

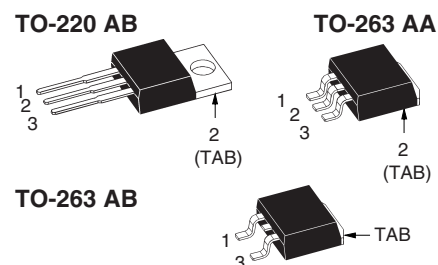
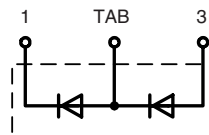
Phase-leg Rectifier Diode

$$V_{RRM} = 800/1200 \text{ V}$$

$$I_{F(RMS)} = 2 \times 17 \text{ A}$$

$$I_{F(AV)M} = 2 \times 11 \text{ A}$$

| V_{RSM} V | V_{RRM} V | TO-220 AB Type | TO-263 AA | TO-263AB |
|----------------|----------------|-------------------|------------|-----------|
| 900 | 800 | DSP 8-08A | DSP 8-08AS | DSP 8-08S |
| 1300 | 1200 | DSP 8-12A | DSP 8-12AS | DSP 8-12S |



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

| Symbol | Conditions | Maximum Ratings | |
|--------------|--|----------------------|------------------|
| I_{FRMS} | $T_{VJ} = T_{VJM}$ | 17 | A |
| $I_{F(AV)M}$ | $T_{case} = 100^{\circ}\text{C}$; 180° sine | 11 | A |
| I_{FSM} | $T_{VJ} = 45^{\circ}\text{C}$; $t = 10 \text{ ms}$ | (50 Hz), sine 100 | A |
| | $t = 8.3 \text{ ms}$ | (60 Hz), sine 110 | A |
| | $T_{VJ} = 150^{\circ}\text{C}$; $t = 10 \text{ ms}$ | (50 Hz), sine 90 | A |
| | $t = 8.3 \text{ ms}$ | (60 Hz), sine 100 | A |
| I^2t | $T_{VJ} = 45^{\circ}\text{C}$; $t = 10 \text{ ms}$ | (50 Hz), sine 50 | A ² s |
| | $t = 8.3 \text{ ms}$ | (60 Hz), sine 50 | A ² s |
| | $T_{VJ} = 150^{\circ}\text{C}$; $t = 10 \text{ ms}$ | (50 Hz), sine 41 | A ² s |
| | $t = 8.3 \text{ ms}$ | (60 Hz), sine 42 | A ² s |
| T_{VJ} | | -40...+180 | °C |
| T_{VJM} | | 180 | °C |
| T_{stg} | | -40...+150 | °C |
| $M_d^{1)}$ | Mounting torque | 0.4...0.6 | Nm |
| Weight | TO-263/TO-220 | 2/4 | g |

Features

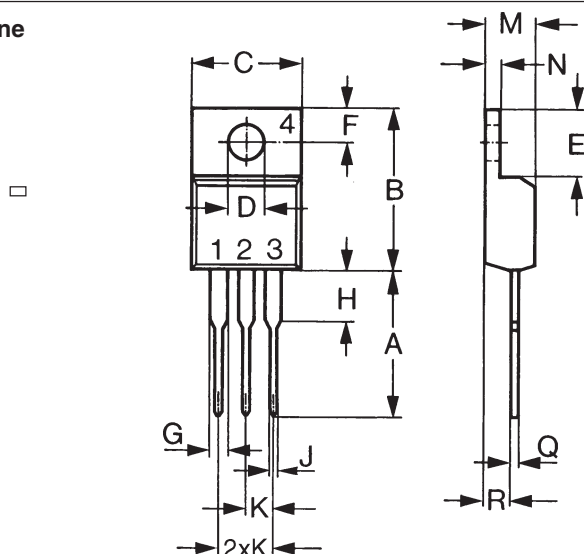
- International standard packages JEDEC TO-220 AB and TO-263 AA surface mountable
- For single and three phase bridge configuration
- Planar passivated chips
- Epoxy meets UL 94V-0 flammability classification

| Symbol | Conditions | Characteristic Values | |
|-----------------|---|-----------------------|------------------|
| I_R | $T_{VJ} = 25^{\circ}\text{C}$ $V_R = V_{RRM}$ | \leq 5 | μA |
| V_F | $I_F = 7 \text{ A}$; $T_{VJ} = 25^{\circ}\text{C}$ | \leq 1.15 | V |
| V_{T0} | For power-loss calculations only | 0.8 | V |
| r_T | $T_{VJ} = T_{VJM}$ | 40 | m Ω |
| R_{thJC} | DC current | 3.5 | K/W |
| $R_{thCH}^{1)}$ | DC current (with heatsink compound) | typ. 0.5 | K/W |
| a | Maximum allowable acceleration | 100 | m/s ² |

