

Thyristors type F71 are of modern design with internal spring loaded contacts, high alumina ceramic insulator and preasure welding encapsulation. Designed for use in power electronic circuits and equipment under normal operating conditions.

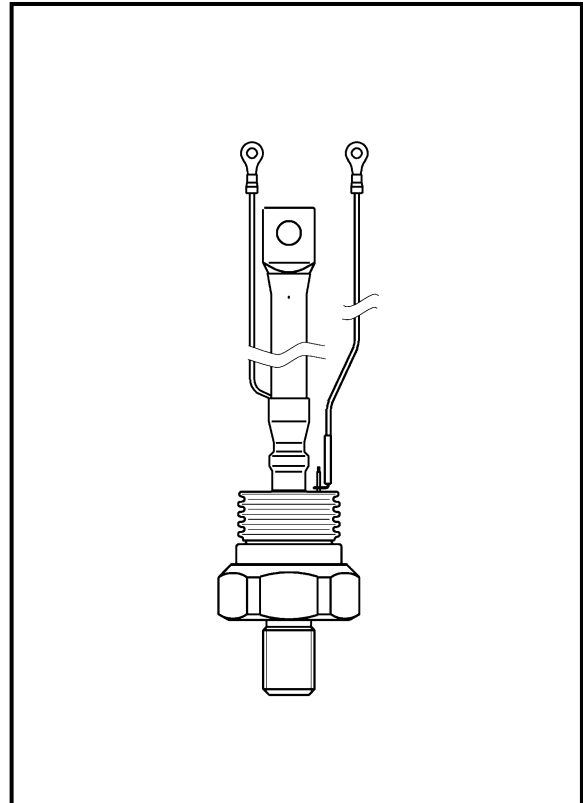
KEY PARAMETERS

| | |
|--------------------------------------|--------------------------------|
| U_{DRM}, U_{RRM} | up to 1200 V |
| $I_{T(AV)}$ | 300 A |
| I_{TSM} | 7400 A |
| du/dt^* | 500 V/μs |
| di/dt | 150 A/μs |

* maximum (non standard) value

FEATURES

- all diffused design
- guaranteed di/dt
- high current capabilities
- high surge current capabilities
- high du/dt
- low turn-off time values
- low gate current
- low thermal impedance
- tested according to IEC standards
- compact size and small weight



**Outline based on JEDEC TO-209AE
(TO-118)**

See package details for further information

APPLICATION

Designed for use in high power industrial and commercial power electronic circuits and equipment where high currents are encountered, high reliability is essential and low turn-off time value is required.

F71-300

Fast Switching Thyristor

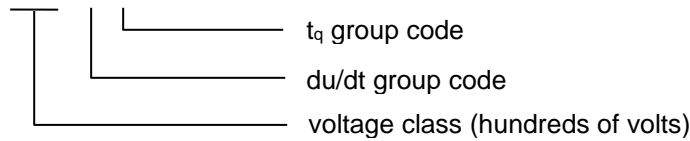


KKF71300, May 2015 version

ORDERING INFORMATION

When ordering please refer to device code builder presented below.
Please use the complete part number when ordering, quote or in any future correspondence relating to your order.

F71-300-□□-□□



Please refer to **Electrical Parameters**.

Those information, as well as any other concerning non-standard accessories e.g. stud thread, custom leads length or lead terminal connector type should be included in the order.

