AS ENERGI

Thyristor Modules
AMET 400

V_{RSM} V	V_{RRM}, V_{DRM} V	I_{TRMS} = 700 A (maximum value for continuous operation) I_{TAV} = 400 A (sin. 180; T_C = 84°C)		
900	800	AMET 400-08E		
1300	1200	AMET 400-12E		
1500	1400	AMET 400-14E		
1700	1600	AMET 400-16E		
1900	1800	AMET 400-18E		

Symbols and parameters			Values	Units
I_{TAV}	Average on-state current	sin 180; T_C = 85 (100)°C	392 (280)	A
I_D	Direct output current	P16/300F; T_a = 35°C; B2/B6	700 / 880	A
I_{RMS}	Maximum RMS current	P16/400F; T_a = 35°C; W1/W3	905 / 3*720	A
I_{TSM}	Surge on-state current	T_{vj} = 25°C; 10 ms T_{vj} = 130°C; 10 ms	14000 12000	A A
I^2t	I^2t value, rating for fusing	T_{vj} = 25°C; 8.3…10 ms T_{vj} = 130°C; 8.3…10 ms	980000 720000	A^2s A^2s
V_T	On-state voltage	T_{vj} = 25°C; I_T =2400 A	max. 1.7	V
$V_{T(TO)}$	On-state threshold voltage	T_{vj} = 130°C	max. 0.92	V
r_T	On-state slope resistance	T_{vj} = 130°C	max. 0.3	mΩ
I_{DD}; I_{RD}	Forward off-state current; Direct reverse current	T_{vj} = 130°C, V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 130	mA
t_{gd}	Gate controlled turn-on delay time	T_{vj} = 25 °C; I_G = 1 A; di_G/dt = 1 A/µs	1	µs
t_{gr}	Gate controlled rise time	V_D = 0,67 * V_{DRM}	2	µs
$(di/dt)_{cr}$	Critical rate of rise of on-state current	T_{vj} = 130°C	max. 125	A/µs
$(dv/dt)_{cr}$	Critical rate of rise of off-state voltage	T_{vj} = 130°C	max. 1000	
t_q	Turn-off time	T_{vj} = 130°C	150 … 200	µs
I_H	Holding current	T_{vj} = 25°C; typ. / max	150 / 500	mA
I_L	Latching current	T_{vj} = 25°C; R_G=33 Ω; typ. / max	500 / 2000	mA
V_{GT}	Gate trigger voltage	T_{vj} = 25°C; d.c.	min. 3	V
I_{GT}	Gate trigger current	T_{vj} = 25°C; d.c.	min. 200	mA
V_{GD}	Gate non-trigger voltage	T_{vj} = 130°C; d.c.	max. 0.25	V
I_{GD}	Gate non-trigger current	T_{vj} = 130°C; d.c.	max. 10	mA
$R_{th(j-c)}$	Thermal resistance, junction to case	cont.; per module	0.09	K/W
		sin.180; per module	0.095	K/W
		rec.120; per module	0.11	K/W
$R_{th(c-s)}$	Thermal resistance, junction to heatsink	per module	0.02	K/W
T_{vj}	Virtual junction temperature		-40 … +130	°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		5 ± 15%	Nm
M_t	Mounting torque for terminals		17± 15%	Nm
a	Maximum allowable acceleration		5*9.81	m/s^2
W	Weight	approx.	840	g