¹⁾ TO-220 only

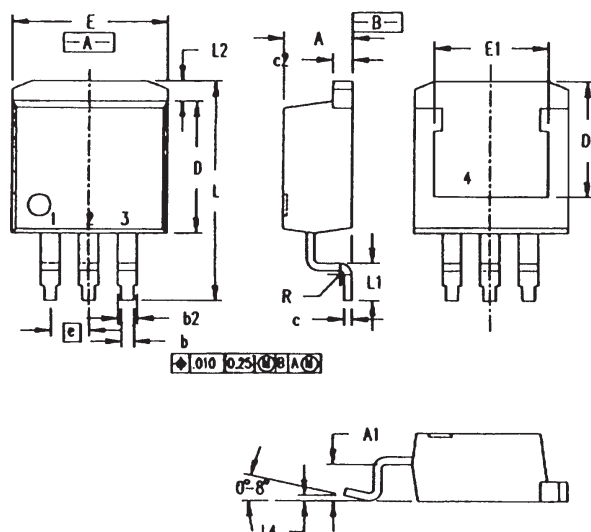
Data according to IEC 60747 and refer to a single diode unless otherwise stated.

TO-220 AB Outline



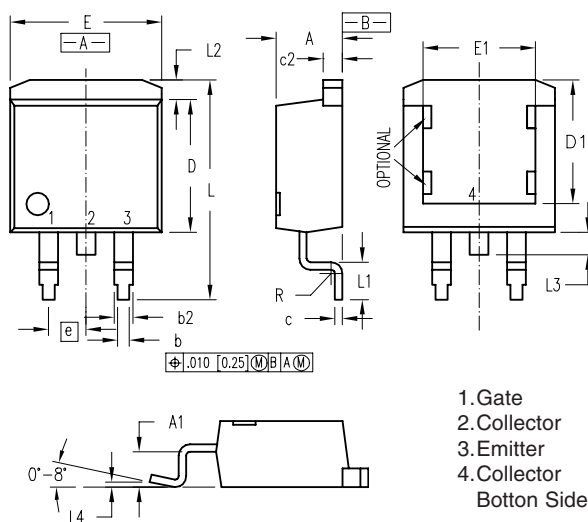
| Dim. | Millimeter | Inches |
|------|-------------|-------------|
| | Min. Max. | Min. Max. |
| A | 12.70 13.97 | 0.500 0.550 |
| B | 14.73 16.00 | 0.580 0.630 |
| C | 9.91 10.66 | 0.390 0.420 |
| D | 3.54 4.08 | 0.139 0.161 |
| E | 5.85 6.85 | 0.230 0.270 |
| F | 2.54 3.18 | 0.100 0.125 |
| G | 1.15 1.65 | 0.045 0.065 |
| H | 2.79 5.84 | 0.110 0.230 |
| J | 0.64 1.01 | 0.025 0.040 |
| K | 2.54 BSC | 0.100 BSC |
| M | 4.32 4.82 | 0.170 0.190 |
| N | 1.14 1.39 | 0.045 0.055 |
| Q | 0.38 0.56 | 0.015 0.022 |
| R | 2.29 2.79 | 0.090 0.110 |

TO-263 AA Outline



| Dim. | Millimeter | Inches |
|------|-------------|-----------|
| | Min. Max. | Min. Max. |
| A | 4.06 4.83 | .160 .190 |
| A1 | 2.03 2.79 | .080 .110 |
| b | 0.51 0.99 | .020 .039 |
| b2 | 1.14 1.40 | .045 .055 |
| c | 0.46 0.74 | .018 .029 |
| c2 | 1.14 1.40 | .045 .055 |
| D | 8.64 9.65 | .340 .380 |
| D1 | 7.11 8.13 | .280 .320 |
| E | 9.65 10.29 | .380 .405 |
| E1 | 6.86 8.13 | .270 .320 |
| e | 2.54 BSC | .100 BSC |
| L | 14.61 15.88 | .575 .625 |
| L1 | 2.29 2.79 | .090 .110 |
| L2 | 1.02 1.68 | .040 .066 |
| L4 | 0 0.38 | 0 .015 |
| R | 0.46 0.74 | .018 .029 |

