

SCR Diode Power Modules are designed for use in power electronic circuits and equipment under normal operating conditions.

KEY PARAMETERS

| | |
|---|---------------------|
| U_{DRM}, U_{RRM} | up to 1600 V |
| I_{T(AV)} | 150 A |
| I_{TSM} | 4200 A |
| du/dt* | 1000 V/μs |
| di/dt | 100 A/μs |

* maximum (non standard) value



Outline

See package details for further information

APPLICATION

- High Voltage Power Supplies
- Motor Control

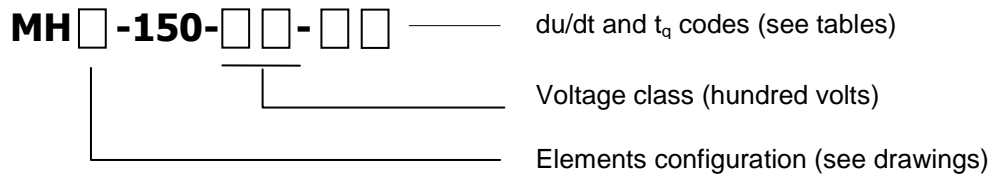
FEATURES

- electrically isolated base
- high current capabilities
- high surge current capabilities
- high rates voltages
- low thermal impedance (Aluminium Nitride Insulators)
- tested according to IEC standards
- compact size and small weight

Designed for use in high power industrial and commercial power electronic circuits and equipment where high currents are encountered and high reliability is essential.

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.



ELECTRICAL PARAMETERS**Voltage ratings**

| Voltage class | U_{RRM} | U_{RSM} | I_{RRM} |
|---------------|-----------|-----------|-----------|
| | V | V | mA |
| 04 | 400 | 500 | 20 |
| 06 | 600 | 700 | |
| 08 | 800 | 900 | |
| 10 | 1000 | 1100 | |
| 12 | 1200 | 1300 | |
| 14 | 1400 | 1500 | |
| 16 | 1600 | 1700 | |

du/dt group codes

| Group code | du/dt |
|------------|--------------------|
| | V/ μ s |
| 0 | no specified value |
| 5 | 320 |
| 6 | 500 |
| 7 | 1000 |

Electrical properties

| Parameter | | Unit | Test conditions | Value |
|---|--------------|------------------------|---|-------|
| Average on-state current | $I_{T(AV)}$ | A | | 150 |
| Case temperature | T_c | °C | | 85 |
| RMS on-state current | $I_{T(RMS)}$ | A | | 235 |
| Surge current | I_{TSM} | A | $T_j=125^\circ\text{C}$, $U_R=0,8U_{RRM}$, $t_p=10\text{ms}$ | 4200 |
| I^2t – value | I^2t | kA^2s | | 88 |
| On-state voltage max. | U_{TM} | V | $T_j=25^\circ\text{C}$, $I_{TM}=625\text{A}$ | 1,7 |
| Threshold voltage | $U_{T(T0)}$ | V | | 0,915 |
| Slope resistance | r_T | $\text{m}\Omega$ | | 1,4 |
| Latching current | I_l | mA | $T_j=25^\circ\text{C}$, $U_D=12\text{V}$ | 800 |
| Holding current | I_H | mA | $T_j=25^\circ\text{C}$, $U_D=12\text{V}$ | 160 |
| Circuit commutated turn-off time (typical) | t_q | μs | $T_j=125^\circ\text{C}$, $I_{TM}=150\text{A}$, $di_R/dt=12,5\text{A}/\mu\text{s}$, $du/dt=20\text{V}/\mu\text{s}$, $U_D=0,67U_{DRM}$, $U_{RM}=100\text{V}$ | 100 |
| Turn-On time (typical) | t_{gt} | μs | $I_{TM}=100\text{A}$, $U_{DM}=100\text{V}$ | 10 |
| Rate of rise of on-state current-repetitive | di/dt | $\text{A}/\mu\text{s}$ | $T_j=125^\circ\text{C}$, $I_{TM}=3I_{T(AV)}$, $U_D=0,67U_{DRM}$, $f=50\text{Hz}$, $I_{GM}=1\text{A}$, $di_G/dt=1\text{A}/\mu\text{s}$ | 100 |
| Critical rate of raise of off-state voltage | du/dt | $\text{V}/\mu\text{s}$ | $T_j=125^\circ\text{C}$, $U_D=0,67U_{DRM}$, | 320 |
| Gate current to trigger | I_{GT} | mA | $T_j=25^\circ\text{C}$, $U_D=12\text{V}$ | 150 |
| Gate voltage to trigger | U_{GT} | V | $T_j=25^\circ\text{C}$, $U_D=12\text{V}$ | 3 |
| RMS isolation voltage | U_{isol} | V | 1s, circuit to base, all terminals shorted | 2500 |

