

Dual SCR 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
$I_{T(AV)}$	300 A
$I_{TSM}$	8000 A
$du/dt^*$	1000 V/ $\mu$ s
$di/dt$	150 A/ $\mu$ s

\* maximum (non standard) value



### Outline

See package details for further information

### APPLICATION

- High Voltage Power Supplies
- Motor Control

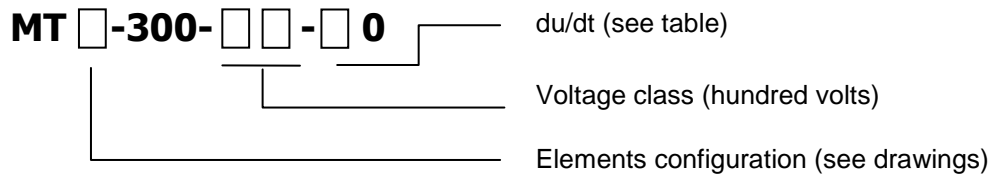
### FEATURES

- 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.



# MTC-300, MTK-30, MTA-300 Dual SCR Power Module

**LAMINA S.I.**

KKMTx300, August 2009 version

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## ELECTRICAL PARAMETERS

### Voltage ratings

Voltage class	$U_{RRM}$	$U_{RSM}$	$I_{RRM}$
	V	V	mA
04	400	500	30
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/ $\mu$ s
0	no specified value
5	320
6	500
7	1000

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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		85
RMS on-state current	$I_{T(RMS)}$	A		470
Surge current	$I_{TSM}$	A	$T_j=125^\circ\text{C}$ , $U_R=0,8U_{RRM}$ , $t_p=10\text{ms}$	8000
$I^2t$ – value	$I^2t$	$\text{kA}^2\text{s}$		320
On-state voltage max.	$U_{TM}$	V	$T_j=25^\circ\text{C}$ , $I_{TM}=1500\text{A}$	1,4
Threshold voltage	$U_{T(T0)}$	V		0,70
Slope resistance	$r_T$	$\text{m}\Omega$		0,55
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 (typical)	$t_q$	$\mu\text{s}$	$T_j=125^\circ\text{C}$ , $I_{TM}=250\text{A}$ , $di_R/dt=25\text{A}/\mu\text{s}$ , $du/dt=20\text{V}/\mu\text{s}$ , $U_D=0,67U_{DRM}$ , $U_{RM}=100\text{V}$	150
Turn-On time (typical)	$t_{gt}$	$\mu\text{s}$	$I_{TM}=100\text{A}$ , $U_{DM}=100\text{V}$	7
Rate of rise of on-state current-repetitive	$di/dt$	$\text{A}/\mu\text{s}$	$T_j=125^\circ\text{C}$ , $I_{TM}=3I_{T(AV)}$ , $U_D=0,67U_{DRM}$ , $f=50\text{Hz}$ , $I_{GM}=1\text{A}$ , $di_G/dt=1\text{A}/\mu\text{s}$	150
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
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

### Thermal properties

Parameter		Unit	Test conditions	Value
Thermal resistance, junction to case per thyristor/module	$R_{thJC}$	°C/W	DC	0,11/0,055
Thermal resistance, case to heatsink per thyristor/module	$R_{thCh}$	°C/W		0,04/0,02
Operating junction temperature	$T_{jmin} \dots T_{jmax}$	°C		-40...+125
Storage temperature	$T_{stg}$	°C		-40...+125

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# MTC-300, MTK-30, MTA-300

## Dual SCR Power Module

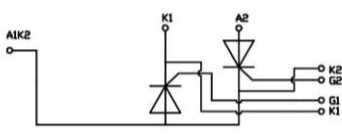
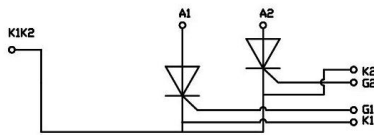
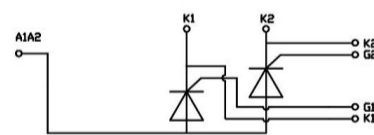
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### Mechanical properties

