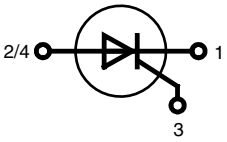
# High Voltage Phase Control Thyristor

$V_{DRM}$ = 2500 V
$I_{TSM}$ = 200 A




**TO-268 AA (D³Pak)**


4 = Backside = Anode

| Thyristor | | | | |
|---|---|---|---|---|
| **Symbol** | **Conditions** | | **Maximum Ratings** | |
| $V_{DRM}$ | | | 2500 | V |
| $V_{DSM}$ | | | 2500 | V |
| $V_{RRM / RSM}$ | | | 1650 | V |
| $I_{TSM}$ | sine 180°; t = 10 ms; $V_R$ = 0 V; $T_{VJ}$ = 25°C | | 200 | A |
| $(di/dt)_{cr}$ | f = 50 Hz; $t_p$ = 200 µs; $V_D$ = 2000 V<br>$di_G/dt$ = 0.45 A/µs; $I_G$ = 0.45 A<br>non repetitive; $I_T$ = 45 A | | 150 | A/µs |
| $(dv/dt)_{cr}$ | $V_D$ = 2200 V<br>$R_{GK}$ = ∞; method 1 (linear voltage rise) | | 5000 | V/µs |

| Symbol | Conditions | | Characteristic Values | | |
|---|---|---|---|---|---|
| | | | min. | max. | |
| $V_T$ | $I_T$ = 45 A | $T_{VJ}$ = 25°C | | 3.0 | V |
| $V_{GT}$ | $V_D$ = 6 V | $T_{VJ}$ = 25°C | | 2.5 | V |
| $I_{GT}$ | | | | 250 | mA |
| $V_{GD}$ | $V_D$ = $^2/_3$ $V_{DRM}$ | $T_{VJ}$ = 25°C | | 0.2 | V |
| $I_{GD}$ | | | | 5 | mA |
| $I_L$ | $t_p$ = 10 µs; $V_D$ = 6 V<br>$I_G$ = 0.45 A; $di_G/dt$ = 0.45 A/µs | $T_{VJ}$ = 0°C | | 700 | mA |
| $I_H$ | $V_D$ = 6 V; $R_{GK}$ = ∞ | $T_{VJ}$ = 0°C | | 300 | mA |
| | | $T_{VJ}$ = 70°C | 55 | | mA |
| $t_q$ | $I_T$ = 20 A; $t_p$ = 300 µs; di/dt = -20 A/µs<br>$V_R$ = 10 V; dv/dt = 20 V/µs<br>$V_D$ = 800 V | $T_{VJ}$ = 70°C | | 100 | µs |
| $I_{RRM / DRM}$ | $V_R$ = $V_{RRM}$; $V_D$ = $V_{DRM}$ | $T_{VJ}$ = 25°C | | 50 | µA |
| | | $T_{VJ}$ = 70°C | | 200 | µA |
| $I_{DSM / RSM}$ | $V_R$ = $V_{RSM}$; $V_D$ = $V_{DSM}$ | $T_{VJ}$ = 70°C | | 2 | mA |
| $R_{thJC}$ | | | | 0.80 | K/W |