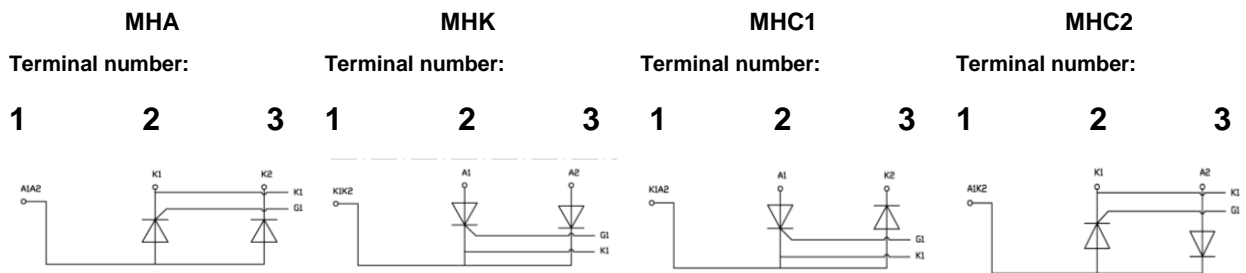
Termal properties

| Parameter | | Unit | Test conditions | Value |
|---|---------------------------|------|-----------------|------------|
| Thermal resistance, junction to case per thyristor/module | R_{thJC} | °C/W | DC | 0,17/0,085 |
| Thermal resistance, case to heatsink per thyristor/module | R_{thCh} | °C/W | | 0,1/0,05 |
| Operating junction temperature | $T_{jmin} \dots T_{jmax}$ | °C | | -40...+125 |
| Storage temperature | T_{stg} | °C | | -40...+125 |