TO-263 AB Outline



| Dim. | Millimeter | Inches |
|------|-------------|-----------|
| | Min. Max. | Min. Max. |
| A | 4.06 4.83 | .160 .190 |
| A1 | 2.03 2.79 | .080 .110 |
| b | 0.51 0.99 | .020 .039 |
| b2 | 1.14 1.40 | .045 .055 |
| c | 0.46 0.74 | .018 .029 |
| c2 | 1.14 1.40 | .045 .055 |
| D | 8.64 9.65 | .340 .380 |
| D1 | 8.00 8.89 | .315 .350 |
| E | 9.65 10.29 | .380 .405 |
| E1 | 6.22 8.13 | .245 .320 |
| e | 2.54 BSC | .100 BSC |
| L | 14.61 15.88 | .575 .625 |
| L1 | 2.29 2.79 | .090 .110 |
| L2 | 1.02 1.68 | .040 .066 |
| L3 | 1.27 1.78 | .050 .070 |
| L4 | 0 0.20 | 0 .008 |
| R | 0.46 0.74 | .018 .029 |

1. Gate
2. Collector
3. Emitter
4. Collector Bottom Side

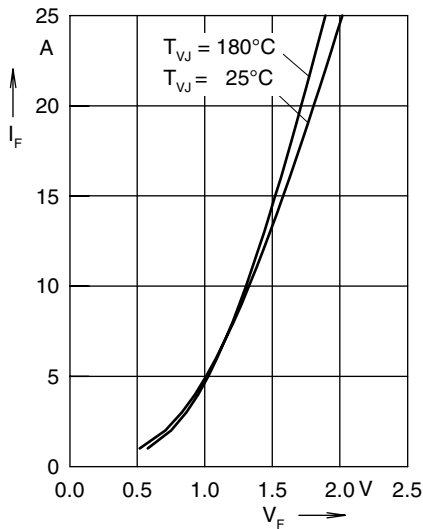


Fig. 1 Forward current versus voltage drop per diode