Parameter		Unit	Value
Mounting torque (M6)	M1	Nm	5,00 ±15%
Terminal connection torque (M8)	M2	Nm	12,00 ±10%
Weight	M	g	840

### Cofigurations

MTC	MTK	MTA
Terminal number: <b>3      2      1</b>	Terminal number: <b>3      2      1</b>	Terminal number: <b>3      2      1</b>
		

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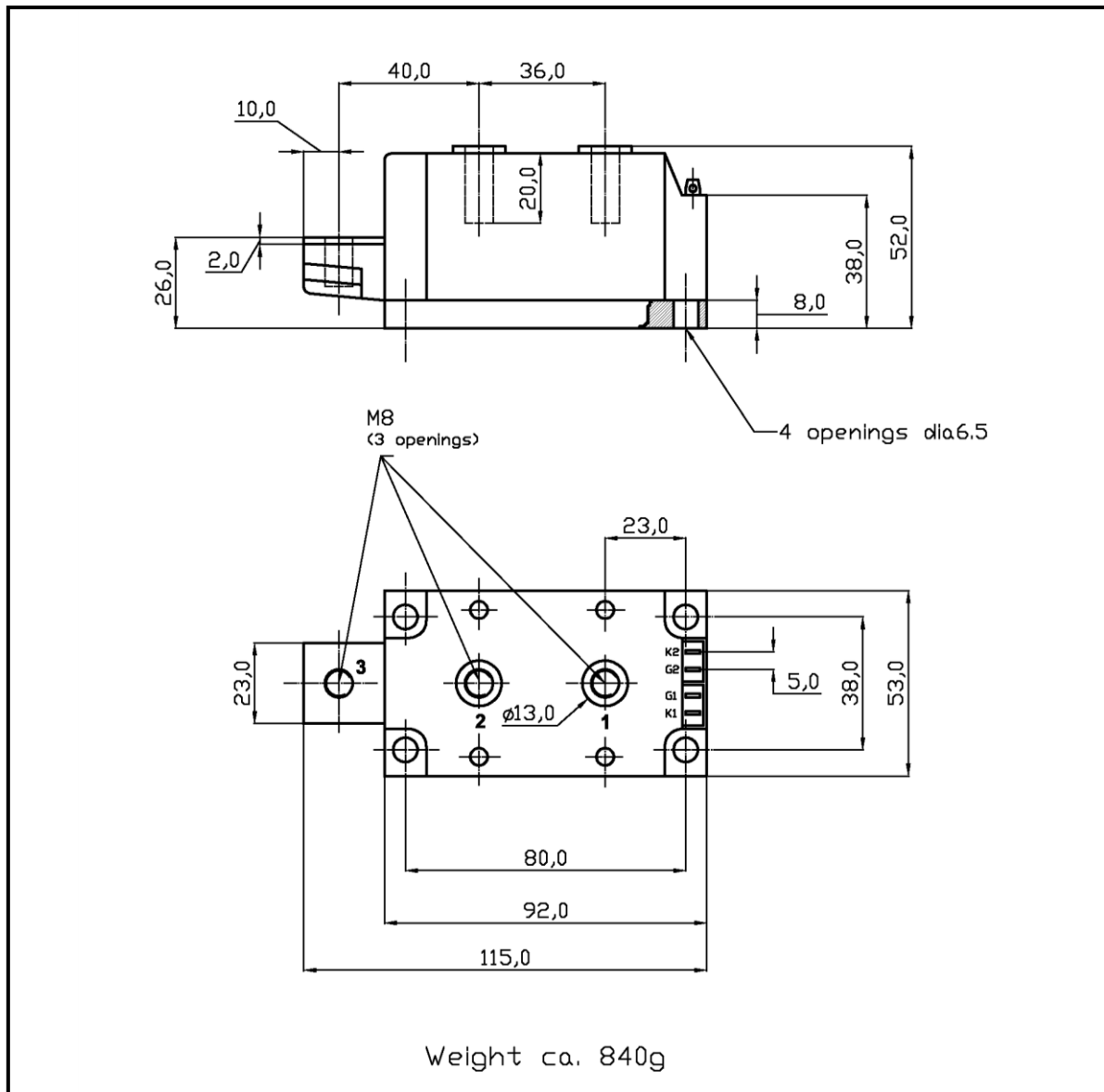
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# MTC-300, MTK-30, MTA-300 Dual SCR Power Module

