

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

U_{DRM}, U_{RRM}	up to 1200 V
$I_{T(AV)}$	80 A
I_{TSM}	1450 A
du/dt^*	1000 V/μs
di/dt	100 A/μs

* maximum (non standard) value

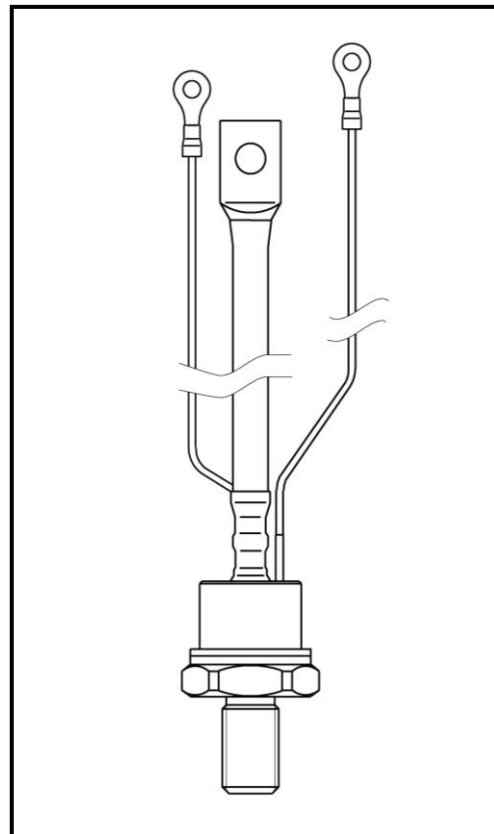
FEATURES

- 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	kA^2s		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	μs	$T_j=125^\circ\text{C}$, $I_{TM}=50\text{A}$, $di_R/dt=5\text{A}/\mu\text{s}$, $du/dt=20\text{V}/\mu\text{s}$, $U_D=0,67U_{DRM}$, $U_{RM}=100\text{V}$	100
Turn-On time (typical)	t_{on}	μs	$I_{TM}=100\text{A}$, $U_{DM}=100\text{V}$	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