### Features

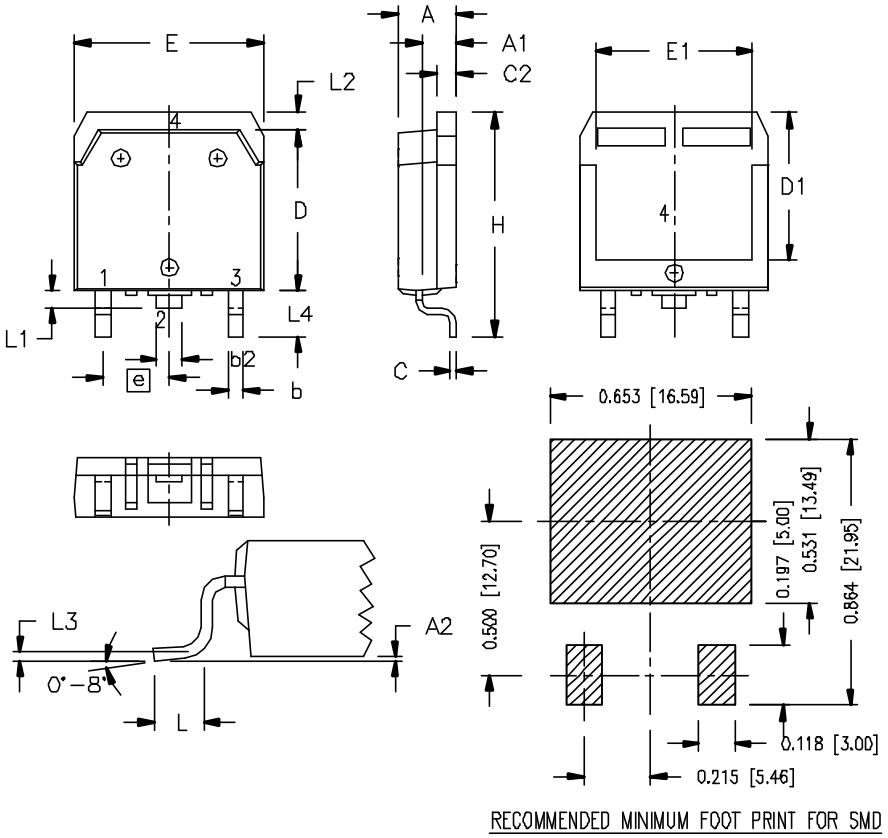
- high voltage thyristor
  - for line frequency
  - chip technology for long term stability
  - planar glass passivated
- International standard package JEDEC TO-268
- Epoxy meets UL 94V-0

### Applications

- controlled rectifiers
  - power supplies
  - drives
- AC switches
- capacitor discharge control
  - flash tubes
  - X-ray and laser generators

| Component | | |
|---|---|---|
| **Symbol** | **Conditions** | **Maximum Ratings** |
| $T_{VJ}$ | | -10 ... +70 °C |
| $T_{stg}$ | | -40 ... +70 °C |
| $F_C$ | Mounting force with clip | 20...120 N |

| **Symbol** | **Conditions** | **Characteristic Values** | | | |
|---|---|---|---|---|---|
| | | **min.** | **typ.** | **max.** | |
| $R_{thCH}$ | with heatsink compound | | 0.15 | | K/W |
| **Weight** | | | 5 | | g |




| Dim. | Millimeter | | Inches | |
|---|---|---|---|---|
| | min | max | min | max |
| A | 4.90 | 5.10 | 0.193 | 0.201 |
| A1 | 2.70 | 2.90 | 0.106 | 0.114 |
| A2 | 0.02 | 0.25 | 0.001 | 0.100 |
| b | 1.15 | 1.45 | 0.045 | 0.057 |
| b2 | 1.90 | 2.10 | 0.075 | 0.083 |
| C | 0.40 | 0.65 | 0.016 | 0.026 |
| C2 | 1.45 | 1.60 | 0.057 | 0.063 |
| D | 13.80 | 14.00 | 0.543 | 0.551 |
| D1 | 12.40 | 12.70 | 0.488 | 0.500 |
| E | 15.85 | 16.05 | 0.624 | 0.632 |
| E1 | 13.30 | 13.60 | 0.524 | 0.535 |
| e | 5.45 BSC | | 0.215 BSC | |
| H | 18.70 | 19.10 | 0.736 | 0.752 |
| L | 2.40 | 2.70 | 0.094 | 0.106 |
| L1 | 1.20 | 1.40 | 0.047 | 0.055 |
| L2 | 1.00 | 1.15 | 0.039 | 0.045 |
| L3 | 0.25 BSC | | 0.100 BSC | |
| L4 | 3.80 | 4.10 | 0.150 | 0.161 |

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