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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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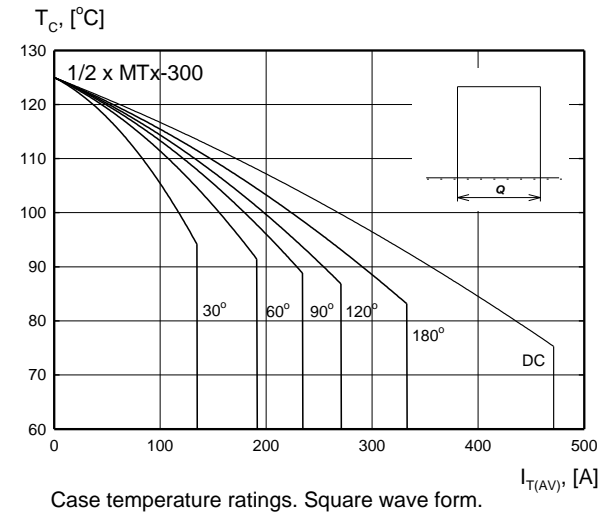
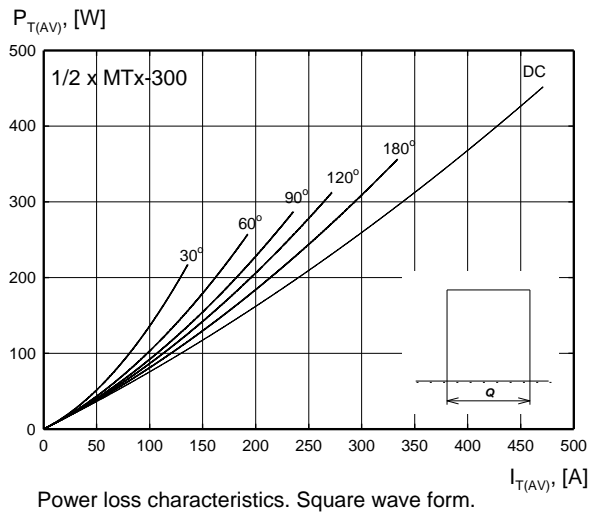
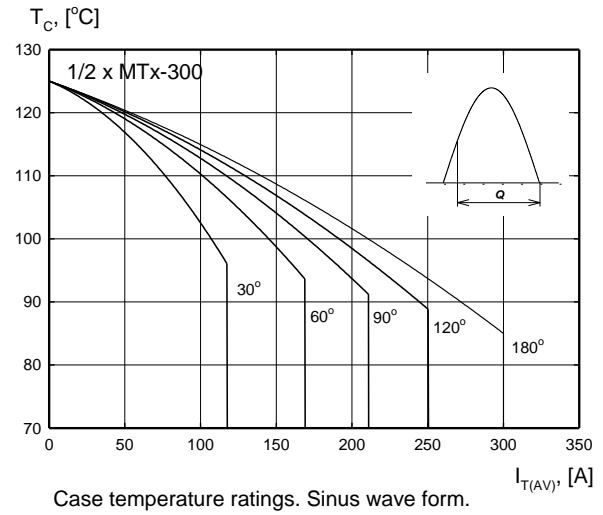
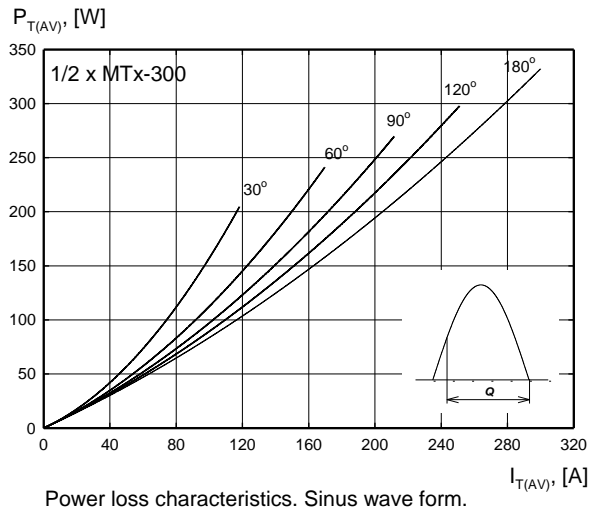
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## CHARACTERISTICS