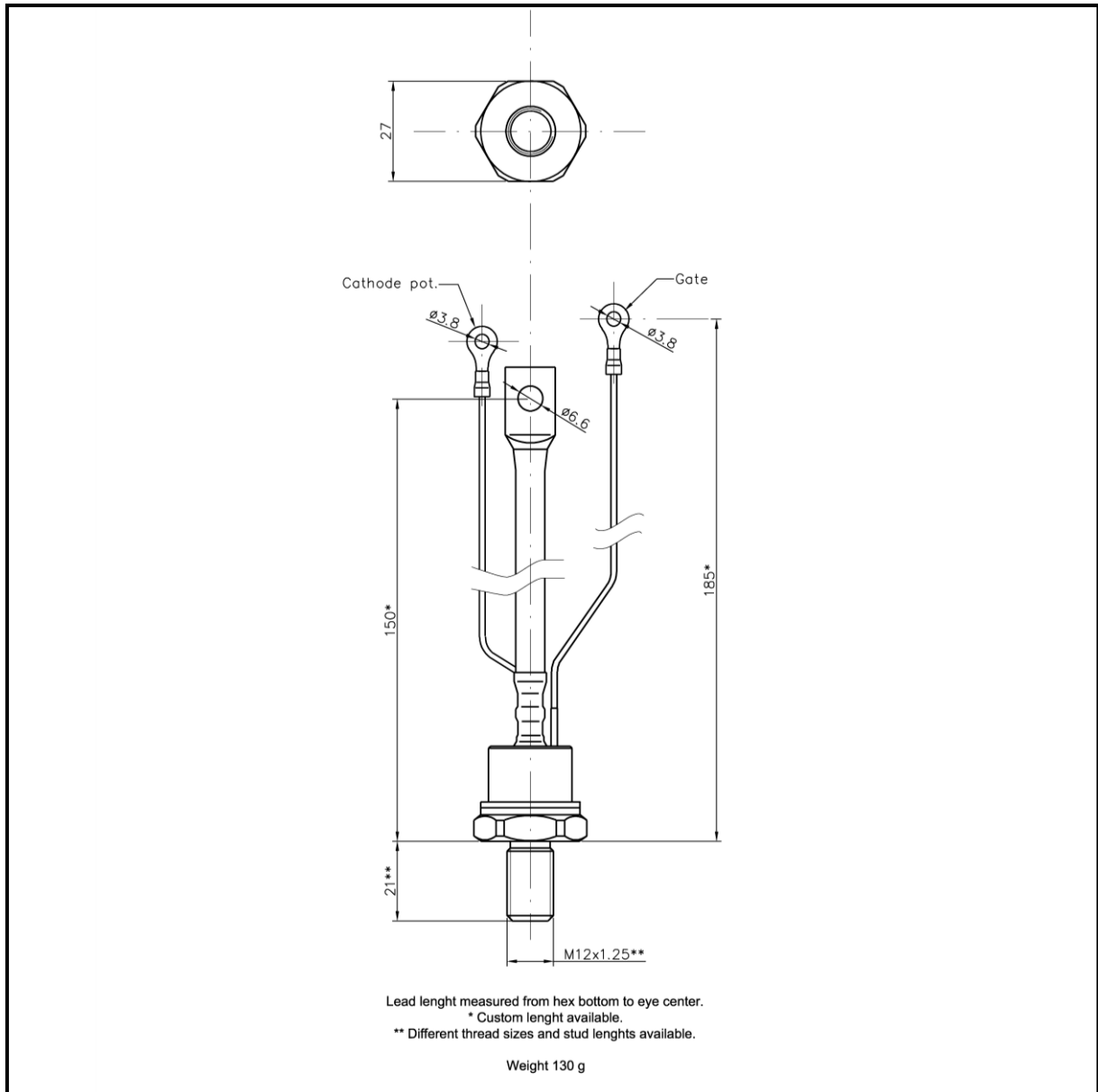
Thermal properties

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

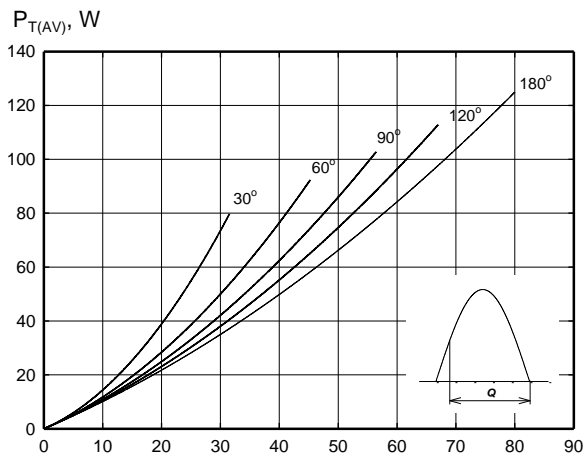
Parameter		Unit	Value
Mounting torque	M	Nm	14 ... 17
Weight	m	g	130

Package details

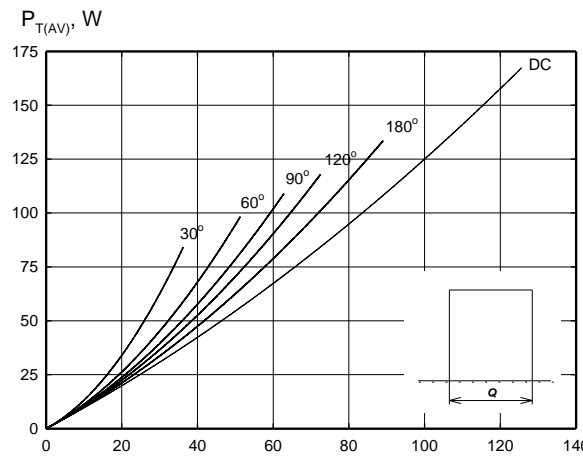


For further package information, please contact Sales & Marketing Department. All dimensions in mm, unless stated otherwise.
Do not scale.

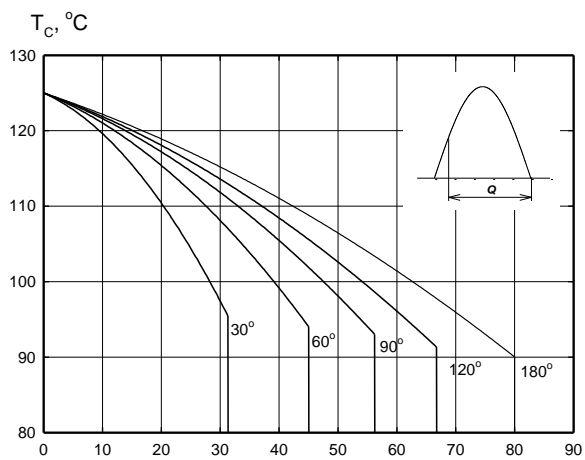
CHARACTERISTICS



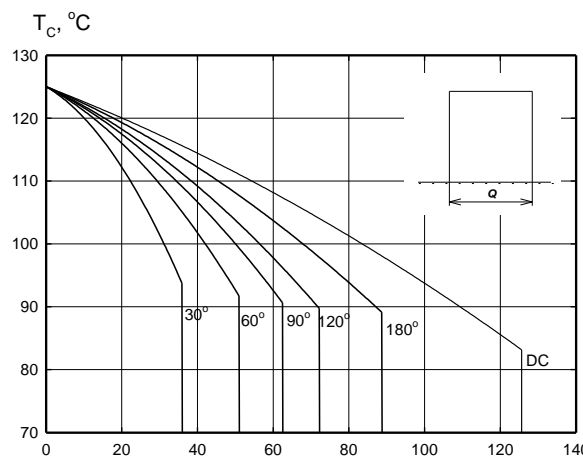
Power loss characteristics. Sinus wave form. $I_{T(AV)}, A$



