



Thyristors type P75 are of modern design with pressure contacts, high alumina ceramic insulator and cold-welding encapsulation. Designed for use in high frequency power electronic circuits and equipment under normal operating conditions.

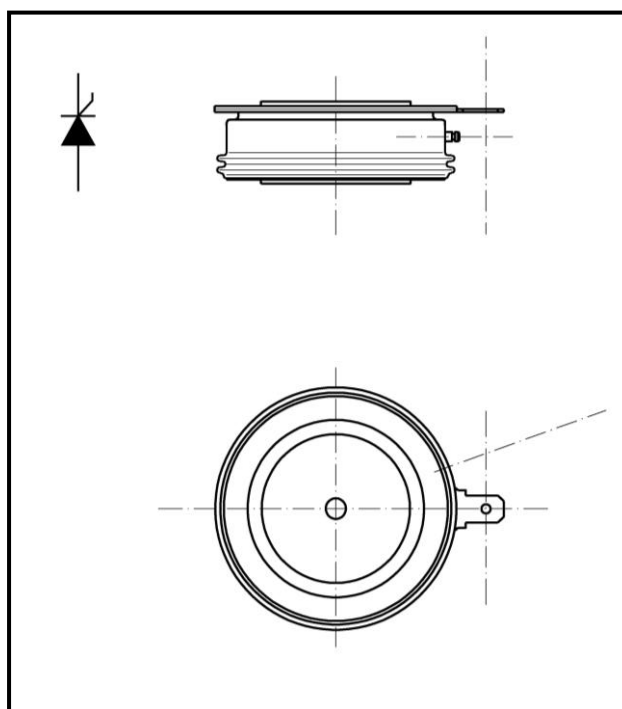
KEY PARAMETERS

U_{DRM}, U_{RRM}	up to 1200 V
$I_{T(AV)}$	700 A
I_{TSM}	9200 A
du/dt^*	1000 V/ μ s
di/dt	400 A/ μ s

* maximum (non standard) value

FEATURES

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



Outline type code: JEDEC TO-200AB
(E-puk)

See package details for further information

APPLICATION

- High Frequency Inverters
- Induction Heating Inverters
- Uninterruptable Power Supplies

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

P75-700

Inverter Type Thyristor



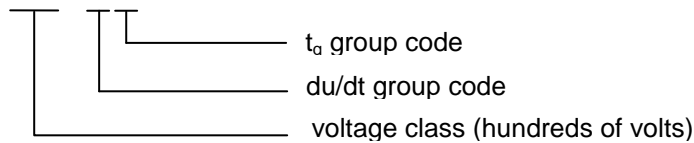
Zakłady Elektronowe
LAMINA S.A.

KKP75700, November 2006 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.

P73-700-□□-□□



This is standard device, with no dynamic parameters specified and standard accessory set.
Please refer to **Electrical Parameters** if specific dynamic demands have to be met.
Those information, as well as any other concerning non-standard accessories e.g. 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}	I_{DRM}, I_{RRM}
	V	V	mA
08	800	900	30
10	1000	1100	
12	1200	1300	