ELECTRICAL PARAMETERS

Voltage ratings

| Voltage class | U_{DRM}, U_{RRM} | U_{DSM}, U_{RSM} | Conditions | |
|---------------|--------------------|--------------------|--------------------|------------|
| | | | I_{DRM}, I_{RRM} | Max. T_c |
| | V | V | mA | °C |
| 06 | 600 | 700 | 33 | 70 |
| 08 | 800 | 900 | | |
| 10 | 1000 | 1100 | | |
| 12 | 1200 | 1300 | | |

du/dt and t_q group codes

| Group code | du/dt | t_q |
|------------|------------|---------|
| | V/ μ s | μ s |
| 3 | --- | 40 |
| 4 | --- | 32 |
| 5 | 320 | 25 |
| 6 | 500 | 20 |



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Electrical properties

| Parameter | Unit | Test conditions | Value |
|---|--------------|------------------------|---|
| Average on-state current | $I_{T(AV)}$ | A | 300 |
| Case temperature | T_c | °C | 70 |
| RMS on-state current | $I_{T(RMS)}$ | A | 468 |
| Surge current | I_{TSM} | A | $T_j=125^\circ\text{C}$, $U_R=0,8U_{RRM}$, $t_p=10\text{ms}$ |
| I^2t – value | I^2t | kA^2s | 274 |
| On-state voltage max. | U_{TM} | V | $T_j=25^\circ\text{C}$, $I_{TM}=1500\text{A}$ |
| Threshold voltage | $U_{T(T0)}$ | V | 1,14 |
| Slope resistance | r_T | $\text{m}\Omega$ | 0,70 |
| Latching current | I_l | mA | $T_j=25^\circ\text{C}$, $U_D=12\text{V}$ |
| Holding current | I_H | mA | $T_j=25^\circ\text{C}$, $U_D=12\text{V}$ |
| Circuit commutated turn-off time (typical) | t_q | μs | $T_j=125^\circ\text{C}$, $I_{TM}=250\text{A}$, $di_R/dt=25\text{A}/\mu\text{s}$, $du/dt=20\text{V}/\mu\text{s}$, $U_D=0,67U_{DRM}$, $U_{RM}=100\text{V}$ |
| Turn-On time (typical) | t_{on} | μs | $I_{TM}=100\text{A}$, $U_{DM}=100\text{V}$ |
| Rate of rise of on-state current-repetitive | di/dt | $\text{A}/\mu\text{s}$ | $T_j=125^\circ\text{C}$, $I_{TM}=3I_{T(AV)}$, $U_D=0,67U_{DRM}$, $f=50\text{Hz}$, $I_{GM}=1\text{A}$, $di_G/dt=1\text{A}/\mu\text{s}$ |
| Critical rate of raise of off-state voltage | du/dt | $\text{V}/\mu\text{s}$ | $T_j=125^\circ\text{C}$, $U_D=0,67U_{DRM}$ |
| Gate current to trigger | I_{GT} | mA | $T_j=25^\circ\text{C}$, $U_D=12\text{V}$ |
| Gate voltage to trigger | U_{GT} | V | $T_j=25^\circ\text{C}$, $U_D=12\text{V}$ |

Thermal properties

| Parameter | Unit | Test conditions | Value |
|--------------------------------------|---------------------------|-----------------|------------|
| Thermal resistance, junction to case | R_{thJC} | DC | 0,10 |
| Thermal resistance, case to heatsink | R_{thCS} | | 0,05 |
| Operating junction temperature | $T_{jmin} \dots T_{jmax}$ | °C | -40...+125 |
| Storage temperature | T_{stg} | °C | -40...+125 |

Mechanical properties

| Parameter | Unit | Value |
|-----------------|------|-------|
| Mounting torque | M | Nm |
| Weight | m | g |



