AS ENERGI

Thyristor Modules
AMKT 162 H4

V_{RSM} V	V_{RRM}, V_{DRM} V	I_{TRMS} = 250 A (maximum value for continuous operation) I_{TAV} = 162 A (sin 180; T_C = 77 °C)	
2100	2000	AMKT 162-20E H4	
2300	2200	AMKT 162-22E H4	

Symbols and parameters			Values	Units
I_{TAV}	Average on-state current	sin. 180; T_C = 85 (100)°C	143 (101)	A
I_{TSM}	Surge on-state current	T_{vj} = 25°C; 10 ms T_{vj} = 125°C; 10 ms	5200 4800	A A
I^2t	I^2t value, rating for fusing	T_{vj} = 25°C; 10 ms T_{vj} = 125°C; 10 ms	135000 115000	A^2s A^2s
V_T	On-state voltage	T_{vj} = 25°C; I_T =500 A	max. 1.65	V
$V_{T(TO)}$	On-state threshold voltage	T_{vj} = 125°C	max. 0.95	V
r_T	On-state slope resistance	T_{vj} = 125°C	max. 2	mΩ
I_{DD} ; I_{RD}	Forward off-state current; Direct reverse current	T_{vj} = 125°C, V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 60	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} = 125°C	max. 200	A/µs
$(dv/dt)_{cr}$	Critical rate of rise of off-state voltage	T_{vj} = 125°C	max. 1000	V/µs
t_q	Turn-off time	T_{vj} = 125°C	50...150	µs
I_H	Holding current	T_{vj} = 25°C; typ. / max	150 / 400	mA
I_L	Latching current	T_{vj} = 25°C; R_G=33Ω; typ. / max	300 / 1000	mA
V_{GT}	Gate trigger voltage	T_{vj} = 25°C; d.c.	min. 2	V
I_{GT}	Gate trigger current	T_{vj} = 25°C; d.c.	min. 150	mA
V_{GD}	Gate non-trigger voltage	T_{vj} = 125°C; d.c.	max. 0.25	V
I_{GD}	Gate non-trigger current	T_{vj} = 125°C; d.c.	max. 10	mA
$R_{th(j-c)}$	Thermal resistance, junction to case	cont. DC; per chip / per module	0.16 / 0.08	K/W
		sin.180; per chip / per module	0.17 / 0.085	K/W
		rec.120; per chip / per module	0.19 / 0.095	K/W
$R_{th(c-s)}$	Thermal resistance, junction to heatsink	per chip / per module	0.1 / 0.05	K/W
T_{vj}	Virtual junction temperature		-40 ... +125	°C
T_{stg}	Storage temperature range		-40 ... +125	°C
V_{ISOL}	Insulation test voltage (r.m.s.)	a.c. 50 Hz; r.m.s.; 1s / 1min.	4800 / 4000	V~
M_S	Mounting torque on heatsink	min / max	5 ± 15 %	Nm
M_t	Mounting torque for terminals	min / max	5 ± 15 %	Nm
a	Maximum allowable acceleration		5*9.81	m/s^2
W	Weight	approx.	175	g