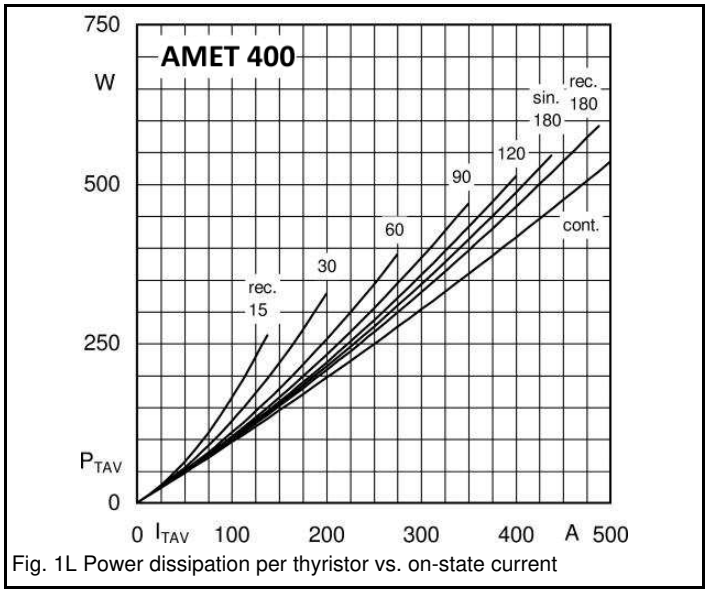


Fig. 1L Power dissipation per thyristor vs. on-state current

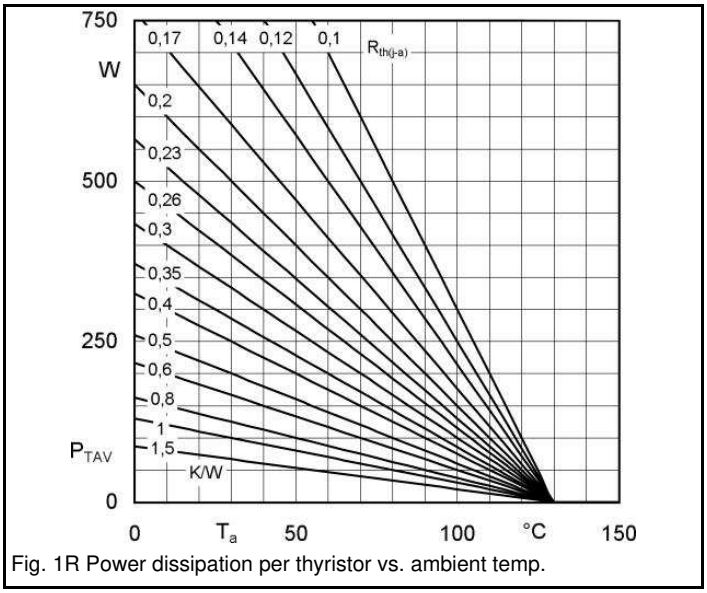


Fig. 1R Power dissipation per thyristor vs. ambient temp.