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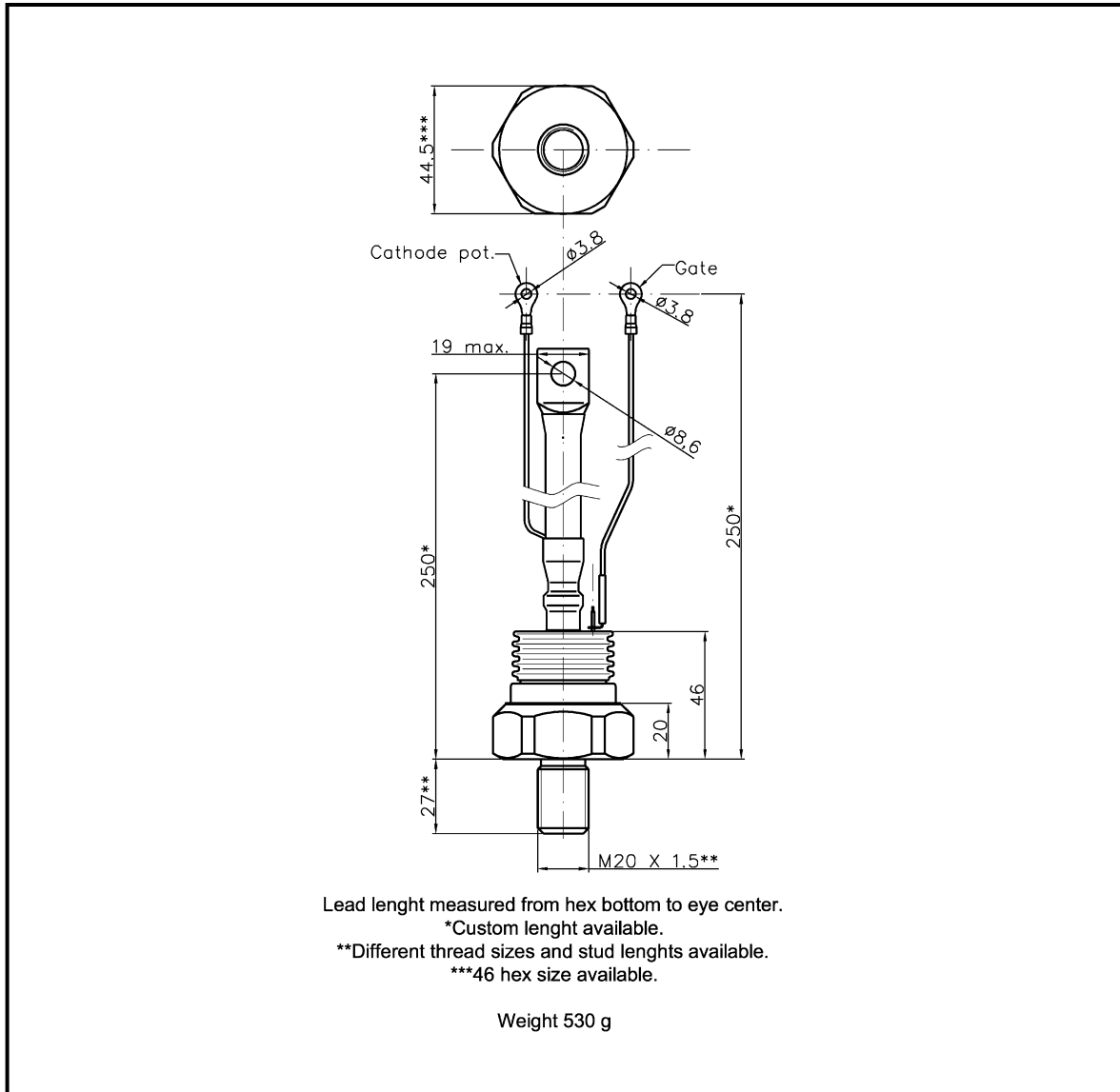
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Package details



For further package information, please contact Sales & Marketing Department. All dimensions in mm, unless stated otherwise.
Do not scale.



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HEATSINKS

 **KUBARA LAMINA** has its own proprietary range of extruded aluminium heatsinks designed to optimise the performance of our semiconductors with natural and forced air flow. High efficiency water cooled copper heatsinks are also available.

POWER ASSEMBLY CAPABILITY

 **KUBARA LAMINA** provides a support for those customers requiring more than a basic semiconductor and offers precisely assembled Power Blocks according to factory or customer standards.