

Thyristors type T52 are of modern design with internal spring loaded contacts, glass-to-metal seal and pressure welding encapsulation. Designed for use in power electronic circuits and equipment under normal operating conditions.

**KEY PARAMETERS**

<b><math>U_{DRM}, U_{RRM}</math></b>	<b>up to 1200 V</b>
<b><math>I_{T(AV)}</math></b>	<b>80 A</b>
<b><math>I_{TSM}</math></b>	<b>1450 A</b>
<b><math>du/dt^*</math></b>	<b>1000 V/<math>\mu</math>s</b>
<b><math>di/dt</math></b>	<b>100 A/<math>\mu</math>s</b>

\* maximum (non standard) value

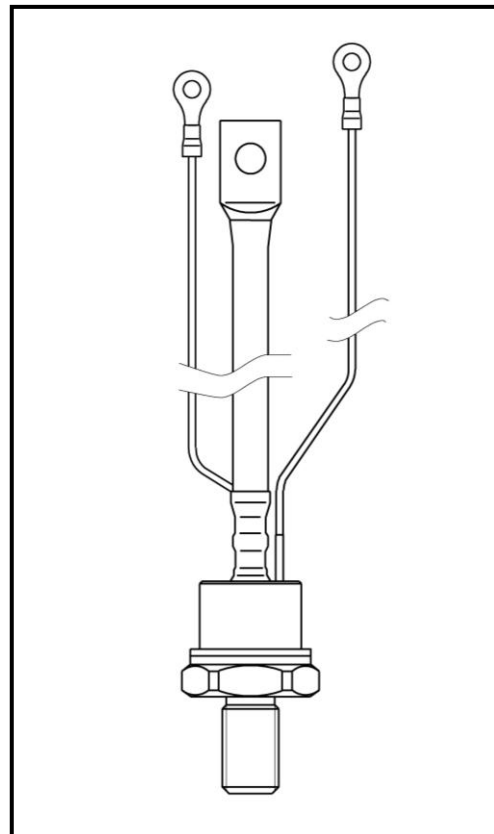
**FEATURES**

- all diffused design
- high current capabilities
- high surge current capabilities
- high rates voltages
- high  $du/dt$
- low gate current
- dynamic gate
- low thermal impedance
- tested according to IEC standards
- compact size and small weight

**APPLICATION**

- High Power Drives
- DC Motor Control
- High Voltage Power Supplies

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



**Outline type code: JEDEC TO-209AC  
(TO-94)**

See package details for further information

**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.

**T52-80-□□**



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. stud thread, custom leads length or lead terminal connector type should be included in the order.

**ELECTRICAL PARAMETERS**

**Voltage ratings**

Voltage class	$U_{DRM}, U_{RRM}$	$U_{DSM}, U_{RSM}$	$I_{DRM}, I_{RRM}$
	V	V	mA
04	400	500	10
06	600	700	
08	800	900	
10	1000	1100	
12	1200	1300	

**du/dt group codes**

Group code	du/dt
	V/μs
0	no specified value
4	200
5	320
6	500
7	1000

**Electrical properties**

Parameter		Unit	Test conditions	Value
Average on-state current	$I_{T(AV)}$	A		80
Case temperature	$T_c$	°C		90
RMS on-state current	$I_{T(RMS)}$	A		125
Surge current	$I_{TSM}$	A	$T_j=125^\circ\text{C}$ , $U_R=0,8U_{RRM}$ , $t_p=10\text{ms}$	1450
$I^2t$ – value	$I^2t$	$\text{kA}^2\text{s}$		10,5
On-state voltage max.	$U_{TM}$	V	$T_j=25^\circ\text{C}$ , $I_{TM}=500\text{A}$	2,20
Threshold voltage	$U_{T(T0)}$	V		0,93
Slope resistance	$r_T$	$\text{m}\Omega$		3,20
Latching current	$I_l$	mA	$T_j=25^\circ\text{C}$ , $U_D=12\text{V}$	600
Holding current	$I_H$	mA	$T_j=25^\circ\text{C}$ , $U_D=12\text{V}$	140
Circuit commutated turn-off time (typical)	$t_q$	$\mu\text{s}$	$T_j=125^\circ\text{C}$ , $I_{TM}=50\text{A}$ , $di_R/dt=5\text{A}/\mu\text{s}$ , $du/dt=20\text{V}/\mu\text{s}$ , $U_D=0,67U_{DRM}$ , $U_{RM}=100\text{V}$	100
Turn-On time (typical)	$t_{on}$	$\mu\text{s}$	$I_{TM}=100\text{A}$ , $U_{DM}=100\text{V}$	7
Rate of rise of on-state current-repetitive	$di/dt$	$\text{A}/\mu\text{s}$	$T_j=125^\circ\text{C}$ , $I_{TM}=3I_{T(AV)}$ , $U_D=0,67U_{DRM}$ , $f=50\text{Hz}$ , $I_{GM}=1\text{A}$ , $di_G/dt=1\text{A}/\mu\text{s}$	100
Critical rate of raise of off-state voltage	$du/dt$	$\text{V}/\mu\text{s}$	$T_j=125^\circ\text{C}$ , $U_D=0,67U_{DRM}$	200 - 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