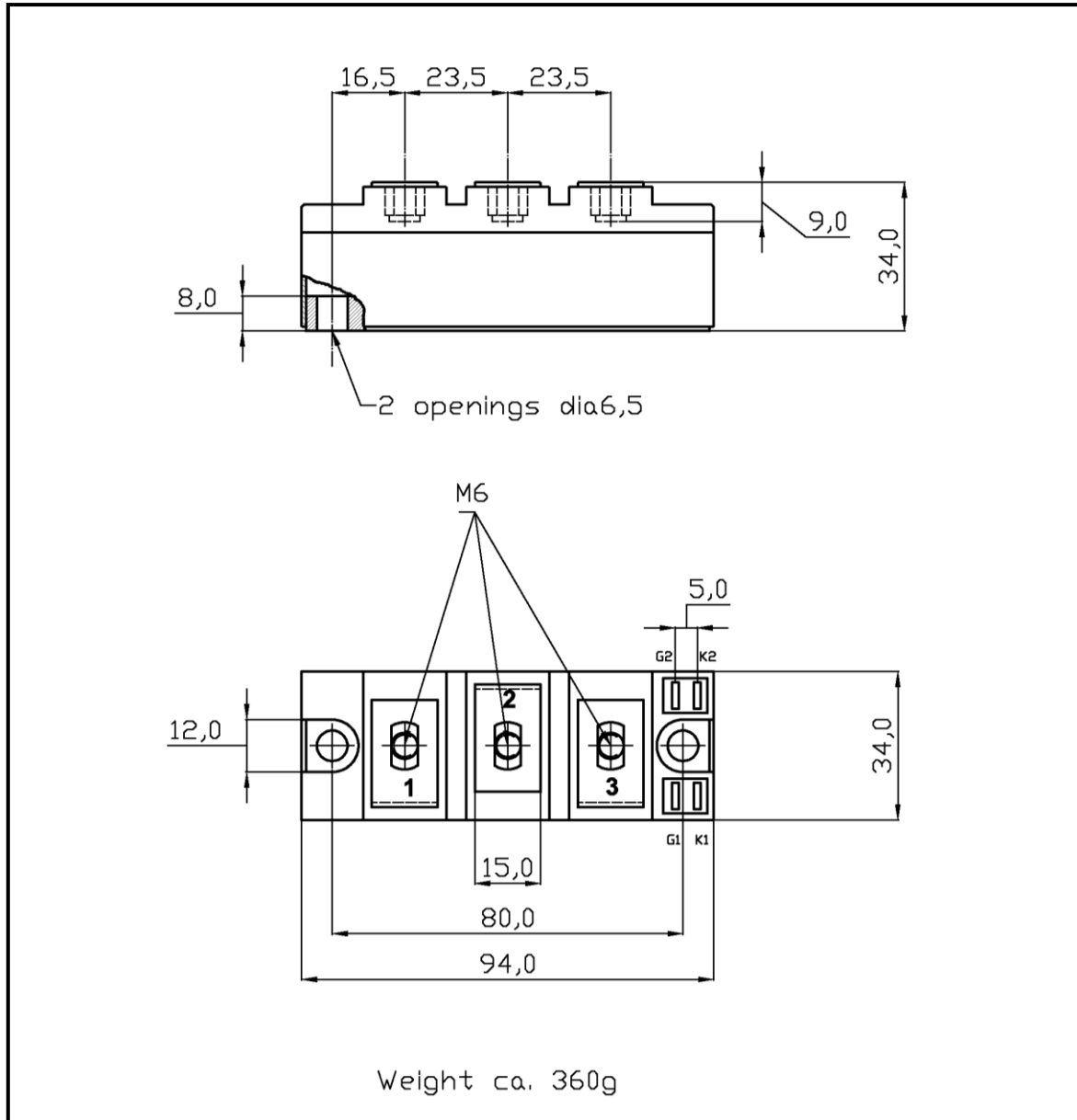
Mechanical properties

| Parameter | | Unit | Value |
|---------------------------------|----|------|-----------|
| Mounting torque (M6) | M1 | Nm | 6,00 ±15% |
| Terminal connection torque (M6) | M2 | Nm | 6,00 ±15% |
| Weight | M | g | 360 |

Cofigurations

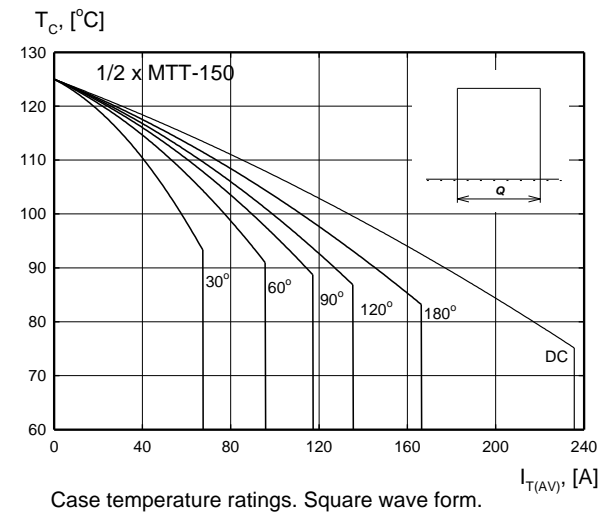
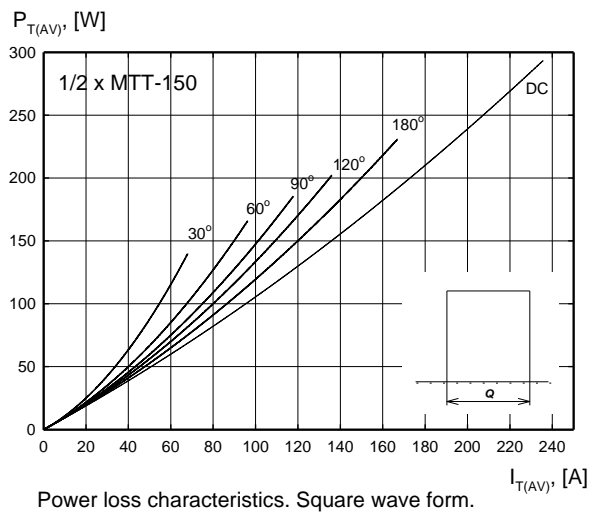
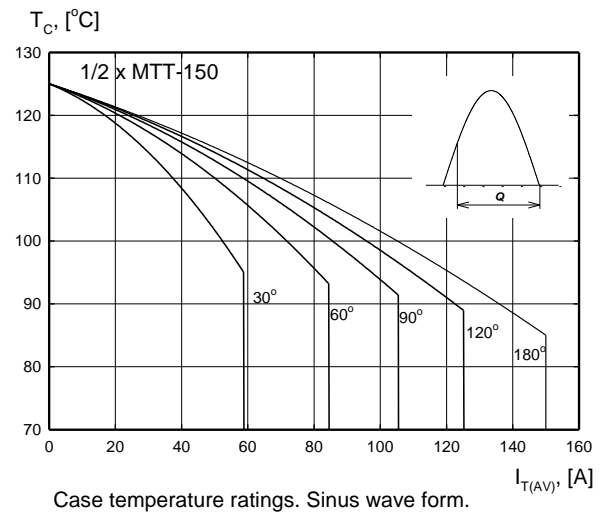
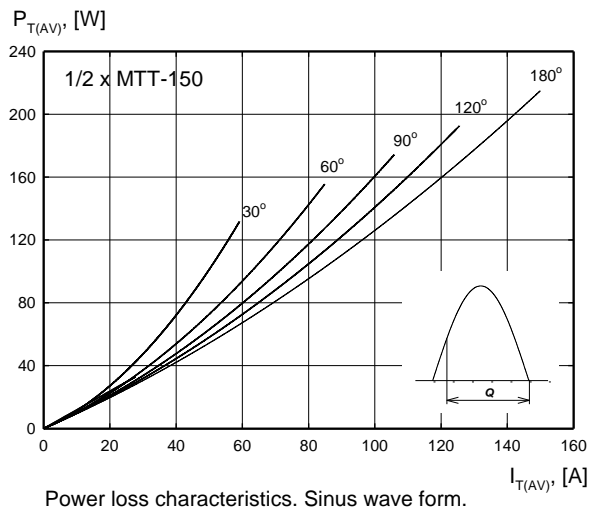