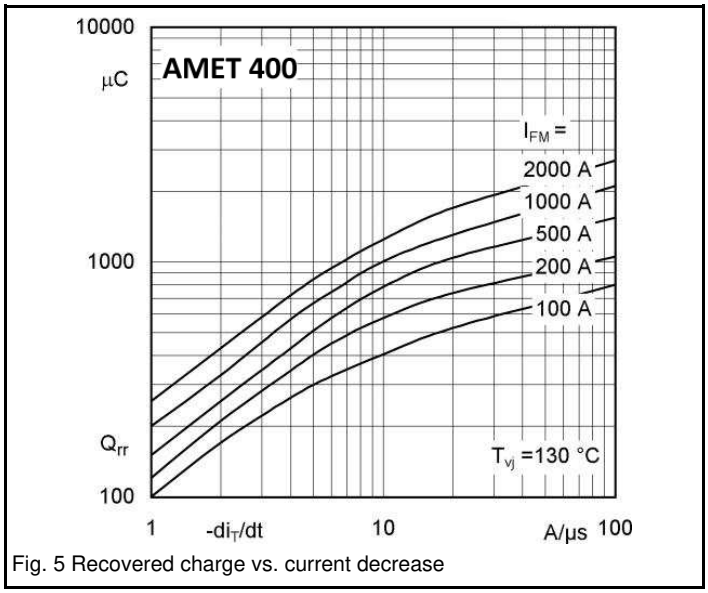


Fig. 5 Recovered charge vs. current decrease

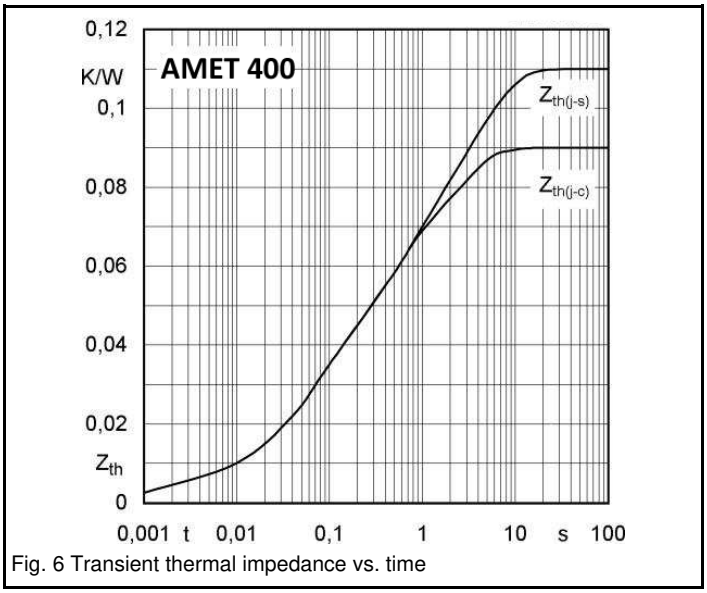


Fig. 6 Transient thermal impedance vs. time

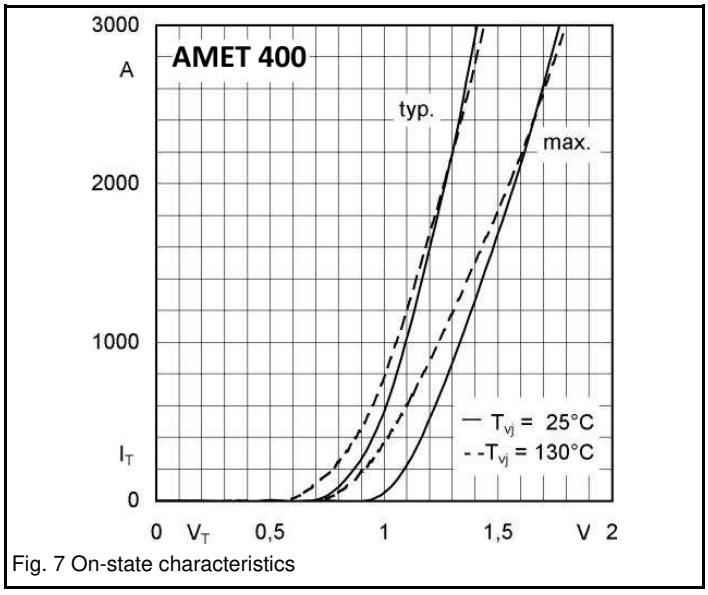


Fig. 7 On-state characteristics

