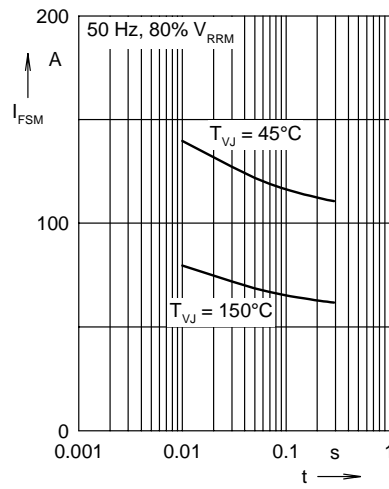


Fig. 2 Surge overload current

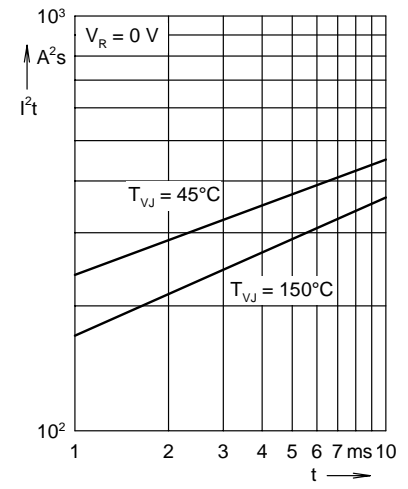


Fig. 3 I^2t versus time per diode

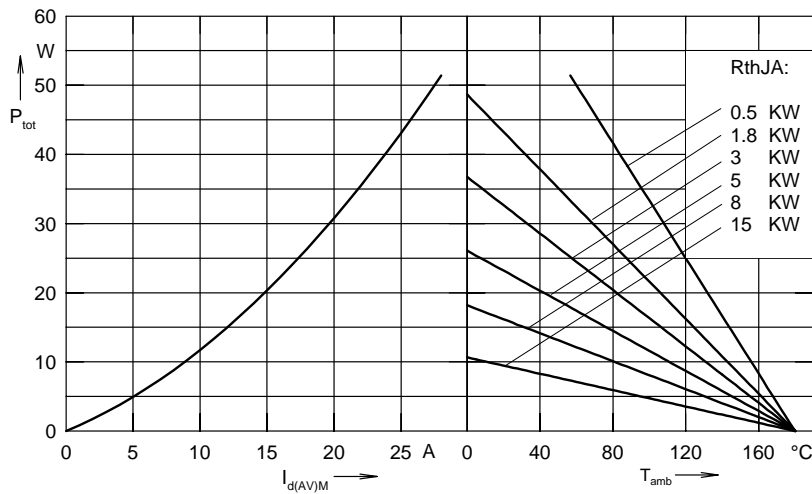


Fig. 4 Power dissipation versus direct output current and ambient temperature, sine 180°

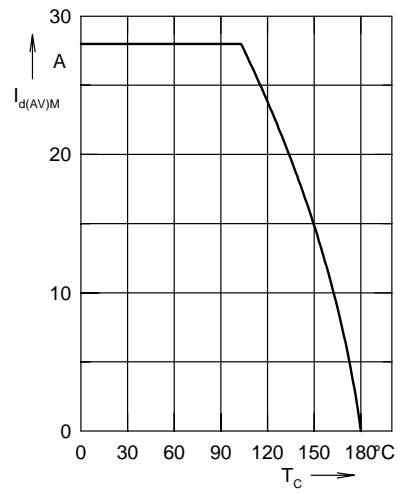


Fig. 5 Max. forward current versus case temperature

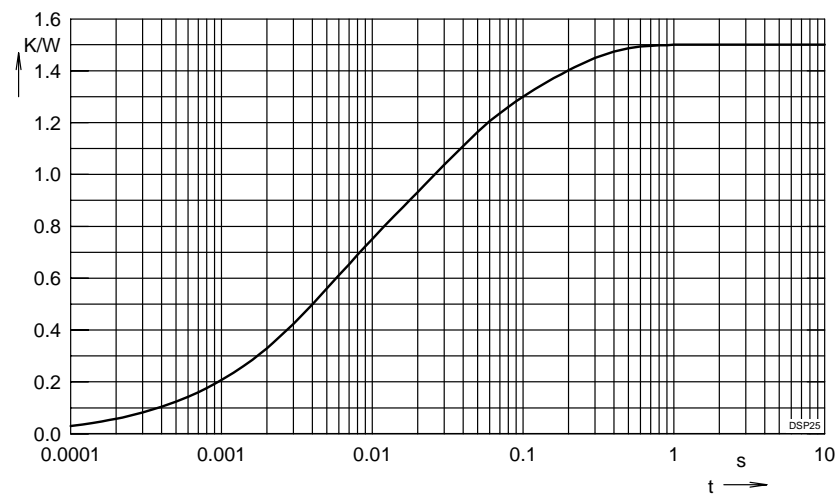


Fig. 6 Transient thermal impedance junction to case

Constants for Z_{thjC} calculation:

| i | R_{thi} (K/W) | t_i (s) |
|---|-----------------|-----------|
| 1 | 0.06075 | 0.0004 |
| 2 | 0.183 | 0.00256 |
| 3 | 0.3405 | 0.0045 |
| 4 | 0.543 | 0.0242 |
| 5 | 0.3728 | 0.15 |