du/dt group codes

Group code	du/dt
	V/ μ s
5	320
6	500
7	1000

t_q group codes

Group code	t_q
	μ s
3	40
4	32
5	25

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Electrical properties

Parameter		Unit	Test conditions	Value
Average on-state current @ heatsink temperature	$I_{T(AV)}$	A		700
	T_h	°C		55
RMS on-state current	$I_{T(RMS)}$	A		1100
Surge current	I_{TSM}	A	$T_j=125^\circ\text{C}$, $U_R=0,8U_{RRM}$, $t_p=10\text{ms}$	9200
I^2t – value	I^2t	kA^2s		420
On-state voltage drop max.	U_{TM}	V	$T_j=25^\circ\text{C}$, $I_{TM}=1500\text{A}$	1,9
Threshold voltage	$U_{T(T0)}$	V		1,14
Slope resistance	r_T	$\text{m}\Omega$		0,475
Latching current	I_l	mA	$T_j=25^\circ\text{C}$, $U_D=12\text{V}$	800
Holding current	I_H	mA	$T_j=25^\circ\text{C}$, $U_D=12\text{V}$	200
Circuit commutated turn-off time	t_q	μs	$T_j=125^\circ\text{C}$, $I_{TM}=250\text{A}$, $di_R/dt=25\text{A}/\mu\text{s}$, $du/dt=20\text{V}/\mu\text{s}$, $U_D=0,67U_{DRM}$, $U_{RM}=100\text{V}$	25, 32, 40
Turn-On time (typical)	t_{on}	μs	$I_{TM}=100\text{A}$, $U_{DM}=100\text{V}$	2
Rate of rise of on-state current-repetitive	di/dt	$\text{A}/\mu\text{s}$	$T_j=125^\circ\text{C}$, $I_{TM}=3I_{T(AV)}$, $U_D=0,67U_{DRM}$, $f=50\text{Hz}$, $I_{GM}=1\text{A}$, $di_G/dt=1\text{A}/\mu\text{s}$	400
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 – 1000 (see du/dt group codes)
Gate current to trigger	I_{GT}	mA	$T_j=25^\circ\text{C}$, $U_D=12\text{V}$	300
Gate voltage to trigger	U_{GT}	V	$T_j=25^\circ\text{C}$, $U_D=12\text{V}$	3

Thermal properties

Parameter		Unit	Test conditions	Value
Thermal resistance, junction to heatsink	R_{thJH}	°C/W	two sided, DC	0,04
Thermal resistance, case to heatsink	R_{thCH}	°C/W	two sided	0,01
Operating junction temperature	$T_{jmin} \dots T_{jmax}$	°C		-40...+125
Storage temperature	T_{stg}	°C		-40...+125

Mechanical properties

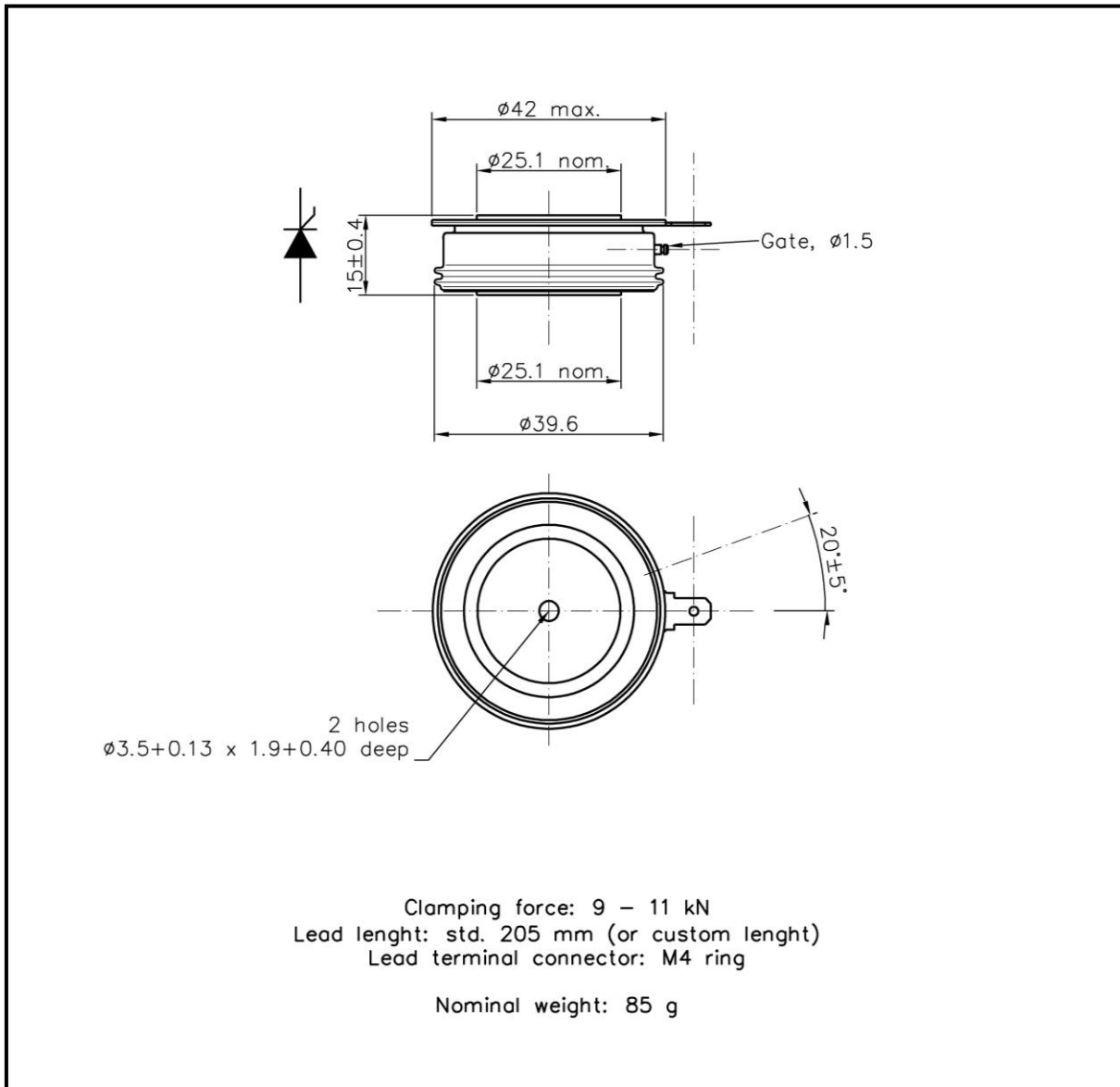
Parameter		Unit	Value
Clamping force	F_M	kN	9,0 ... 11,0
Weight	m	g	85

