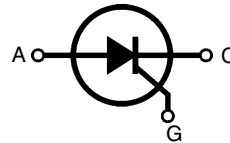
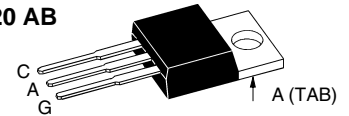
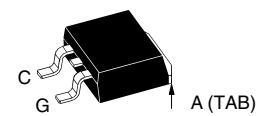


Phase Control Thyristors

$V_{RRM} = 800-1200 \text{ V}$
 $I_{T(RMS)} = 29 \text{ A}$
 $I_{T(AV)M} = 19 \text{ A}$

| V_{RSM} V_{DSM} | V_{RRM} V_{DRM} | Type | Type |
|------------------------|------------------------|-------------|--------------|
| V | V | TO 220 | TO 263 |
| 800 | 800 | CS 19-08ho1 | CS 19-08ho1S |
| 1200 | 1200 | CS 19-12ho1 | CS 19-12ho1S |


TO-220 AB

TO-263 AA


A = Anode, C = Cathode, G = Gate

| Symbol | Test Conditions | Maximum Ratings | |
|----------------|---|------------------------------------|----------------------|
| $I_{T(RMS)}$ | $T_{VJ} = T_{VJM}$ | 29 | A |
| $I_{T(AV)M}$ | $T_C = 85^\circ\text{C}; 180^\circ \text{ sine}$ | 19 | A |
| I_{TSM} | $T_{VJ} = 45^\circ\text{C}; V_R = 0 \text{ V}$ | t = 10 ms (50 Hz), sine | 160 A |
| | | t = 8.3 ms (60 Hz), sine | 180 A |
| I^2t | $T_{VJ} = 45^\circ\text{C}; V_R = 0 \text{ V}$ | t = 10 ms (50 Hz), sine | 140 A |
| | | t = 8.3 ms (60 Hz), sine | 160 A |
| $(di/dt)_{cr}$ | $T_{VJ} = T_{VJM}; f = 50 \text{ Hz}, t_p = 200 \mu\text{s}; V_D = 2/3 V_{DRM}; I_G = 0.15 \text{ A}; di_G/dt = 0.15 \text{ A}/\mu\text{s}$ | repetitive, $I_T = 20 \text{ A}$ | 100 A/ μs |
| | | non repetitive, $I_T = I_{T(AV)M}$ | 500 A/ μs |
| $(dv/dt)_{cr}$ | $T_{VJ} = T_{VJM}; R_{GK} = \infty; \text{method 1 (linear voltage rise)}$ | $V_{DR} = 2/3 V_{DRM}$ | 500 V/ μs |
| P_{GM} | $T_{VJ} = T_{VJM}; I_T = I_{T(AV)M}$ | $t_p = 30 \mu\text{s}$ | 5 W |
| P_{GAV} | | $t_p = 300 \mu\text{s}$ | 2.5 W |
| V_{RGM} | | | 0.5 W |
| T_{VJ} | | | 10 V |
| T_{VJM} | | -40...+125 | $^\circ\text{C}$ |
| T_{stg} | | 125 | $^\circ\text{C}$ |
| M_d | Mounting torque with screw M3; TO220 | 0.45/4 | Nm/lb.in. |
| | Mounting torque with screw M3.5; TO220 | 0.55/5 | Nm/in. |
| Weight | | 2 | g |

Features

- SCR for frequency up to 400Hz
- International standard package
- High performance glass passivated chip
- Long-term stability of leakage current and blocking voltage
- Epoxy meets UL 94V-0

Applications

- Motor control
- Power converter
- AC power controller
- Light and temperature control
- SCR for inrush current limiting in power supplies or AC drive

Advantages

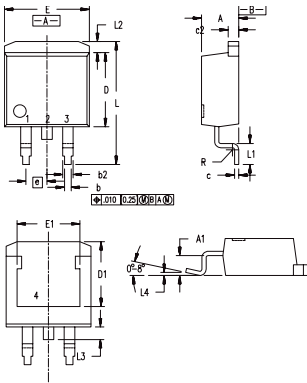
- Space and weight savings
- Simple mounting

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

| Symbol | Test Conditions | Characteristic Values | |
|------------|---|-----------------------|------------------|
| I_R, I_D | $T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$ | \leq | 5 mA |
| V_T | $I_T = 20 \text{ A}; T_{VJ} = 25^\circ\text{C}$ | \leq | 1.6 V |
| V_{T0} | For power-loss calculations only ($T_{VJ} = 125^\circ\text{C}$) | 0.85 | V |
| r_T | | 27 | m Ω |
| V_{GT} | $V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ | \leq | 1.5 V |
| | $T_{VJ} = -40^\circ\text{C}$ | \leq | 2.5 V |
| I_{GT} | $V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ | \leq | 28 mA |
| | $T_{VJ} = -40^\circ\text{C}$ | \leq | 50 mA |
| V_{GD} | $T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$ | \leq | 0.2 V |
| I_{GD} | | \leq | 3 mA |
| I_L | $T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$ $I_G = 0.1 \text{ A}; di_G/dt = 0.1 \text{ A}/\mu\text{s}$ | \leq | 75 mA |
| I_H | $T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$ | \leq | 50 mA |
| t_{gd} | $T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.1 \text{ A}; di_G/dt = 0.1 \text{ A}/\mu\text{s}$ | \leq | 2 μs |
| R_{thJC} | DC current | 1.0 | K/W |
| R_{thCK} | DC current | typ 0.25 | K/W |
| a | Max. acceleration, 50 Hz | 50 | m/s ² |

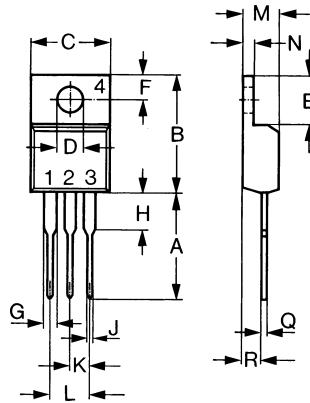
Dimensions in mm (1 mm = 0.0394")

TO 263 AA



| 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 | 1.40 | .040 | .055 |
| L3 | 1.27 | 1.78 | .050 | .070 |
| L4 | 0 | 0.38 | 0 | .015 |
| R | 0.46 | 0.74 | .018 | .029 |

TO 220 AB



| 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 | 0.35 | 0.56 | 0.014 | 0.022 |
| R | 2.29 | 2.79 | 0.090 | 0.110 |