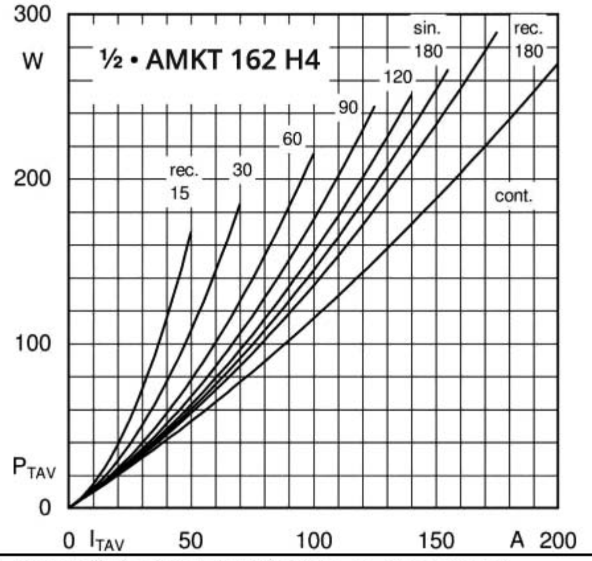


Fig. 1L Power dissipation per thyristor vs. on-state current

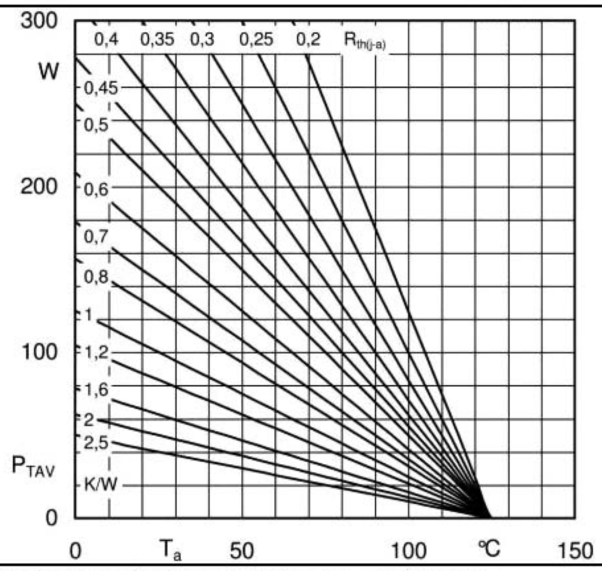


Fig. 1R Power dissipation per thyristor vs. ambient temp.

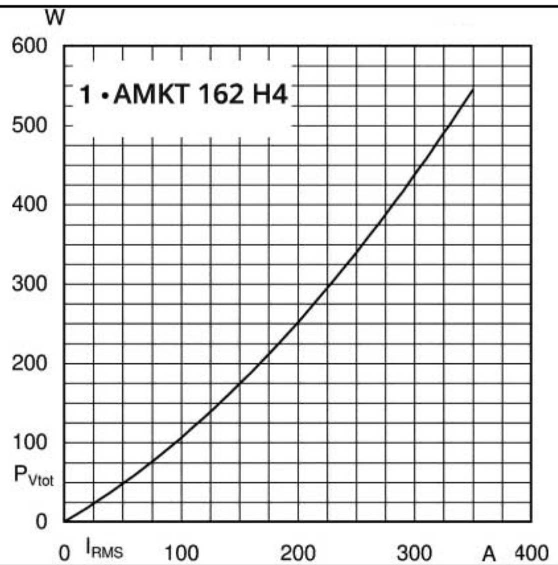


Fig. 2L Power dissipation per module vs. rms current

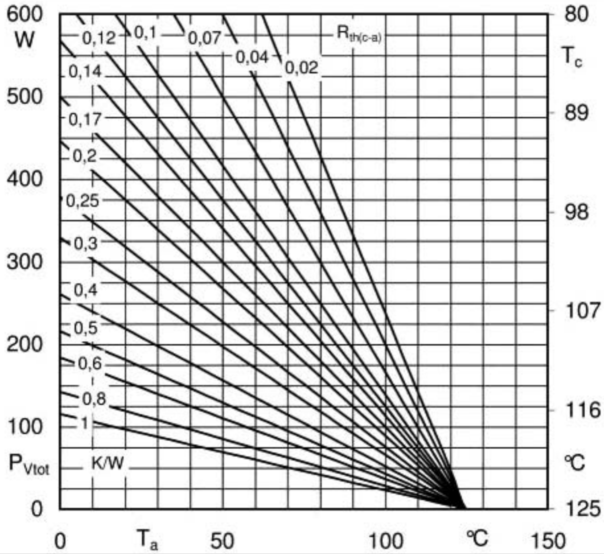


Fig. 2R Power dissipation per module vs. case temp.