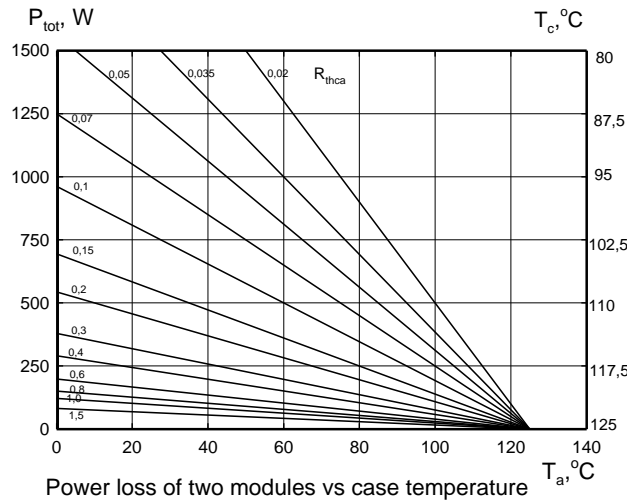
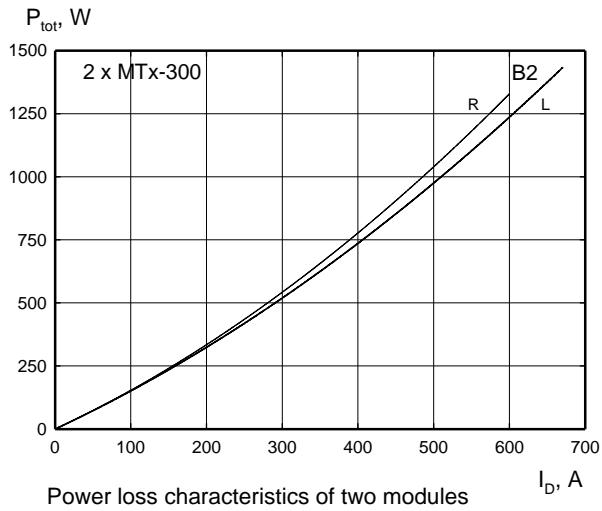
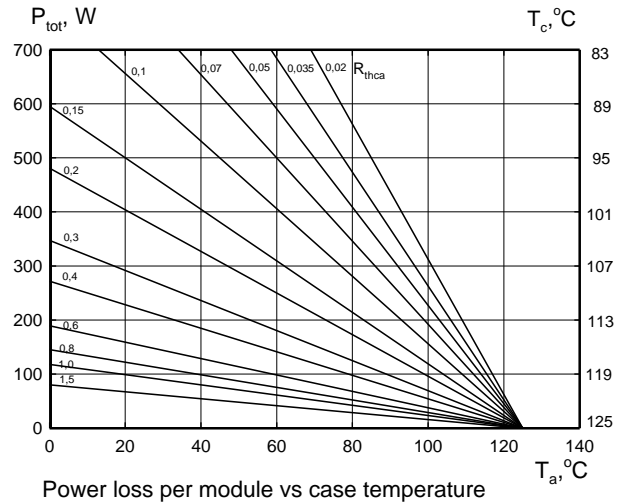
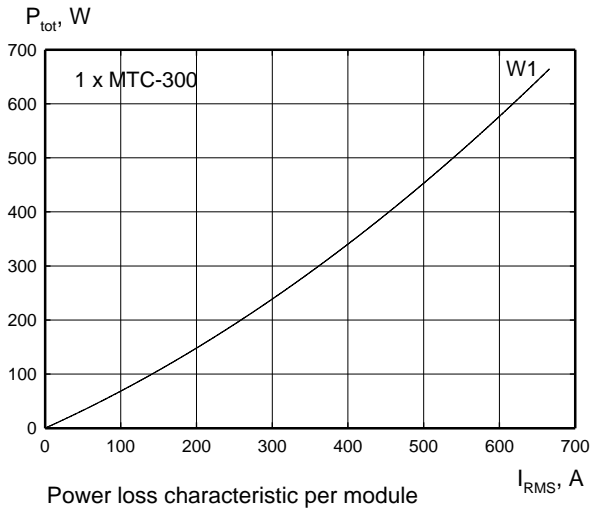
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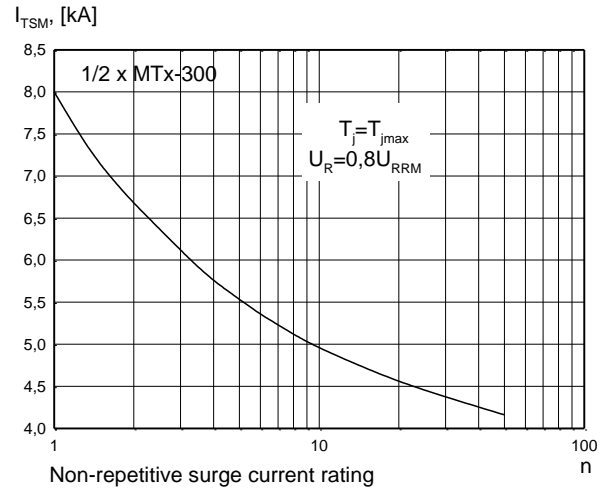
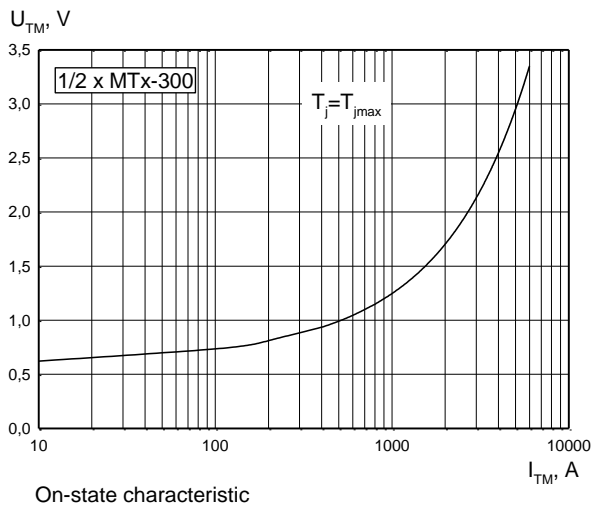