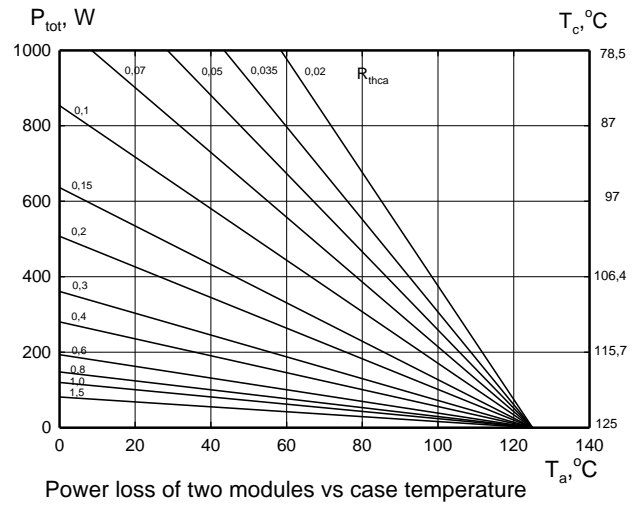
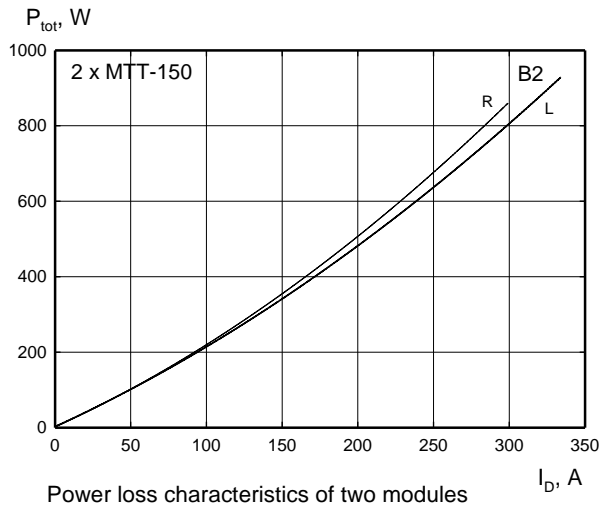
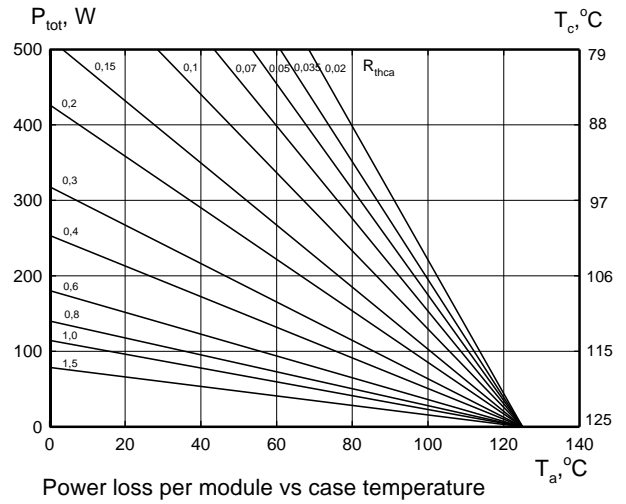
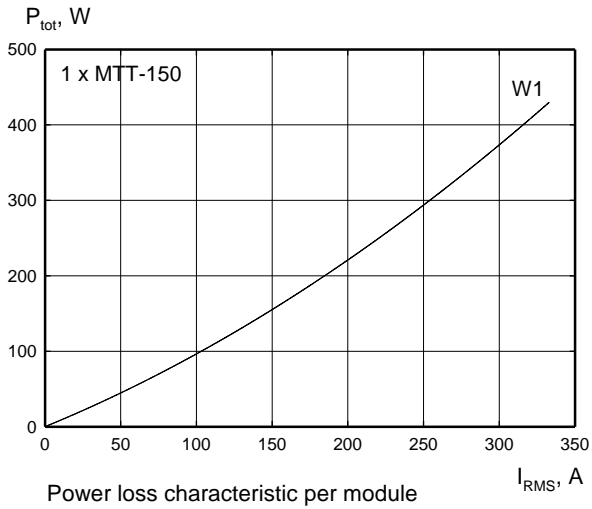
Package details