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Package details



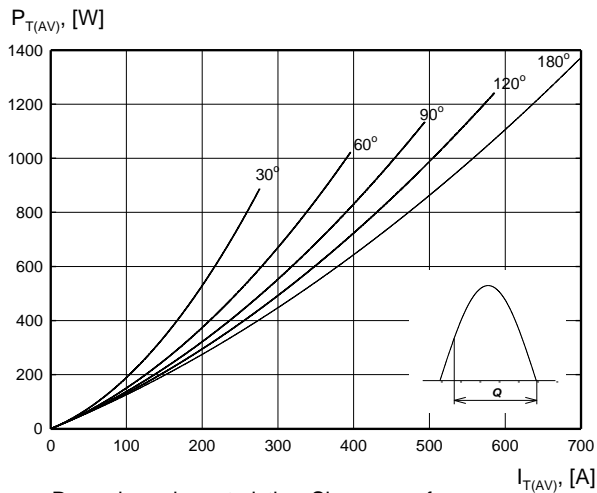
For further package information, please contact Sales & Marketing Department. All dimensions in mm, unless stated otherwise.
Do not scale.

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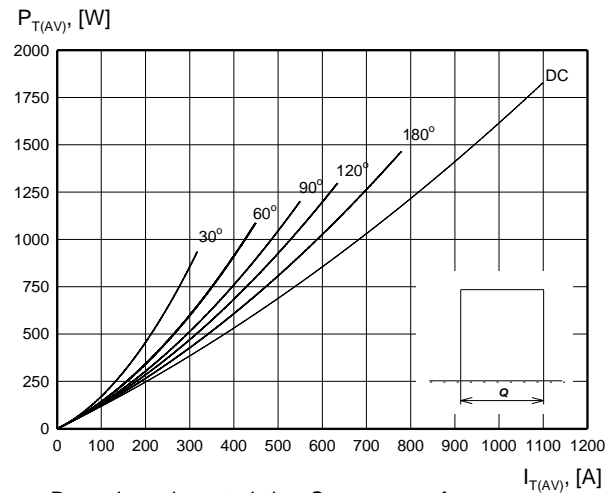
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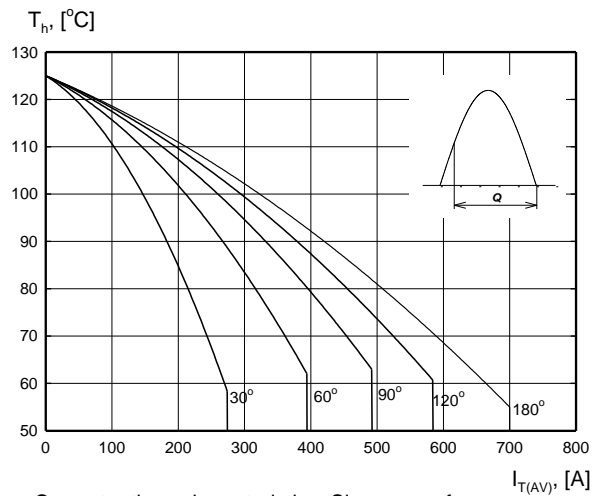
CHARACTERISTICS