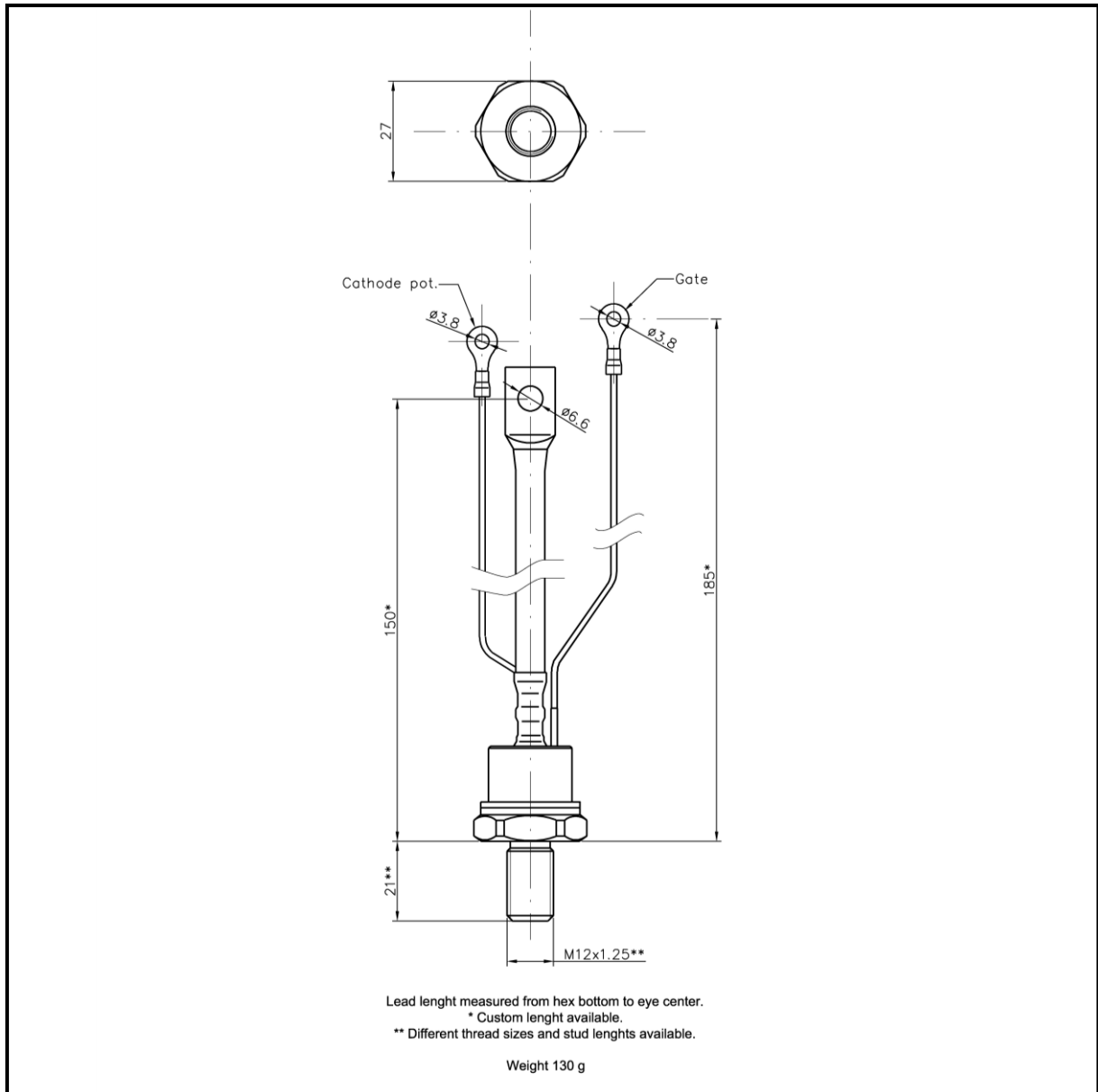
**Thermal properties**

Parameter		Unit	Test conditions	Value
Thermal resistance, junction to case	$R_{thJC}$	°C/W	DC	0,25
Thermal resistance, case to heatsink	$R_{thCS}$	°C/W		0,12
Operating junction temperature	$T_{jmin} \dots T_{jmax}$	°C		-40...+125
Storage temperature	$T_{stg}$	°C		-40...+125