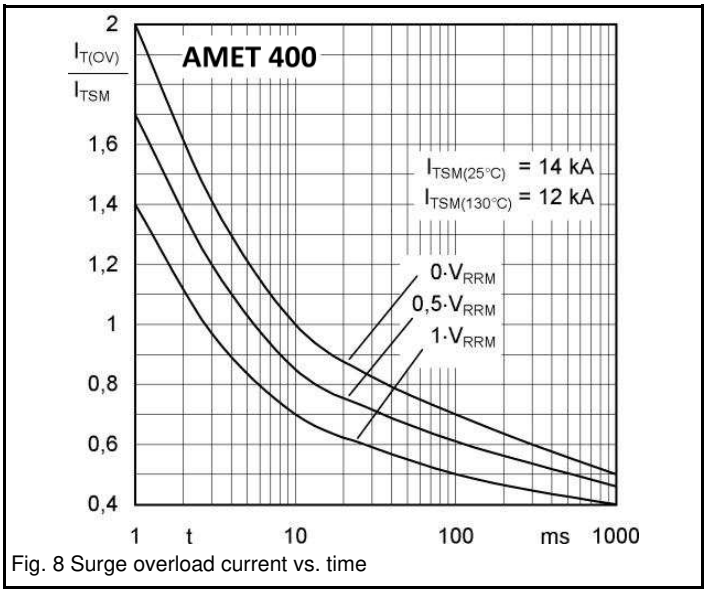


Fig. 8 Surge overload current vs. time

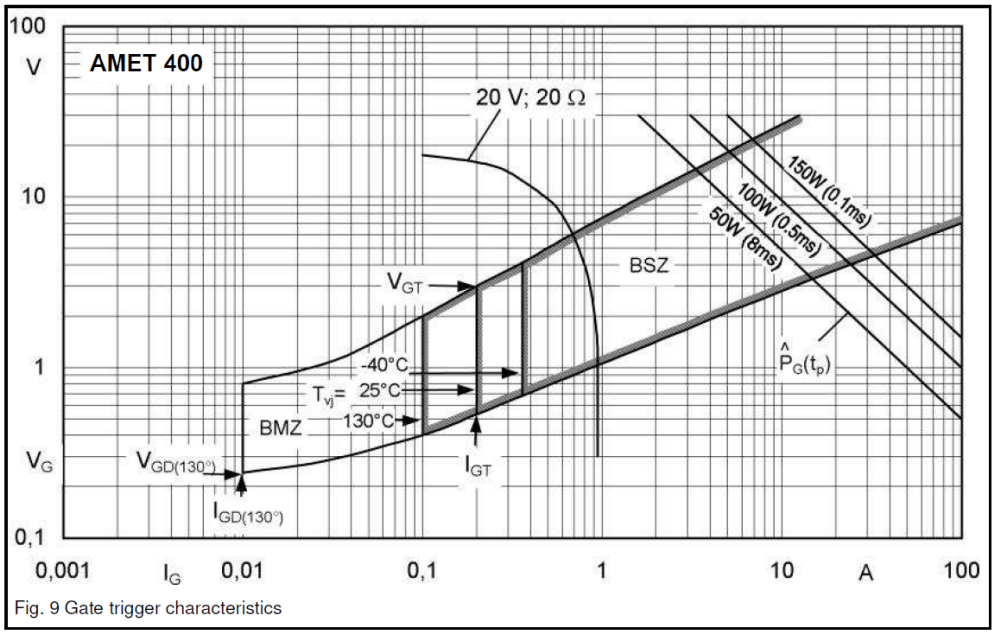
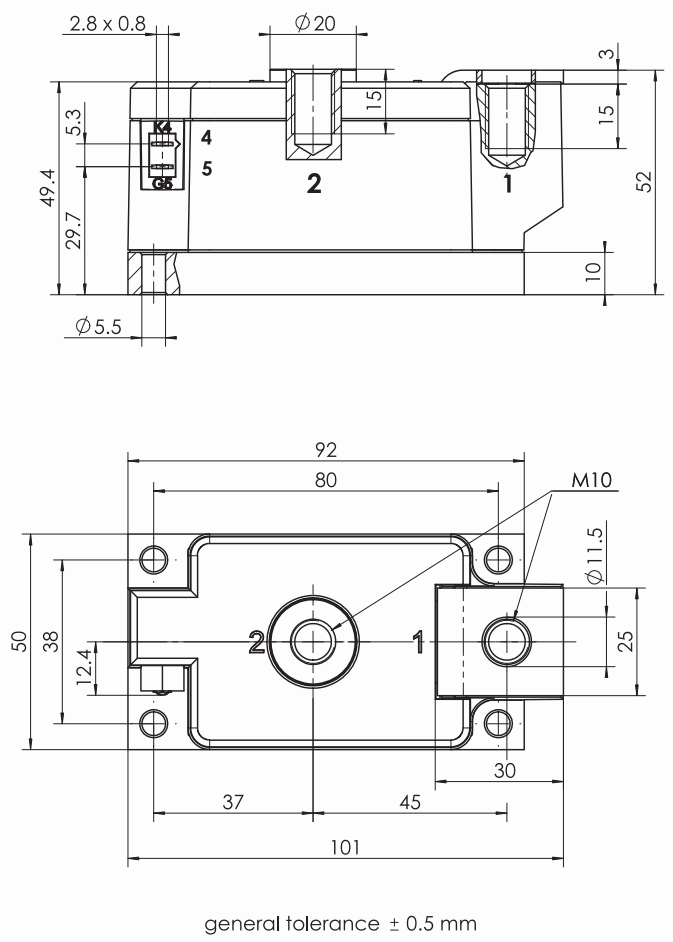


Fig. 9 Gate trigger characteristics

DIMENSIONS



Dimensions in mm

TOPOLOGY OF INTERNAL CONNECTION