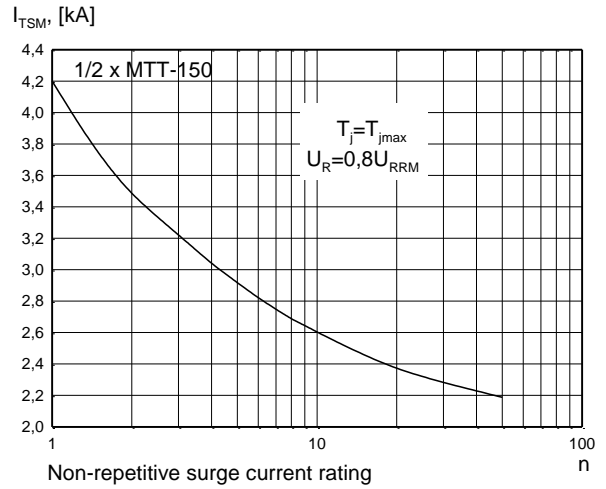
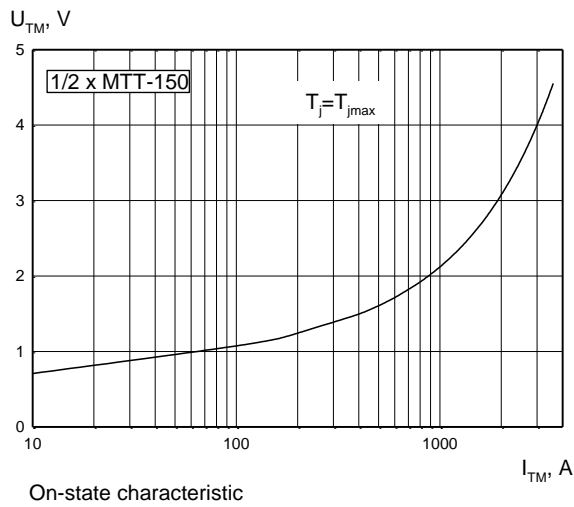
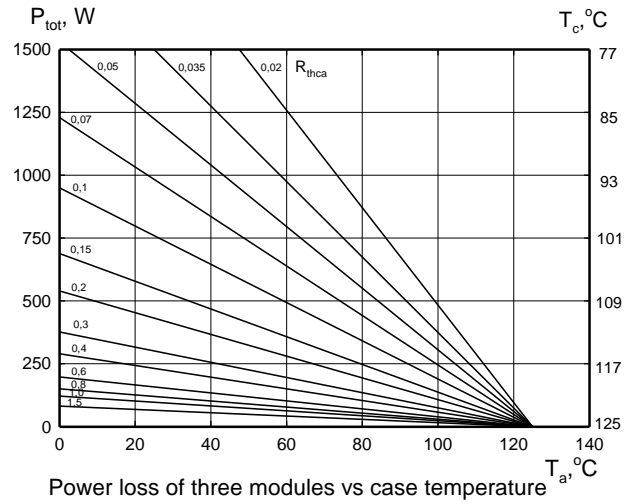
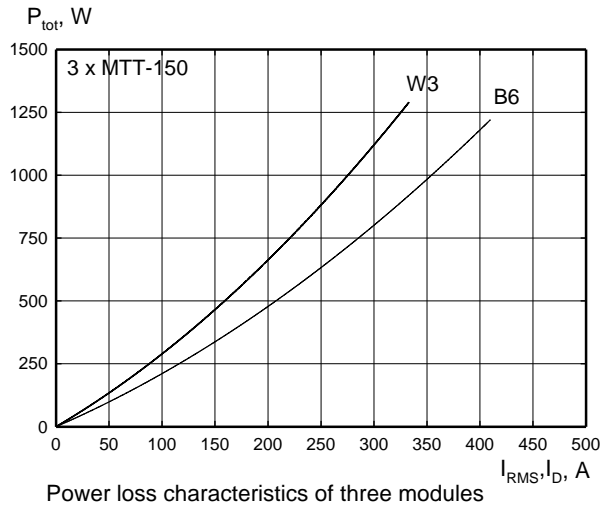