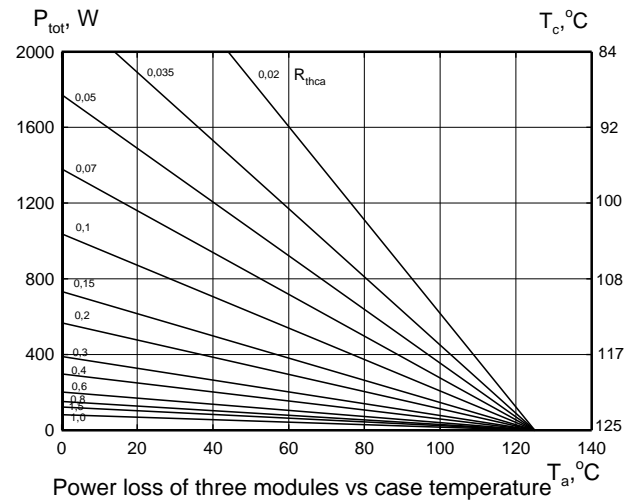
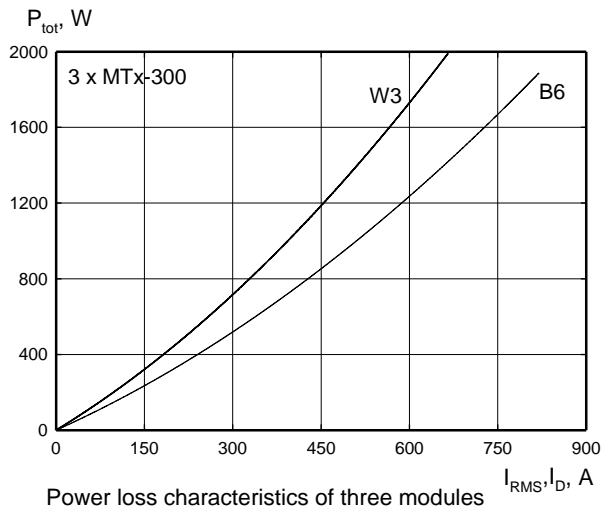
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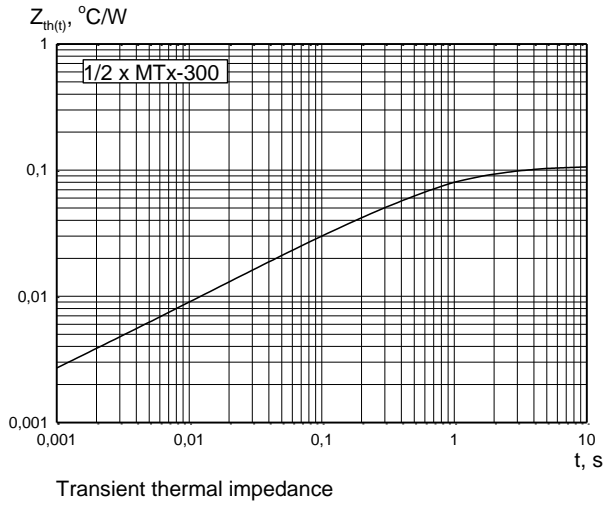
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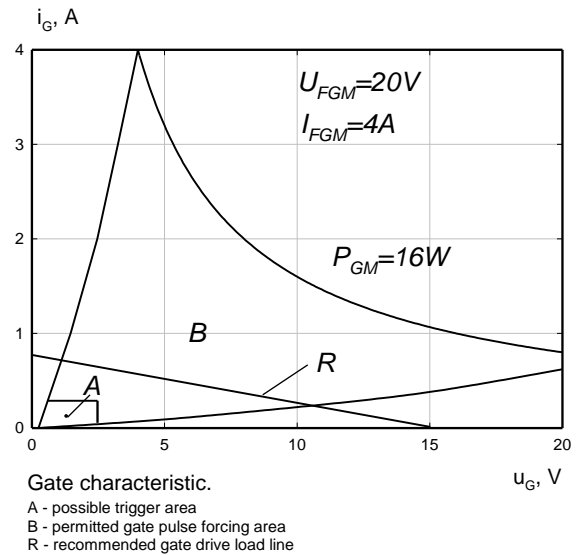
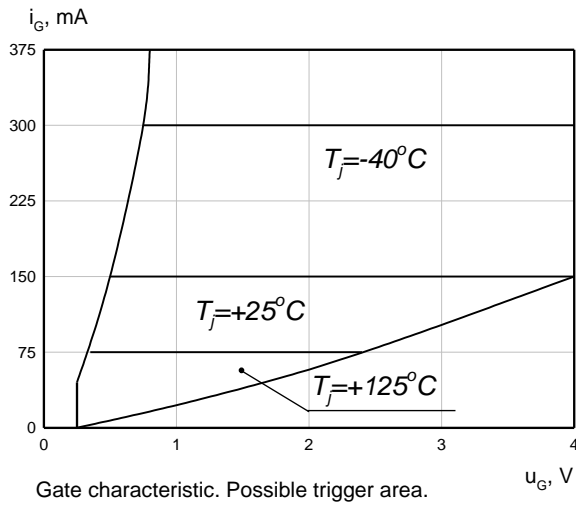
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## GATE CHARACTERISTICS



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## 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.

## 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.

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