AS ENERGI

Thyristor Modules
AMET 741-22E

Symbols and parameters			Values	Units
$I_{T(AV)}$	Average on-state current	sin 180; T_C = 85 (100)°C	819 (564)	A
I_{TRMS}	RMS on-state current	continuous operation	1500	A
V_{RSM}	Non-repetitive peak reverse voltage		2300	V
V_{RRM}	Repetitive peak reverse voltage		2200	V
V_{DRM}	Repetitive peak off-state voltage		2200	V
I_{TSM}	Surge on-state current	T_j = 25°C; 10 ms T_j = 125°C; 10 ms	30000 26500	A A
I^2t	I^2t value, rating for fusing	T_j = 25°C; 10 ms T_j = 125°C; 10 ms	4500000 3500000	A^2s A^2s
V_T	On-state voltage	T_j = 125°C; I_T =3000 A	max. 1.51	V
$V_{T(TO)}$	On-state threshold voltage	T_j = 125°C	max. 0.82	V
r_T	On-state slope resistance	T_j = 125°C	max. 0.17	mΩ
I_{DD} ; I_{RD}	Forward off-state current; Direct reverse current	T_j = 125°C, V_{DD}=V_{DRM}; V_{RD}=V_{RRM}	max. 150	mA
t_{gd}	Gate controlled turn-on delay time	T_j = 25 °C; I_G = 1 A; di_G/dt = 1 A/µs	max. 4	µs
$(di/dt)_{cr}$	Critical rate of rise of on-state current		200	A/µs
$(dv/dt)_{cr}$	Critical rate of rise of off-state voltage		1000	V/µs
t_q	Turn-off time		typ. 350	µs
I_H	Holding current	T_j = 25°C	max. 500	mA
I_L	Latching current	T_j = 25°C; R_G=33 Ω	max. 2500	mA
V_{GT}	Gate trigger voltage	T_j = 25°C; d.c.	min. 2.2	V
I_{GT}	Gate trigger current	T_j = 25°C; d.c.	min. 250	mA
V_{GD}	Gate non-trigger voltage	T_j = 125°C; d.c.	max. 0.25	V
I_{GD}	Gate non-trigger current	T_j = 125°C; d.c.	max. 10	mA
$R_{th(j-c)}$	Thermal resistance, junction to case	cont.; per chip / per module	0.0405	K/W
		sin.180; per chip / per module	0.042	K/W
		rec.120; per chip / per module	0.043	K/W
$R_{th(c-s)}$	Thermal resistance, junction to heatsink	per chip / per module	0.015	K/W
T_j	Junction temperature		-40 ... +125	°C
T_{stg}	Storage temperature range		-40 ... +130	°C
V_{isol}	Insulation test voltage (r.m.s.)	a.c. 50 Hz; r.m.s.; 1s / 1min.	3600 / 3000	V~
M_S	Mounting torque on heatsink	min. / max	5.1 / 6.9	Nm
M_t	Mounting torque for terminals	min. / max	16.2 / 19.8	Nm
a	Maximum allowable acceleration		5*9.81	m/s^2
W	Weight	approx.	1950	g