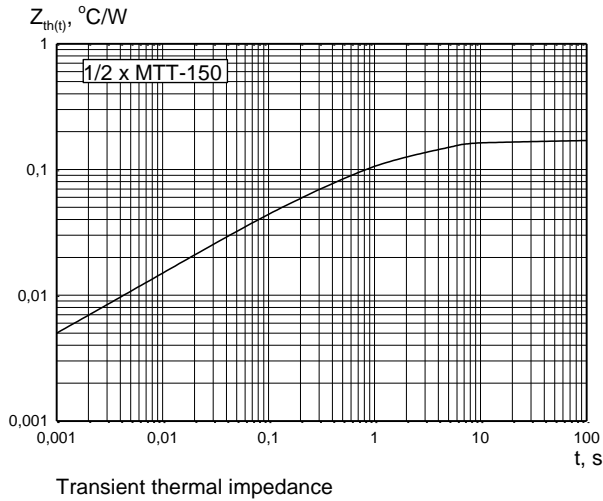
For further package information, please contact Sales & Marketing Department. All dimensions in mm, unless stated otherwise.
Do not scale.

CHARACTERISTICS

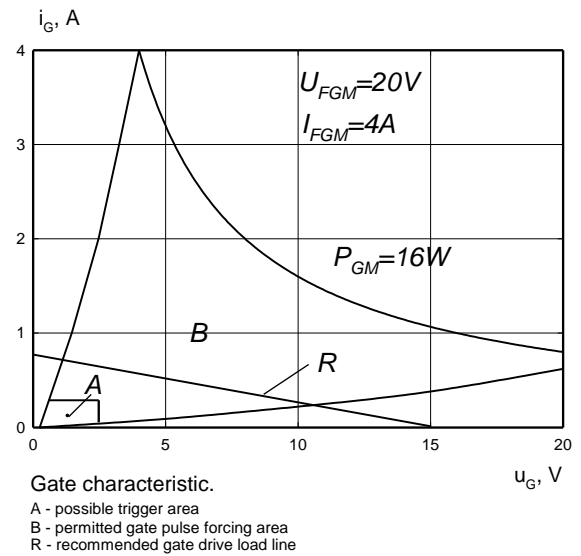
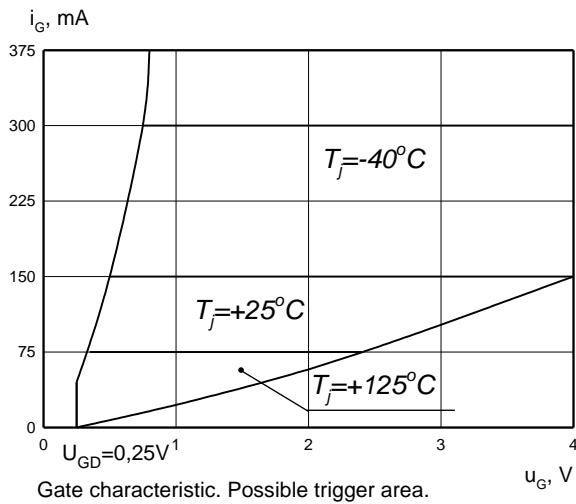








Gate characteristics



HEATSINKS

KUBARA LAMINA SA has its own proprietary range of extruded aluminium heatsinks designed to optimise the performance of our semiconductors with natural and forced air flow.

POWER ASSEMBLY CAPABILITY

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