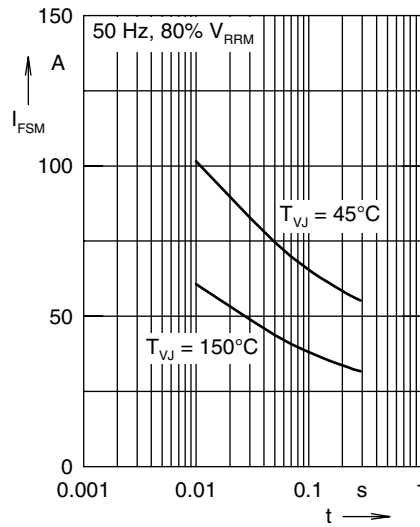


Fig. 2 Surge overload current drop per diode

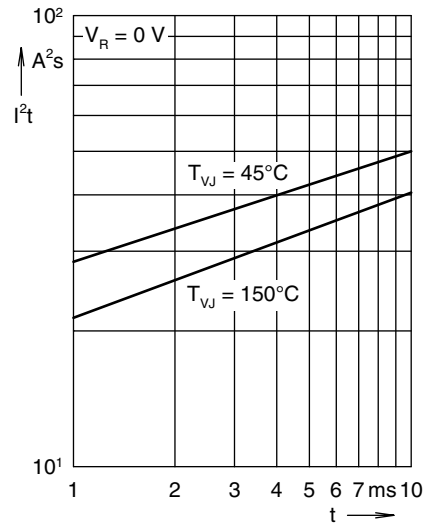


Fig. 3 I^2t versus time per diode

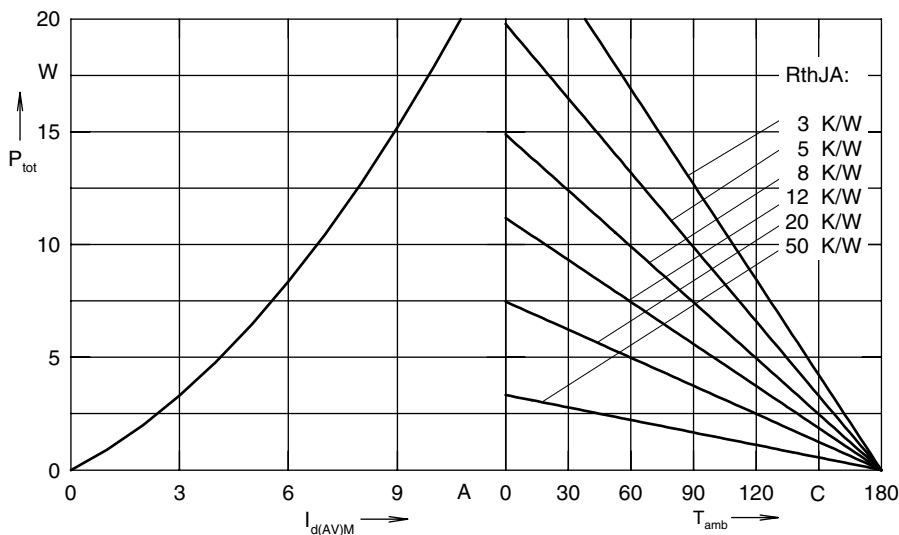


Fig. 4 Power dissipation versus direct output current and ambient temperature, sine 180°

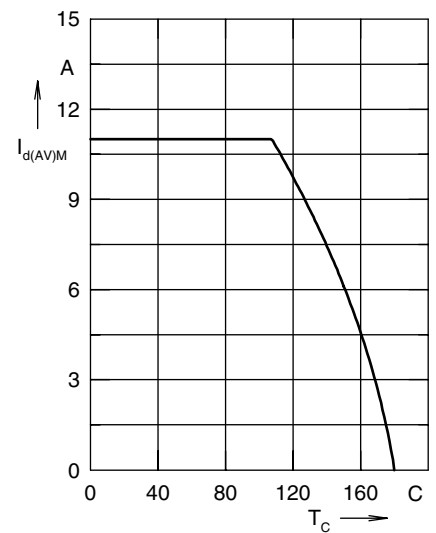


Fig. 5 Max. forward current versus case temperature

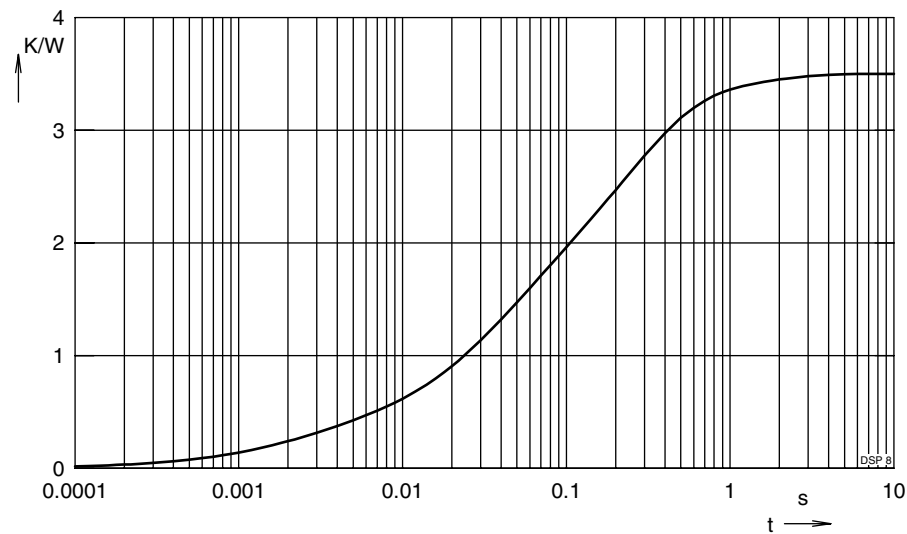


Fig. 6 Transient thermal impedance junction to case

Constants for Z_{thJC} calculation:

| i | R_{thi} (K/W) | t_i (s) |
|---|-----------------|-----------|
| 1 | 0.252 | 0.002 |
| 2 | 1.045 | 0.032 |
| 3 | 1.932 | 0.227 |
| 4 | 0.271 | 1.2 |

This datasheet has been download from:

www.datasheetcatalog.com

Datasheets for electronics components.