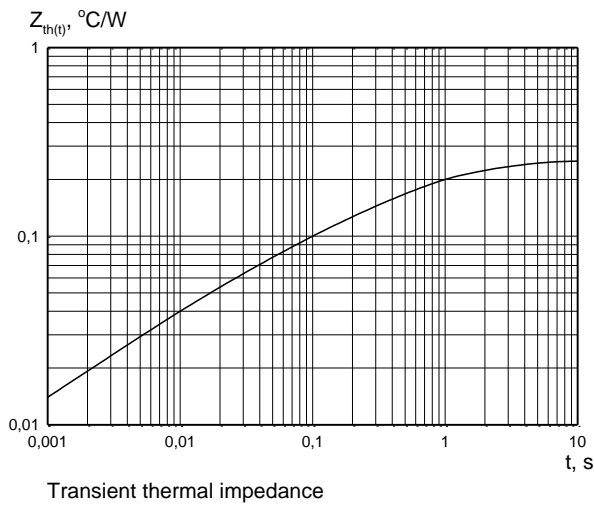
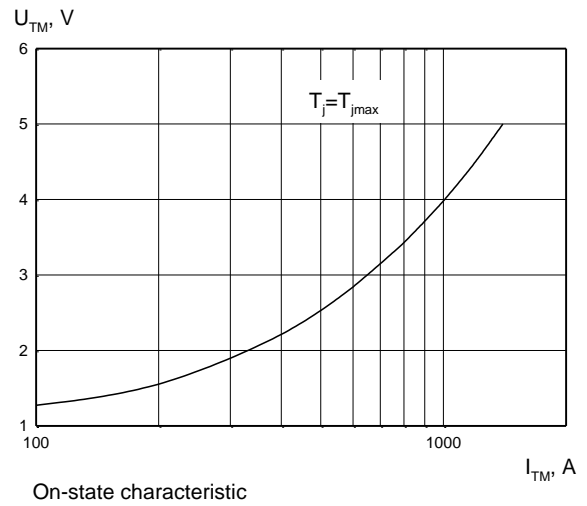
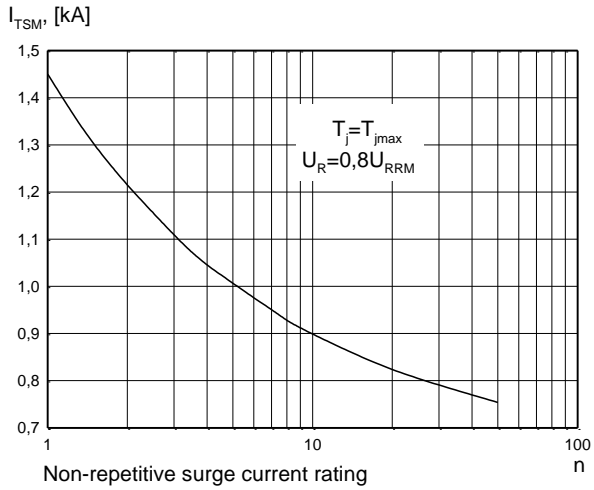
Power loss characteristics. Square wave form. $I_{T(AV)}, A$



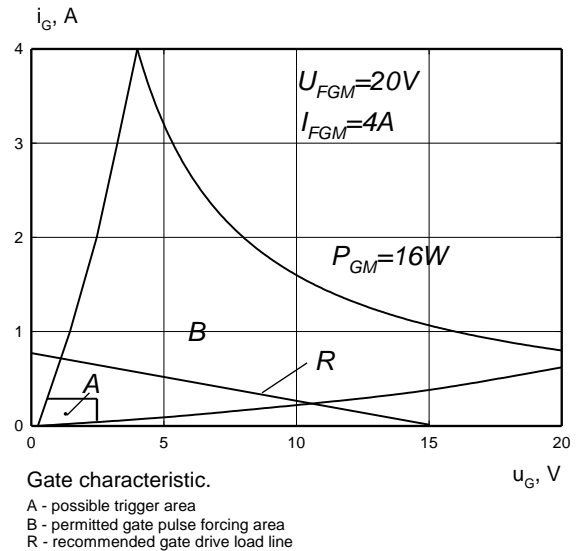
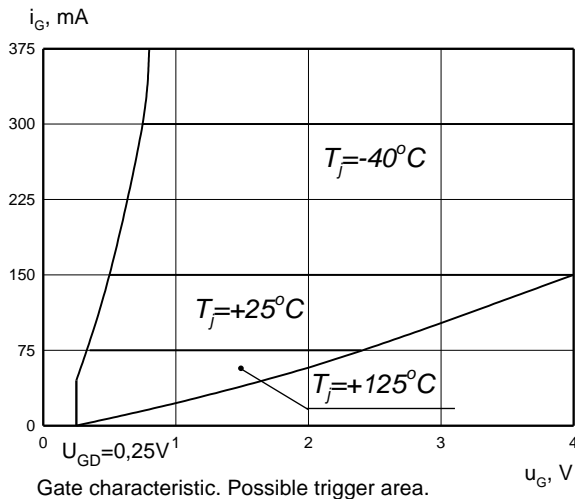
Case temperature ratings. Sinus wave form. $I_{T(AV)}, A$



Case temperature ratings. Square wave form. $I_{T(AV)}, A$



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.