

# Pulse Thyristor

## Type Y200CKC250

### Absolute Maximum Ratings

|           | VOLTAGE RATINGS                                 | MAXIMUM LIMITS | UNITS |
|-----------|-------------------------------------------------|----------------|-------|
| $V_{DRM}$ | Repetitive peak off-state voltage, (note 1)     | 2500           | V     |
| $V_{DSM}$ | Non-repetitive peak off-state voltage, (note 1) | 2500           | V     |
| $V_{RRM}$ | Repetitive peak reverse voltage, (note 1)       | 2000           | V     |
| $V_{RSM}$ | Non-repetitive peak reverse voltage, (note 1)   | 2100           | V     |
| $V_{DC}$  | Permanent dc voltage                            | 1500           | V     |

|                | OTHER RATINGS                                                        | MAXIMUM LIMITS   | UNITS      |
|----------------|----------------------------------------------------------------------|------------------|------------|
| $I_{TM}$       | Maximum pulse current, (note 2)                                      | 20               | kA         |
| $I^2t$         | Load limit integral, (note 2)                                        | $50 \times 10^3$ | $A^2s$     |
| $I_{T(AV)M}$   | Maximum average on-state current. $T_{sink}=85^\circ C$ , (note 3)   | 245              | A          |
| $(di/dt)_{cr}$ | Critical rate of rise of on-state current (non-repetitive), (Note 4) | 5000             | $A/\mu s$  |
| $V_{RGM}$      | Peak reverse gate voltage                                            | 18               | V          |
| $T_{j op}$     | Operating temperature range                                          | -40 to +125      | $^\circ C$ |
| $T_{stg}$      | Storage temperature range                                            | -40 to +150      | $^\circ C$ |

### Notes:-

- 1)  $V_{GK}=-2V$
- 2)  $T_j=125^\circ C$ , half-sinewave,  $t_{p(max)}=250\mu s$
- 3) Double side cooled, single phase; 50Hz,  $180^\circ$  half-sinewave.