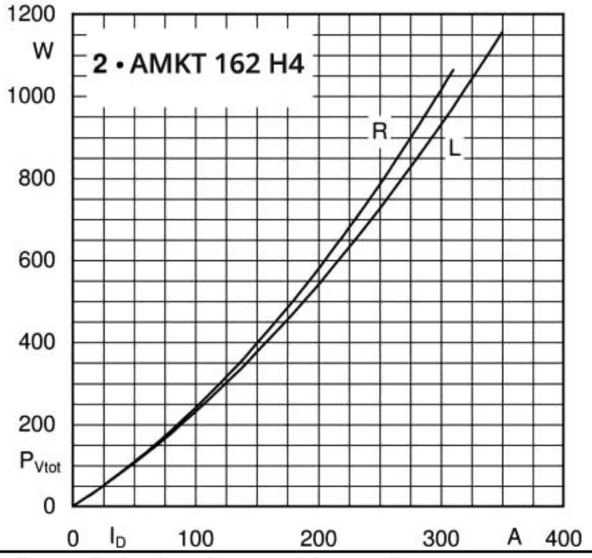


Fig. 3L Power dissipation of two modules vs. direct current

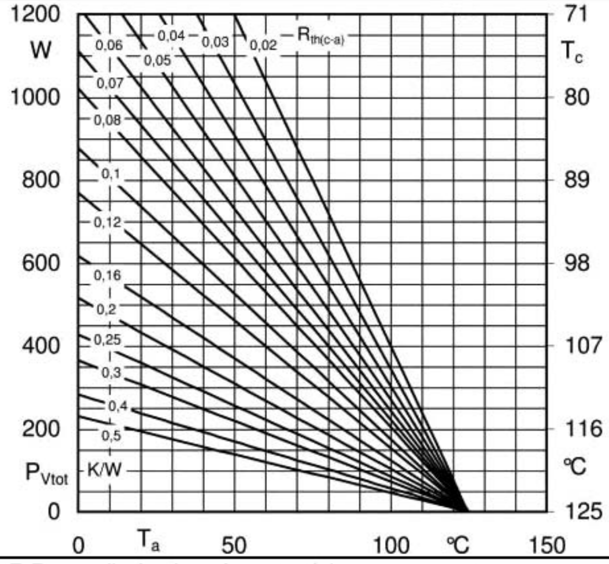


Fig. 3R Power dissipation of two modules vs. case temp.

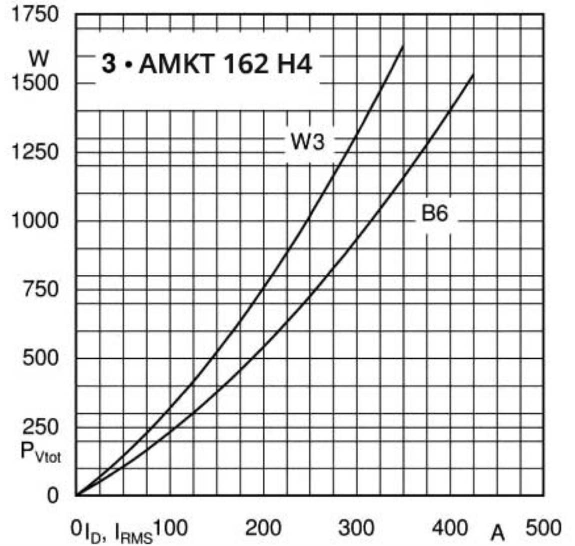


Fig. 4L Power dissipation of three modules vs. direct and rms current

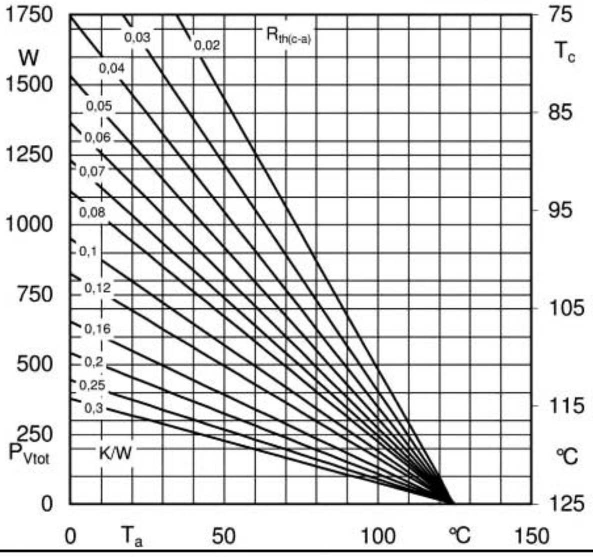


Fig. 4R Power dissipation of three modules vs. case temp.