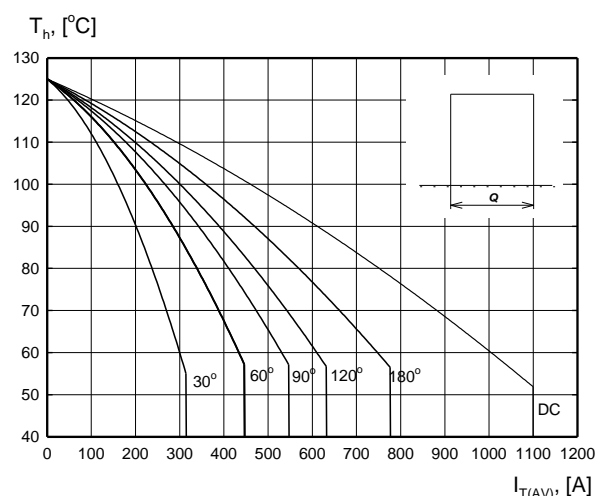
Power loss characteristics. Sinus wave form.



Power loss characteristics. Square wave form.



Current ratings characteristics. Sinus wave form.



Current ratings characteristics. Square wave form.

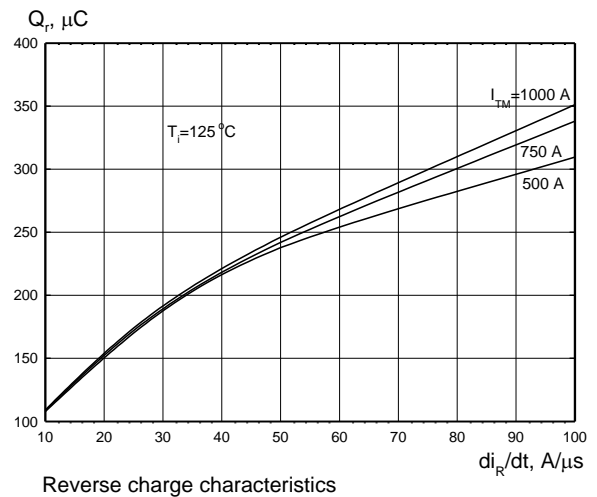
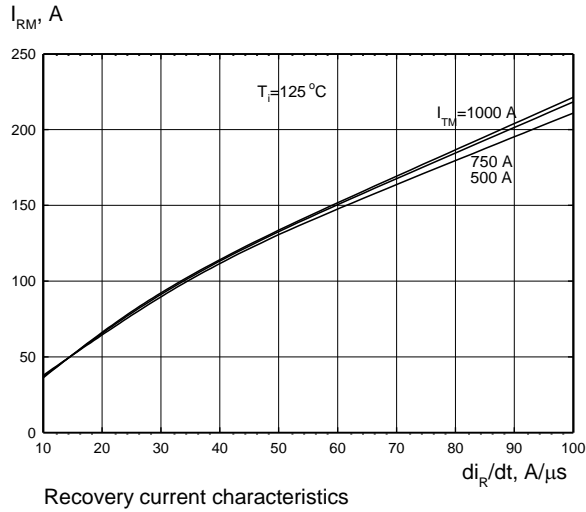
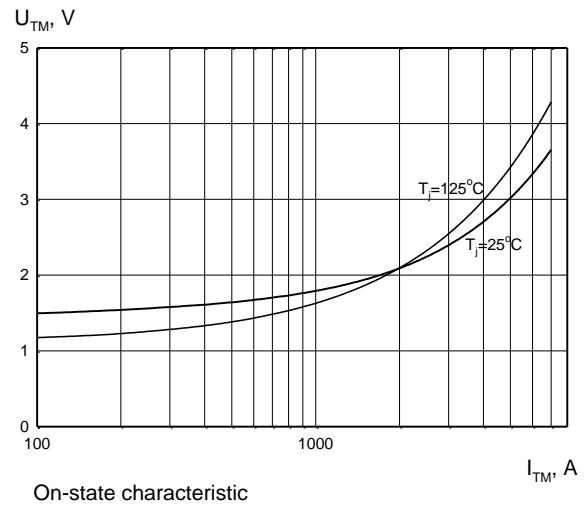