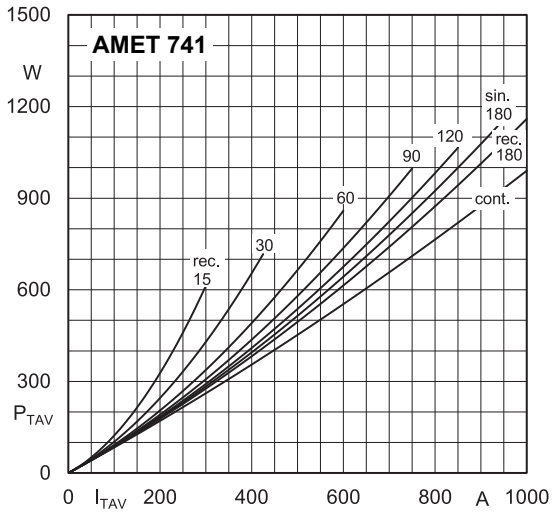


Fig. 1L: Power dissipation per thyristor vs. on-state current

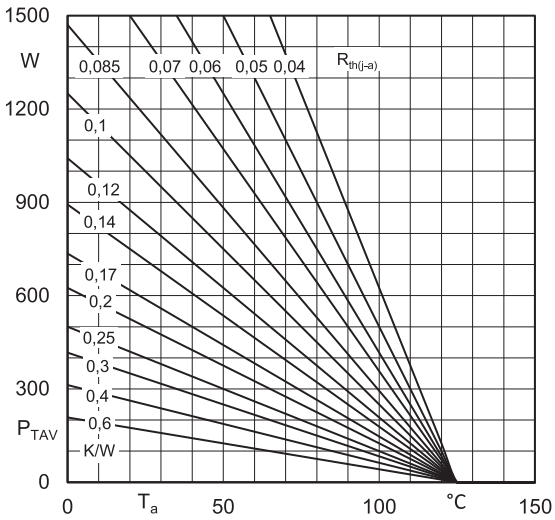


Fig. 1R: Power dissipation per thyristor vs. ambient temperature

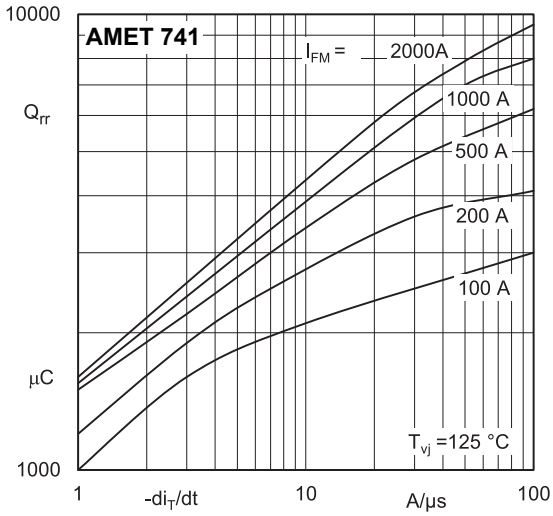


Fig. 5: Recovered charge vs. current decrease

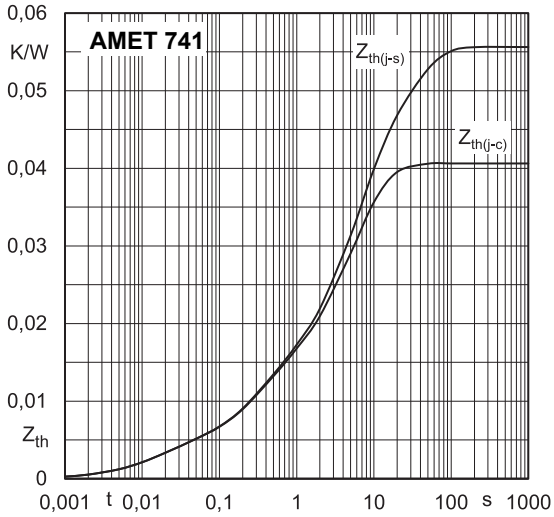


Fig. 6: Transient thermal impedance vs. time

