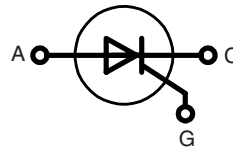


Phase Control Thyristors

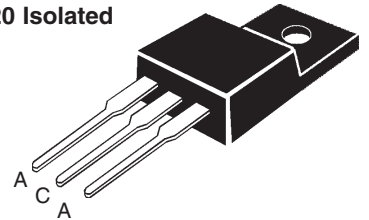
Electrically Isolated Tab

$V_{RRM} = 800-1200 \text{ V}$
 $I_{T(AV)M} = 16 \text{ A}$

| V_{RSM} V_{DSM} V | V_{RRM} V_{DRM} V | Type |
|-----------------------------|-----------------------------|--------------|
| 800 | 800 | CS 22-08io1M |
| 1200 | 1200 | CS 22-12io1M |



TO-220 Isolated



A = Anode, C = Cathode, G = Gate
 Tab = Isolated

| Symbol | Conditions | Maximum Ratings | |
|----------------|---|---|---|
| $I_{T(AV)M}$ | $T_C = 85^\circ\text{C}$ 180° sine ^① | 16 A | |
| | $T_A = 25^\circ\text{C}$ 180° sine ^② | 2.5 A | |
| I_{TSM} | $T_{VJ} = 45^\circ\text{C}$ $V_R = 0 \text{ V}$ | t = 10 ms (50 Hz), sine 300 A t = 8.3 ms (60 Hz), sine 340 A | |
| | $T_{VJ} = T_{VJM}$ $V_R = 0 \text{ V}$ | t = 10 ms (50 Hz), sine 250 A t = 8.3 ms (60 Hz), sine 285 A | |
| | I^2t | $T_{VJ} = 45^\circ\text{C}$ $V_R = 0 \text{ V}$ | t = 10 ms (50 Hz), sine 450 A ² s t = 8.3 ms (60 Hz), sine 480 A ² s |
| | | $T_{VJ} = T_{VJM}$ $V_R = 0 \text{ V}$ | t = 10 ms (50 Hz), sine 300 A ² s t = 8.3 ms (60 Hz), sine 337 A ² s |
| $(di/dt)_{cr}$ | $T_{VJ} = T_{VJM}$ f = 50Hz, $t_p = 200\mu\text{s}$ | repetitive, $I_T = 20 \text{ A}$ 150 A/ μs | |
| | $V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.08 \text{ A}$ $di_G/dt = 0.08 \text{ A}/\mu\text{s}$ | non repetitive, $I_T = I_{T(AV)M}$ 500 A/ μs | |
| $(dv/dt)_{cr}$ | $T_{VJ} = T_{VJM}$, $V_{DR} = \frac{2}{3} V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise) | 1000 V/ μs | |
| P_{GM} | $T_{VJ} = T_{VJM}$ $I_T = I_{T(AV)M}$ | $t_p = 30 \mu\text{s}$ 10 W $t_p = 300 \mu\text{s}$ 5 W | |
| P_{GAV} | | 0.5 W | |
| V_{RGM} | | 10 V | |
| T_{VJ} | | -40...+150 °C | |
| T_{VJM} | | 150 °C | |
| T_{stg} | | -40...+125 °C | |
| M_d | Mounting torque | M 3 or UNC 4-40 0.5-0.8 Nm | |
| Weight | | 3 g | |

Features

- Thyristor for frequencies up to 400Hz
- International standard package
- Epoxy meets UL 94V-0
- High performance glass passivated chip
- Long-term stability of leakage current and blocking voltage
- Plastic overmolded tab for electrical isolation