**Mechanical properties**

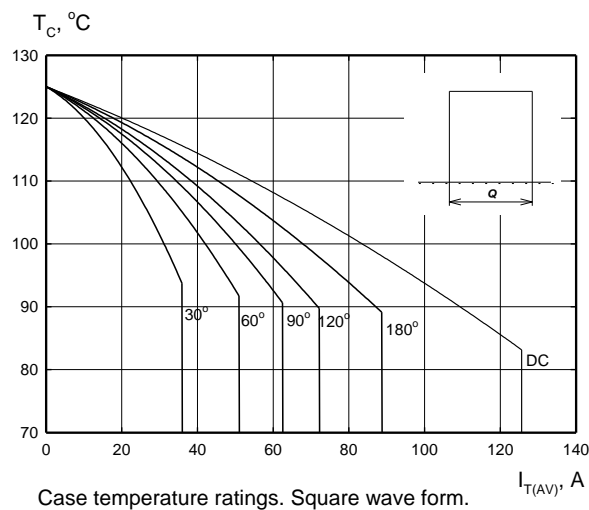
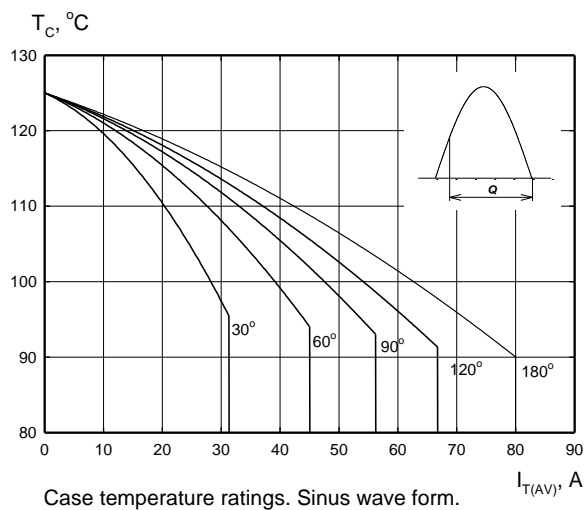
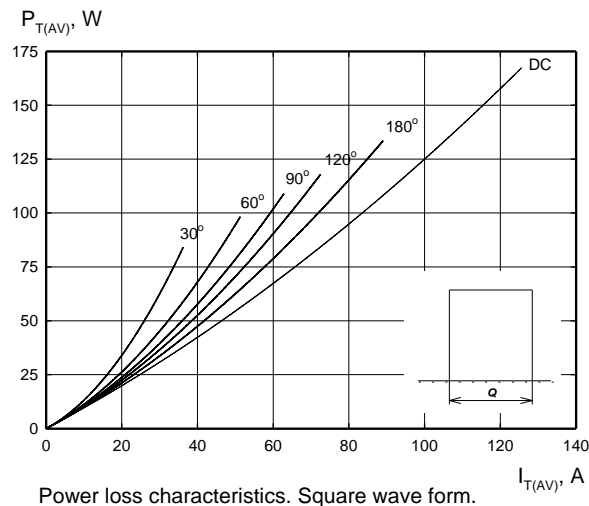
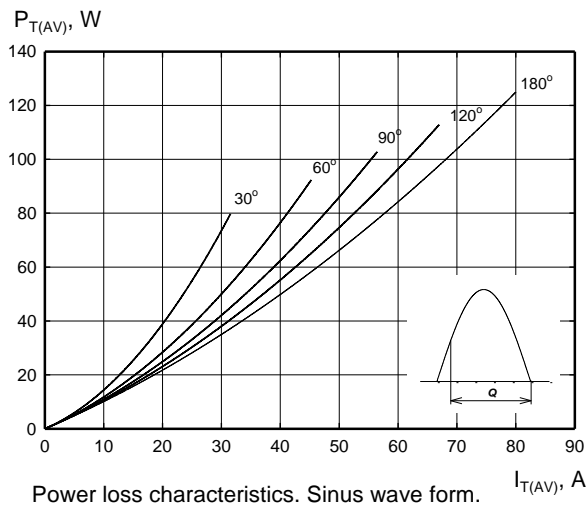
Parameter		Unit	Value
Mounting torque	M	Nm	14 ... 17
Weight	m	g	130