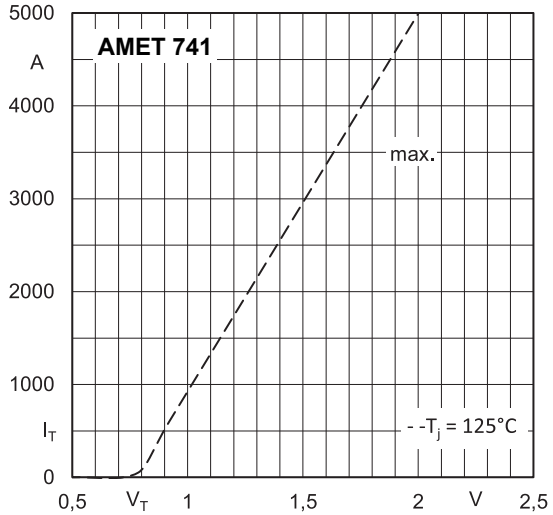


Fig. 7: On-state characteristics

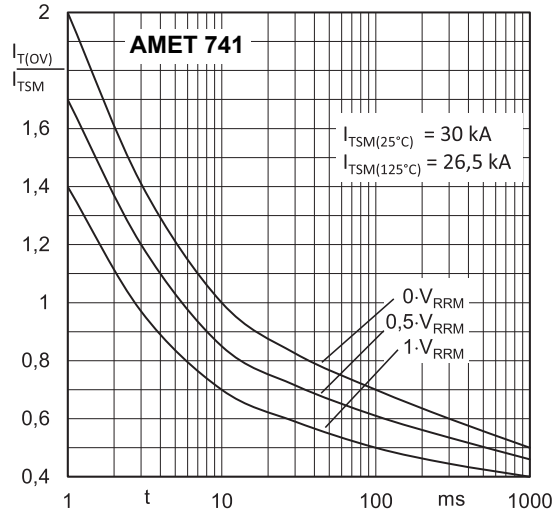


Fig. 8: Surge overload current vs. time

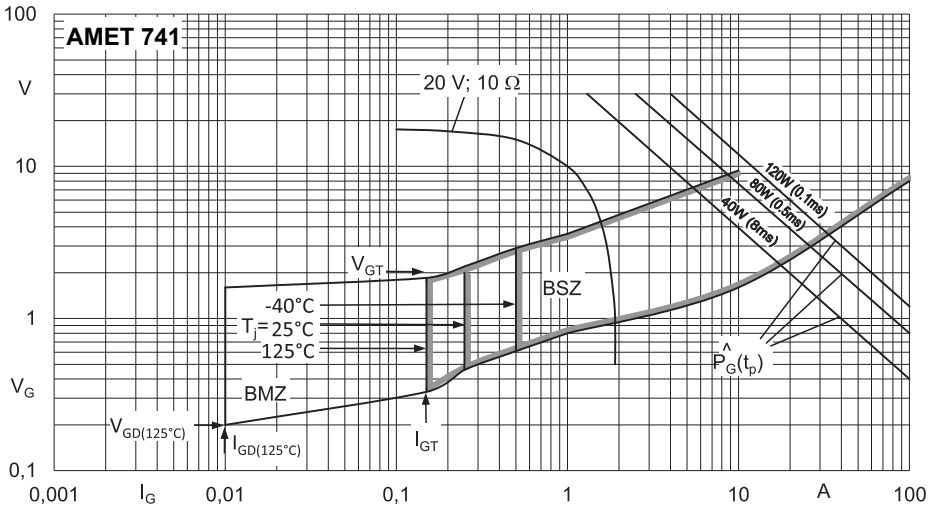
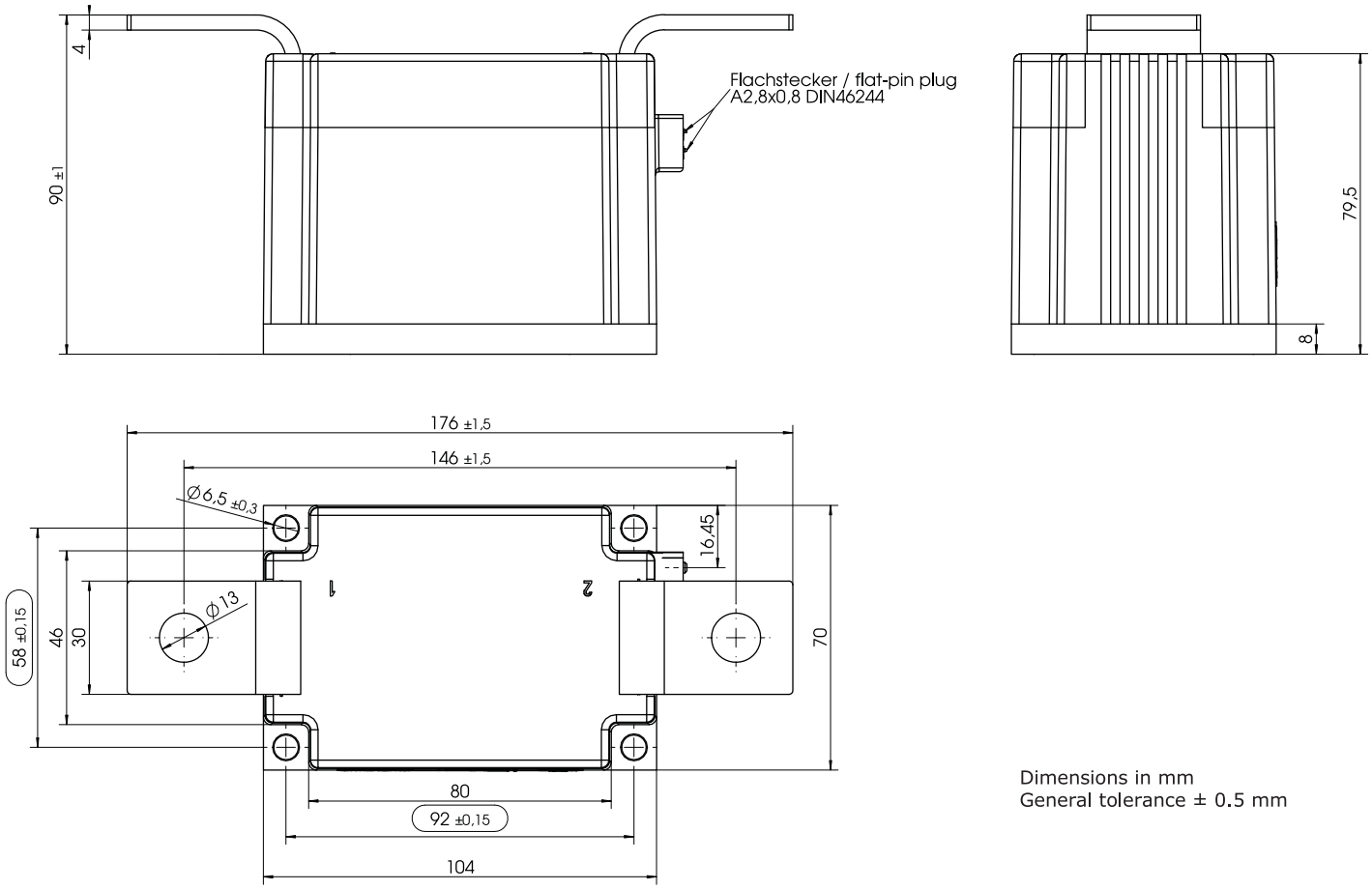


Fig. 9: Gate trigger characteristics

DIMENSIONS



Dimensions in mm
General tolerance ± 0.5 mm

TOPOLOGY OF INTERNAL CONNECTION