Applications

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

Advantages

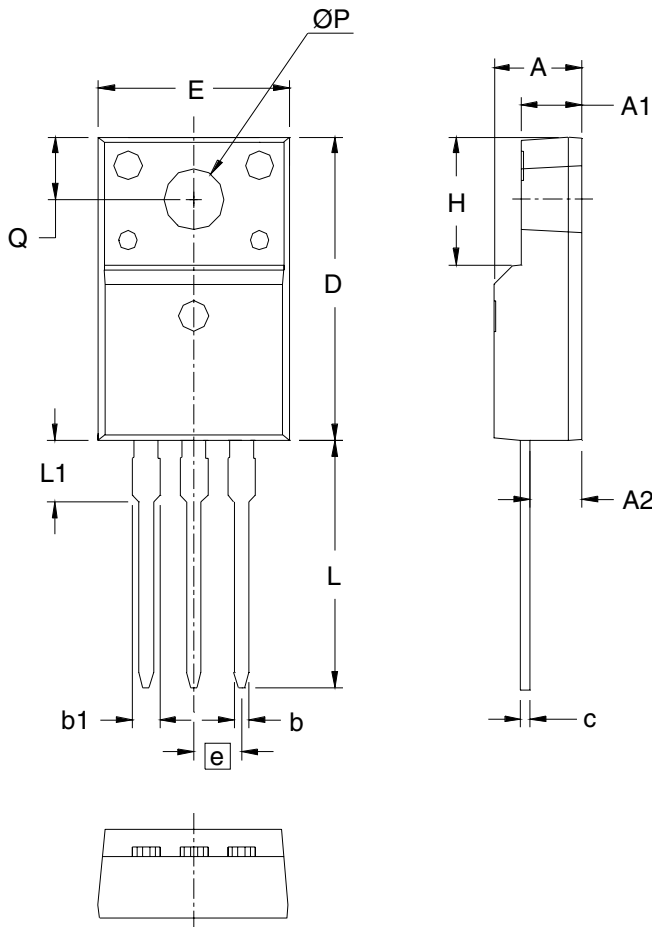
- Space and weight savings
- Simple mounting

^① mounted on heatsink
^② without heatsink

Data according to IEC 60747

| Symbol | Conditions | Characteristic Values | |
|------------|--|------------------------------|---------------------|
| I_R, I_D | $T_{VJ} = T_{VJM}, V_R = V_{RRM}, V_D = V_{DRM}$ | \leq | 5 mA |
| V_T | $I_T = 30 \text{ A}, T_{VJ} = 25^\circ\text{C}$ | \leq | 1.5 V |
| V_{T0} | For power-loss calculations only ($T_{VJ} = 150^\circ\text{C}$) | | 0.9 V |
| r_T | | | 18 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 30 mA |
| | | $T_{VJ} = -40^\circ\text{C}$ | \leq 50 mA |
| V_{GD} | $T_{VJ} = T_{VJM}, V_D = \frac{2}{3} V_{DRM}$ | \leq | 0.2 V |
| I_{GD} | | \leq | 3 mA |
| I_L | $T_{VJ} = 25^\circ\text{C}, t_p = 10 \mu\text{s}$ $I_G = 0.08 \text{ A}, di_G/dt = 0.08 \text{ A}/\mu\text{s}$ | \leq | 100 mA |
| I_H | $T_{VJ} = 25^\circ\text{C}, V_D = 6 \text{ V}, R_{GK} = \infty$ | \leq | 80 mA |
| t_{gd} | $T_{VJ} = 25^\circ\text{C}, V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.08 \text{ A}, di_G/dt = 0.08 \text{ A}/\mu\text{s}$ | \leq | 2 μs |
| R_{thJC} | DC current | | 2.5 K/W |
| R_{thCH} | DC current | | 0.5 K/W |
| R_{thJA} | DC current | | 50 K/W |
| a | Max. acceleration, 50 Hz | | 50 m/s ² |

Package Outline



| SYM | INCHES | | MILLIMETERS | |
|-----|----------|------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | .177 | .193 | 4.50 | 4.90 |
| A1 | .092 | .108 | 2.34 | 2.74 |
| A2 | .101 | .117 | 2.56 | 2.96 |
| b | .028 | .035 | 0.70 | 0.90 |
| b1 | .050 | .058 | 1.27 | 1.47 |
| c | .018 | .024 | 0.45 | 0.60 |
| D | .617 | .633 | 15.67 | 16.07 |
| E | .392 | .408 | 9.96 | 10.36 |
| e | .100 BSC | | 2.54 BSC | |
| H | .255 | .271 | 6.48 | 6.88 |
| L | .499 | .523 | 12.68 | 13.28 |
| L1 | .119 | .135 | 3.03 | 3.43 |
| ØP | .121 | .129 | 3.08 | 3.28 |
| Q | .126 | .134 | 3.20 | 3.40 |

IXYS reserves the right to change limits, test conditions and dimensions