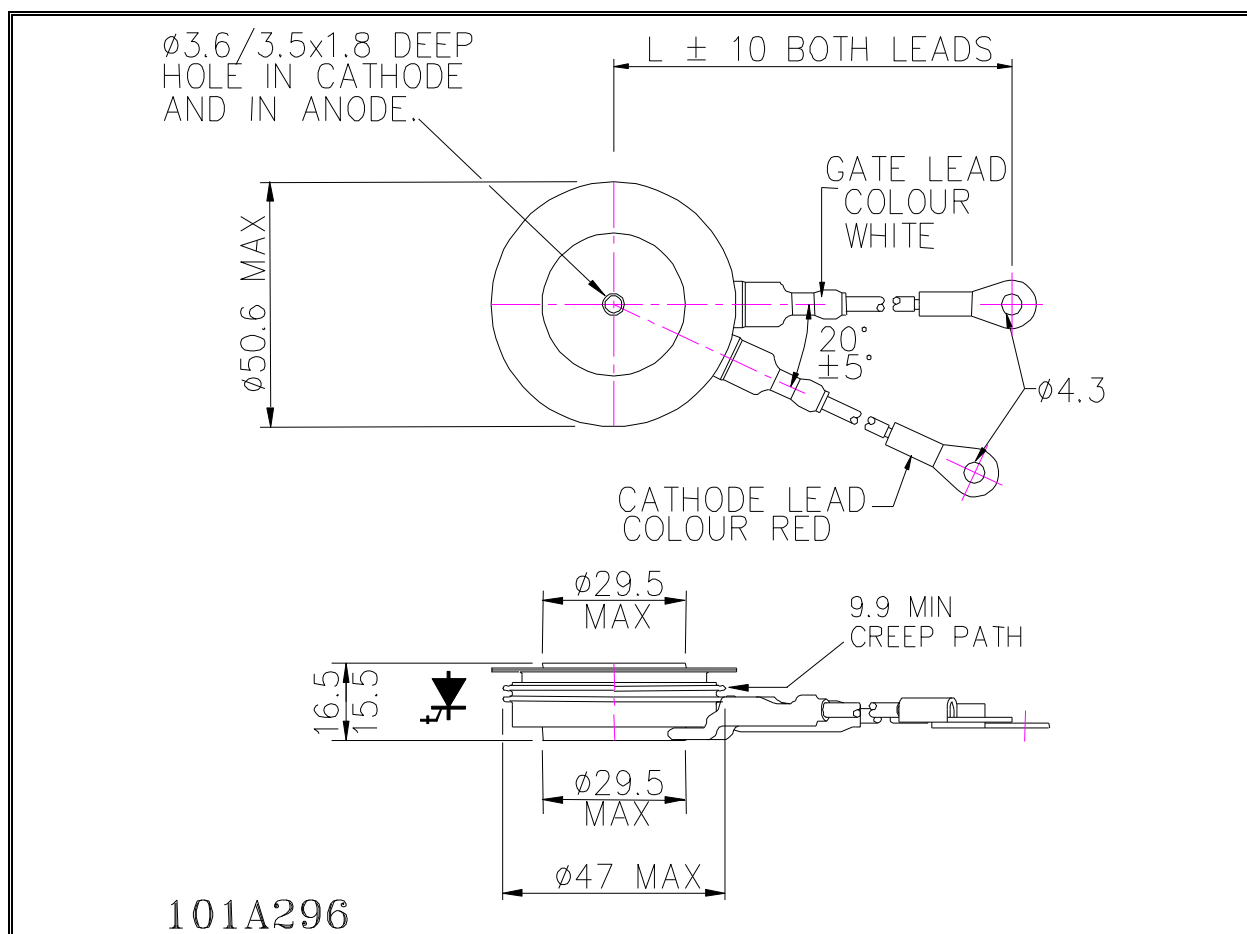
## Characteristics

|                | PARAMETER                                  | MIN. | TYP. | MAX.  | TEST CONDITIONS (Note 1)                                                                                     | UNITS |
|----------------|--------------------------------------------|------|------|-------|--------------------------------------------------------------------------------------------------------------|-------|
| $V_{TM}$       | Maximum peak on-state voltage              | -    | -    | 10    | $I_G=4A$ , $I_{TM}=4000A$                                                                                    | V     |
| $V_{T0}$       | Threshold voltage                          | -    | -    | 1.216 |                                                                                                              | V     |
| $r_T$          | Slope resistance                           | -    | -    | 2.196 |                                                                                                              | mΩ    |
| $(dv/dt)_{cr}$ | Critical rate of rise of off-state voltage | 1000 | -    | -     | $V_D=67\% V_{DRM}$ , Linear ramp, $V_{GK}=-2V$                                                               | V/μs  |
| $I_{DRM}$      | Peak off-state current                     | -    | -    | 100   | Rated $V_{DRM}$                                                                                              | mA    |
| $I_{RRM}$      | Peak reverse current                       | -    | -    | 100   | Rated $V_{RRM}$                                                                                              | mA    |
| $I_L$          | Latching current                           | -    | 10   | -     | $T_j=25^\circ C$                                                                                             | A     |
| $I_H$          | Holding current                            | -    | 10   | -     |                                                                                                              | A     |
| $I_{GT}$       | Nominal gate trigger current               | -    | -    | 50    | $di_G/dt=100A/\mu s$ , $T_j=25^\circ C$                                                                      | A     |
| $t_{gd}$       | Gate controlled turn-on delay time         | -    | 0.9  | -     | $V_D=1500V$ , $I_{TM}=10kA$ , $di/dt=2500A/\mu s$ , $I_{FG}=50A$ , $di_G/dt=100A/\mu s$ , $T_j=25^\circ C$ . | μs    |
| $t_{gt}$       | Turn-on time                               | -    | 1.0  | -     |                                                                                                              |       |
| $R_{thJK}$     | Thermal resistance, junction to heatsink   | -    | -    | 0.065 | Double side cooled                                                                                           | K/W   |
|                |                                            | -    | -    | 0.090 | Anode side cooled                                                                                            | K/W   |
|                |                                            | -    | -    | 0.240 | Cathode side cooled                                                                                          | K/W   |
| F              | Mounting force                             | 4.5  | -    | 9.0   |                                                                                                              | kN    |
| $W_t$          | Weight                                     | -    | 120  | -     |                                                                                                              | g     |

Notes:-

1) Unless otherwise indicated  $T_j=125^\circ C$ .

## Outline Drawing & Ordering Information



### ORDERING INFORMATION

(Please quote 10 digit code as below)

| Y200C              | KC                    | ◆◆                                        | 0          |
|--------------------|-----------------------|-------------------------------------------|------------|
| Fixed<br>Type Code | Fixed<br>Outline Code | Fixed Voltage Code<br>$V_{DRM}/100$<br>25 | Fixed code |

Typical order code: Y200CKC250 – 2500V  $V_{DRM}$ , 16.5mm clamp height capsule.

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