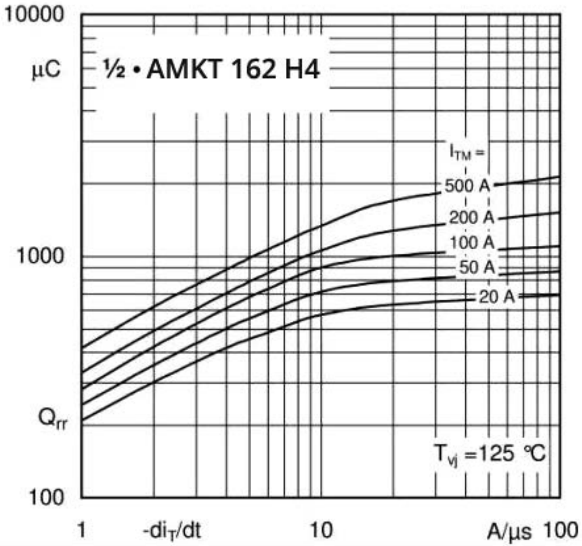


Fig. 5 Recovered charge vs. current decrease

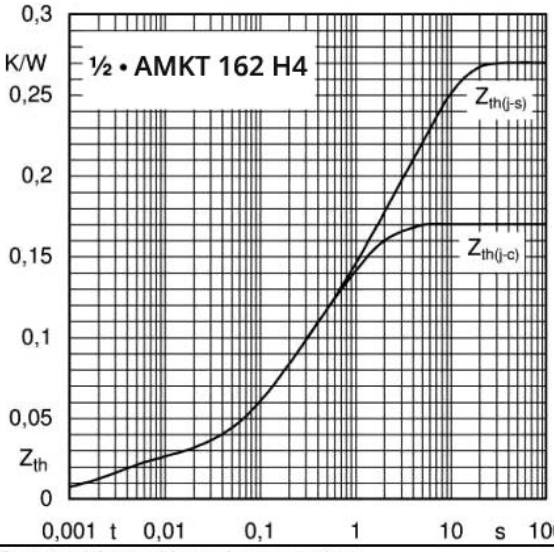


Fig. 6 Transient thermal impedance vs. time

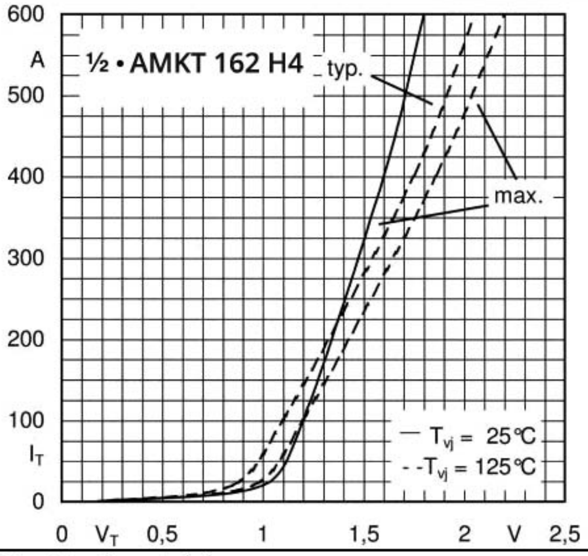


Fig. 7 On-state characteristics

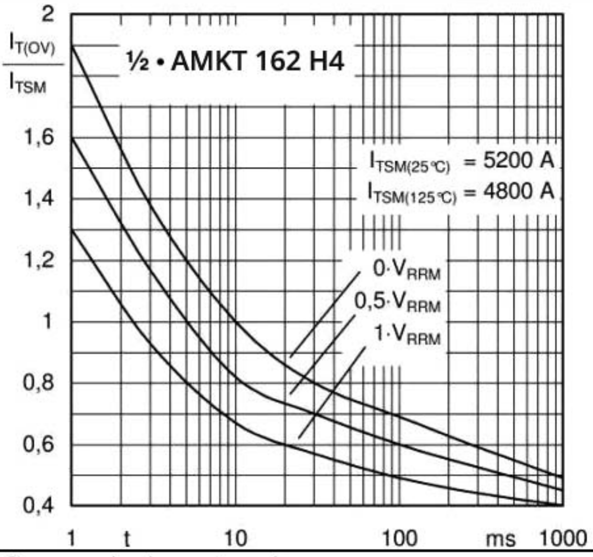