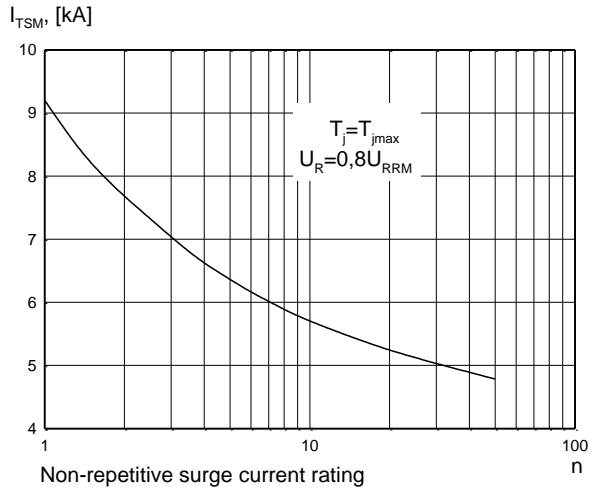
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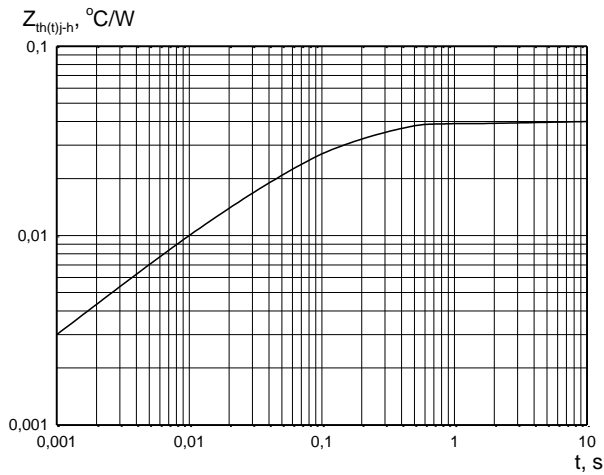
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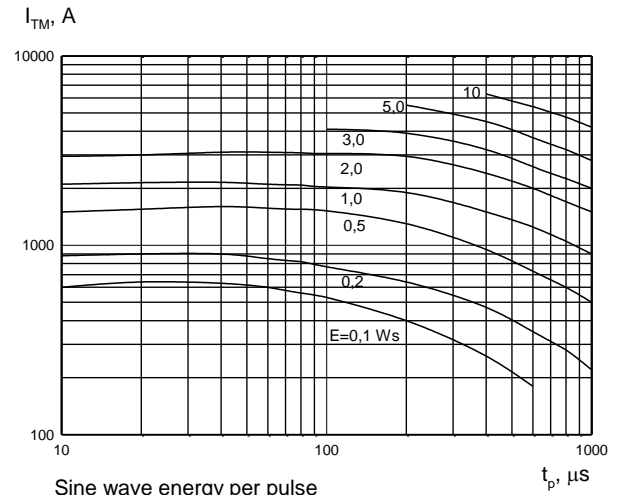
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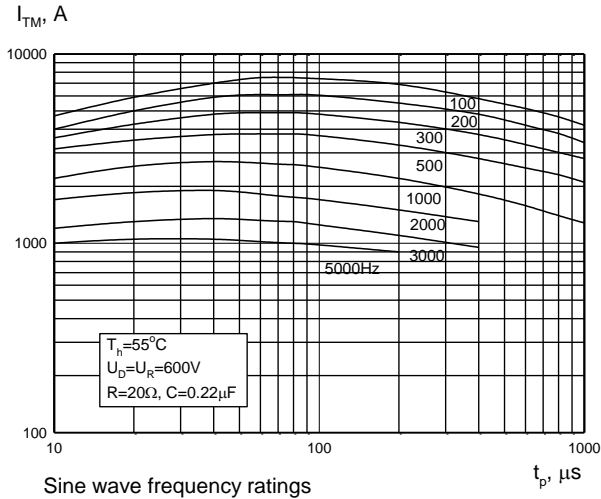
Thermal Impedance and Frequency characteristics



