P H A S E   C O N T R O L   T H Y R I S T O R

T161-160

- V_{DRM} = **300-1800 V**
- V_{RRM} = **300-1800 V**
- $I_{T(AV)}$ = **160 A** (T_C = 87 °C)
- I_{TSM} = **4 kA** (T_j = 125 °C)

- Hermetic metal cases with ceramic
- Pressure contact design
- Threaded studs of ISO

MAXIMUM RATED VALUES

Parameter and conditions	Symbol	Values	Units
Repetitive peak off-state voltage / Repetitive peak reverse voltage, T_j = - 60 °C…+ 125 °C	V_{DRM} / V_{RRM}	300-1800	V
Non-repetitive peak off-state voltage/Non- repetitive peak reverse voltage, T_j = - 60 °C…+ 125 °C	V_{DSM} / V_{RSM}	400-1900	
Repetitive peak off-state current/ Repetitive peak reverse current, T_j = 125 °C, V_D / V_R = V_{DRM} / V_{RRM}	I_{DRM} / I_{RRM}	15	mA
Max. average on-state current, T_C = 87 °C, f = 50 Hz	$I_{T(AV)}$	160	A
RMS on-state current	I_{TRMS}	251	
Surge non-repetitive current, T_j = 125 °C, t_p = 10 ms, V_R = 0	I_{TSM}	4	kA
Safety factor	I^2t	$0,08 \cdot 10^6$	A^2s
Critical rate of rise of on-state current, T_j =125 °C, I_T = 320 A, I_{FG} = 2 A, t_r = 0,5 µs, V = 0,67V_{DRM} , f = 50 Hz	$(di_T/dt)_{crit}$	125	A/µs
Critical rate of rise of off-state voltage T_j = 125 °C ,V_D = 0,67V_{DRM}	$(dv_D/dt)_{crit}$	20-1000	V/µs
Gate power loss, DC	P_{GM}	4	W
Operation junction temperature range	T_j	-60 + 125	°C
Storage temperature range	T_{stg}	-60 + 50	

T161-160

ELECTRICAL CHARACTERISTICS

Parameter and conditions	Symbol	Values			Units
		min.	typ.	max.	
Maximum peak on-state voltage, $T_j = 25\ °C$, $I_T = 502\ A$	V_{TM}	-	-	1,70	V
On-state threshold voltage, $T_j = 125\ °C$, $I_T = 250 - 750\ A$	$V_{T(TO)}$	-	-	1,05	
On-state slope resistance, $T_j = 125\ °C$, $I_T = 250 - 750\ A$	r_T	-	-	1,36	$m\Omega$
Turn off-time, $T_j = 125\ °C$, $I_T = 160\ A$, $di_T/dt = - 5\ A/\mu s$, $V_R \geq 100\ V$, $V_D = 0,67 V_{DRM}$, $dv_D/dt = 50\ V/\mu s$	t_q	-	250	-	μs
Recovery charge, $T_j = 125°C$, $I_T = 160\ A$, $di_T/dt = - 5\ A/\mu s$, $V_R \geq 100\ V$	Q_{rr}			350	μAs
Reverse recovery maximum current $T_j = 125\ °C$, $I_T = 160\ A$, $di_T/dt = - 5\ A/\mu s$, $V_R \geq 100\ V$	I_{rr}			47	A
Holding current, $T_j = 25\ °C$, $V_D = 12\ V$	I_H	-	-	250	mA
Gate trigger voltage, $V_D = 12\ V$ $\quad\quad T_j = - 60\ °C$ $\quad\quad T_j = 25\ °C$ $\quad\quad T_j = 125\ °C$	V_{GT}	-	-	5,0 2,5 2,0	V
Gate trigger current, $V_D = 12\ V$ $\quad\quad T_j = - 60\ °C$ $\quad\quad T_j = 25\ °C$ $\quad\quad T_j = 125\ °C$	I_{GT}	-	-	400 200 150	mA
Gate non-trigger voltage, $T_j = 125\ °C$, $V_D = 0,67 V_{DRM}$	V_{GD}	0,45			V

THERMAL PARAMETERS

Parameter and conditions	Symbol	Values			Units
Thermal resistance junction to case	$R_{th(j-c)}$	-	-	0,15	°C/W
Thermal resistance case to heatsink	$R_{th(j-c)}$	-	-	0,05	

MECHANICAL PARAMETERS

Parameter and conditions	Symbol	Values			Units
Weight	w	-	0,24	-	kg
Torque	Md	20	-	30	Nm
Maximum acceleration (at nominal mounting torque)	a	-	-	50	m/s^2
Cathode-anode distance on insulator surface	D_S		20		mm

T161-160
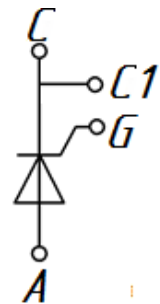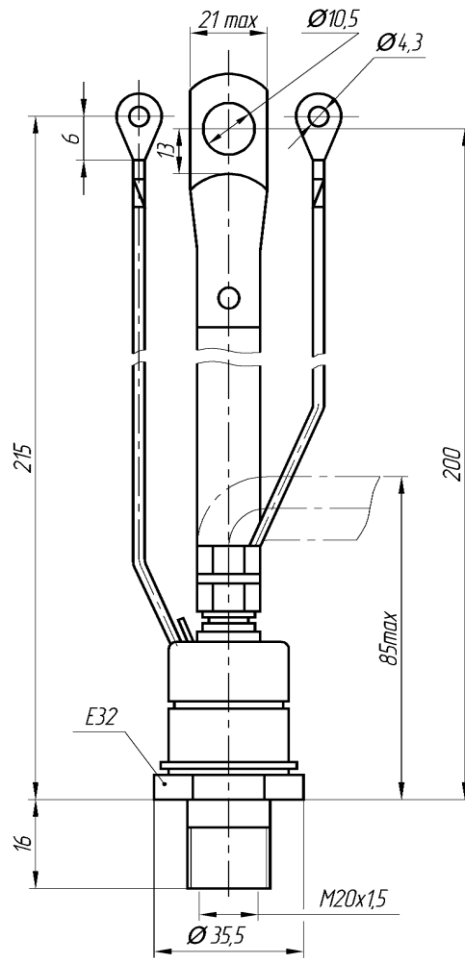
C – Cathode, A – Anode, G –Gate, C1 – Auxiliary cathode

Device Outline Drawing

(dimensions in mm)

Type and length of gate interfaces G and C1 as required by the customer