Fig. 8 Surge overload current vs. time

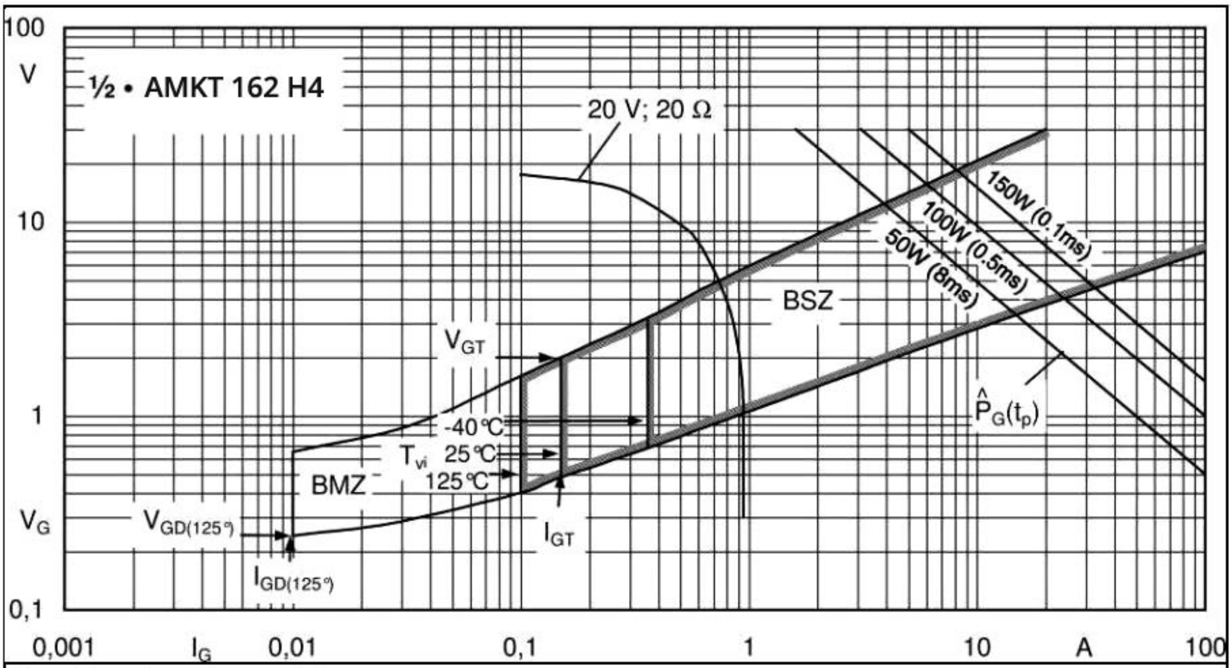
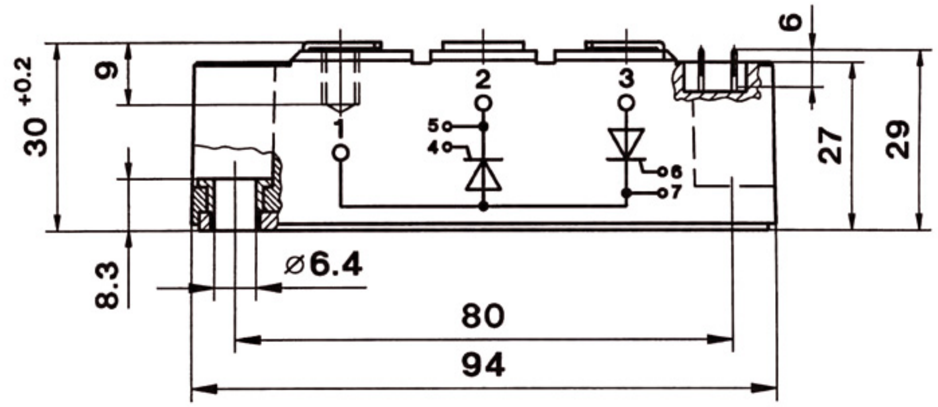
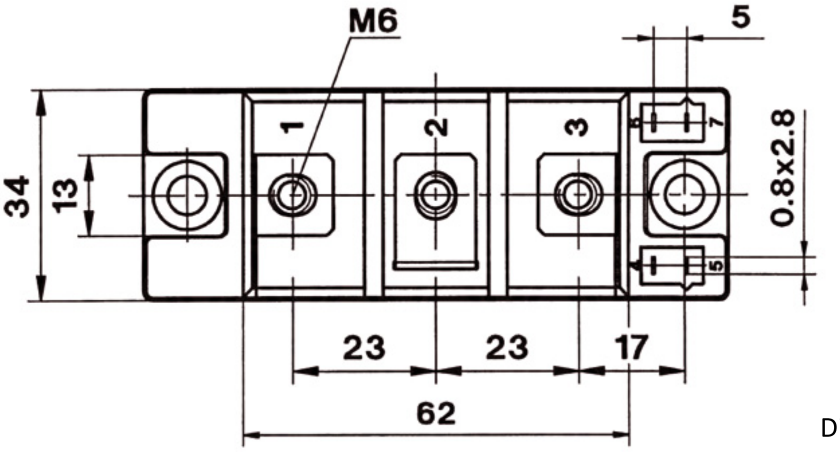


Fig. 9 Gate trigger characteristics

DIMENSIONS





Dimensions in mm

TOPOLOGY OF INTERNAL CONNECTION