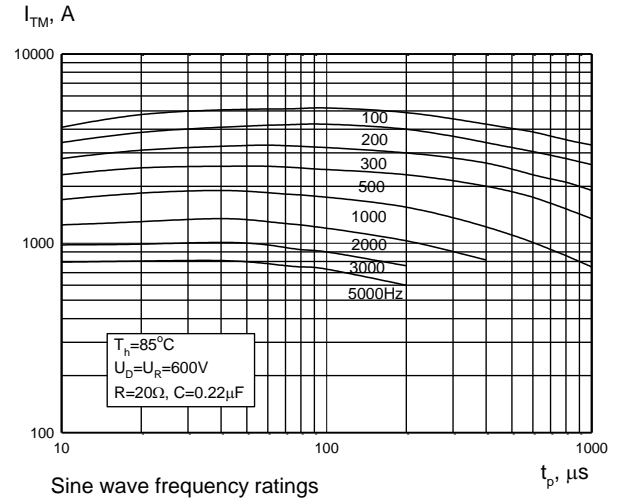
Transient thermal impedance



Sine wave energy per pulse



Sine wave frequency ratings



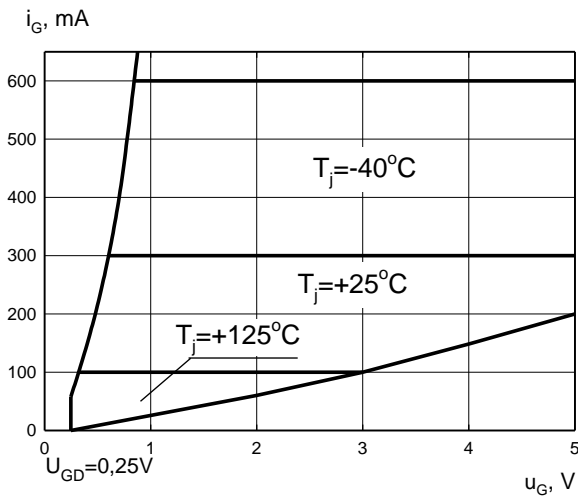
Sine wave frequency ratings

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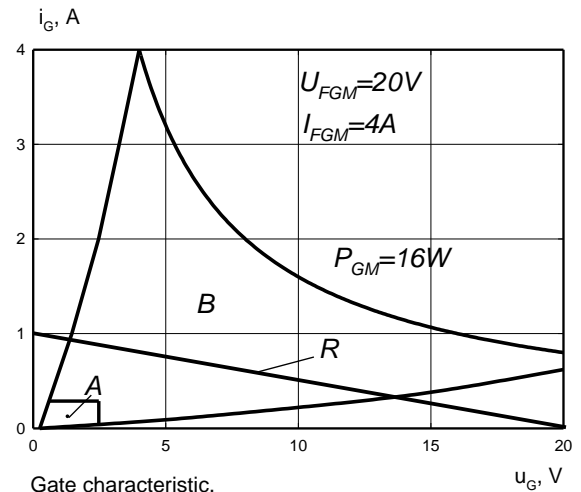
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Gate characteristics



Gate characteristic. Possible trigger area.



Gate characteristic.

A - possible trigger area
B - permitted gate pulse forcing area
R - recommended gate drive load line

HEATSINKS

LAMINA S.I. 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.

DEVICE CLAMPS

Disc devices require the correct clamping force to ensure their best operation. LAMINA S.I. offers a wide selection of clamps to suit all of our manufactured devices.

POWER ASSEMBLY CAPABILITY

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