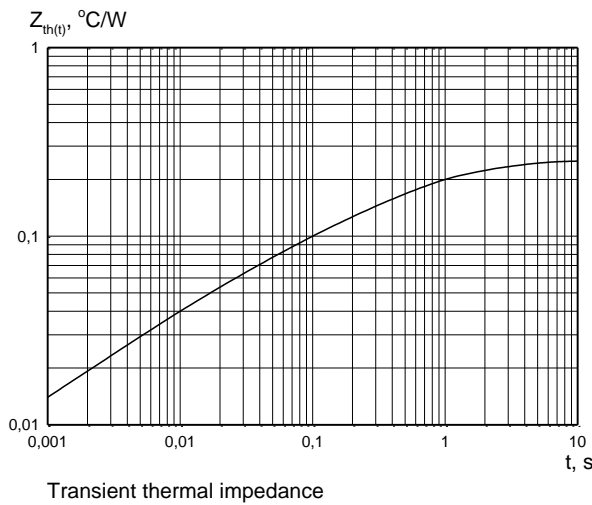
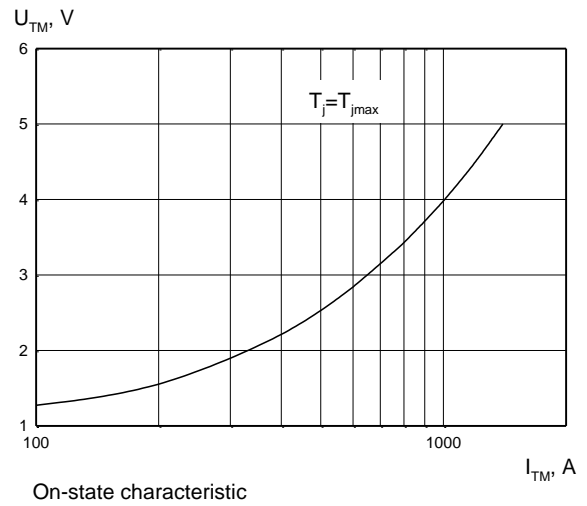
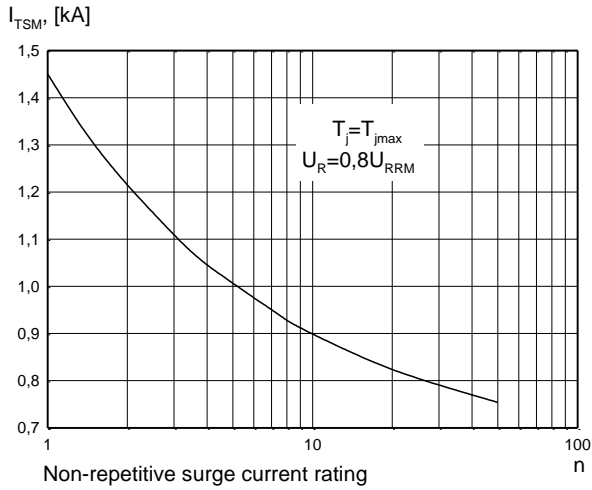
**Package details**



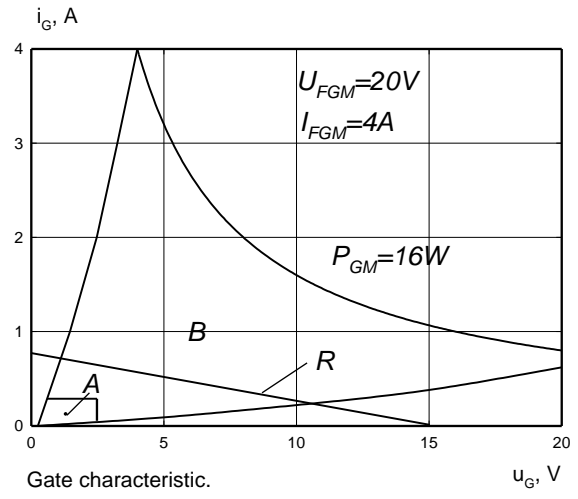
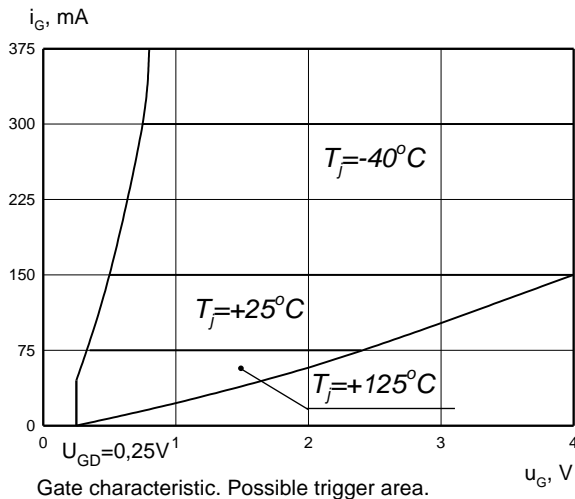
For further package information, please contact Sales & Marketing Department. All dimensions in mm, unless stated otherwise.  
Do not scale.

**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. High efficiency water cooled copper heatsinks are also available.

**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.