

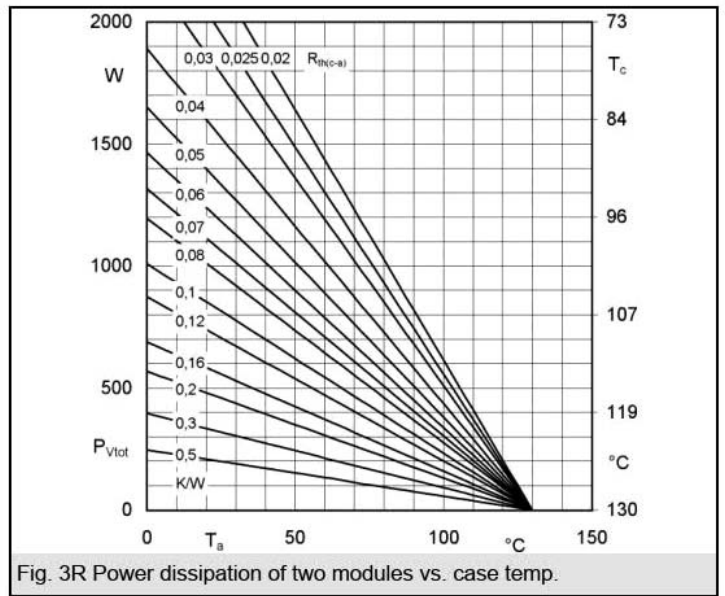
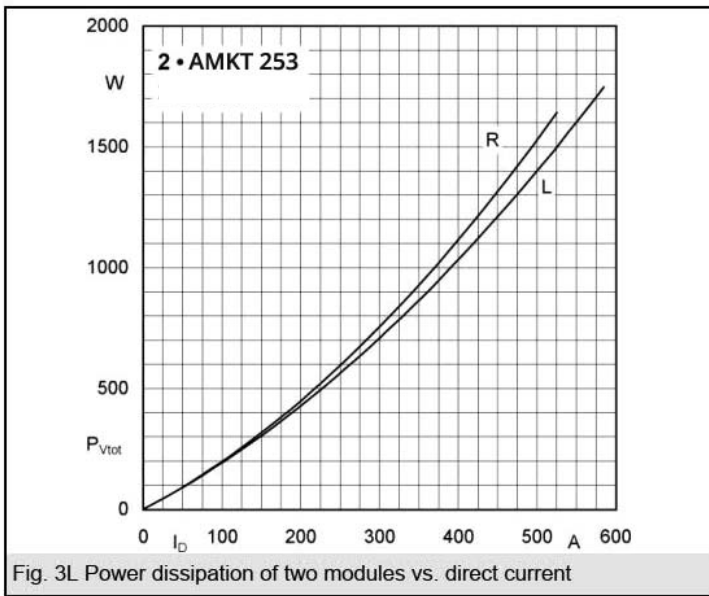
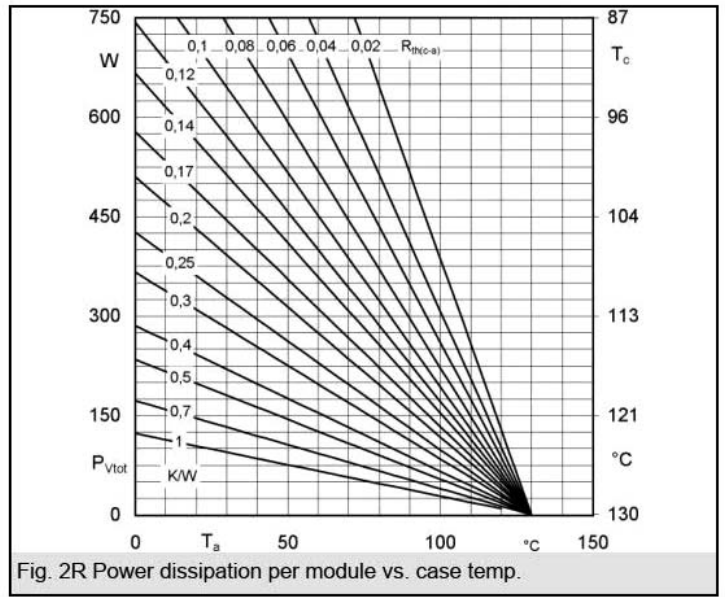
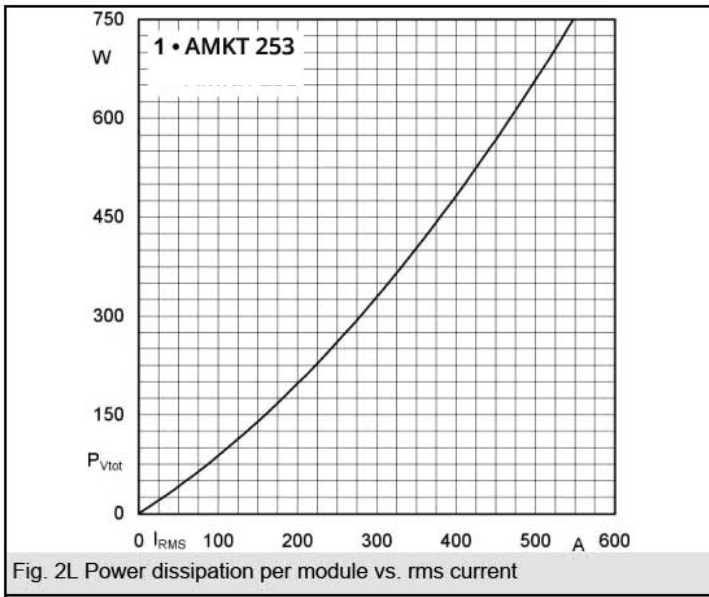
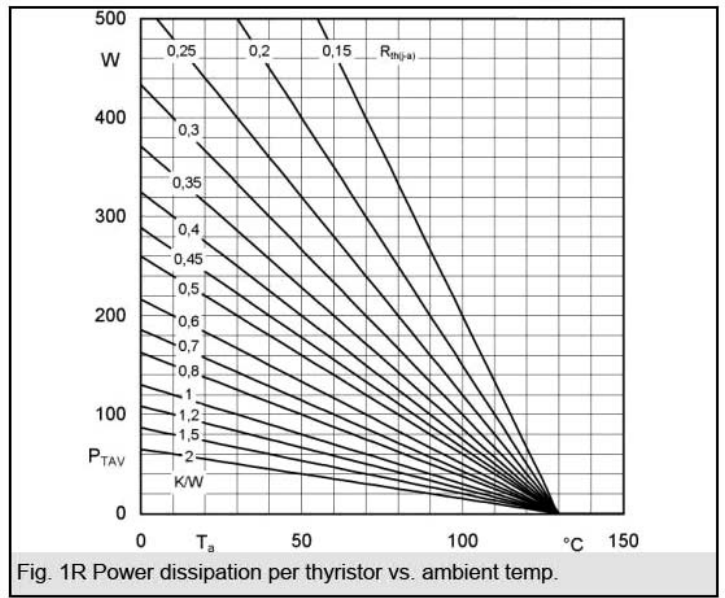
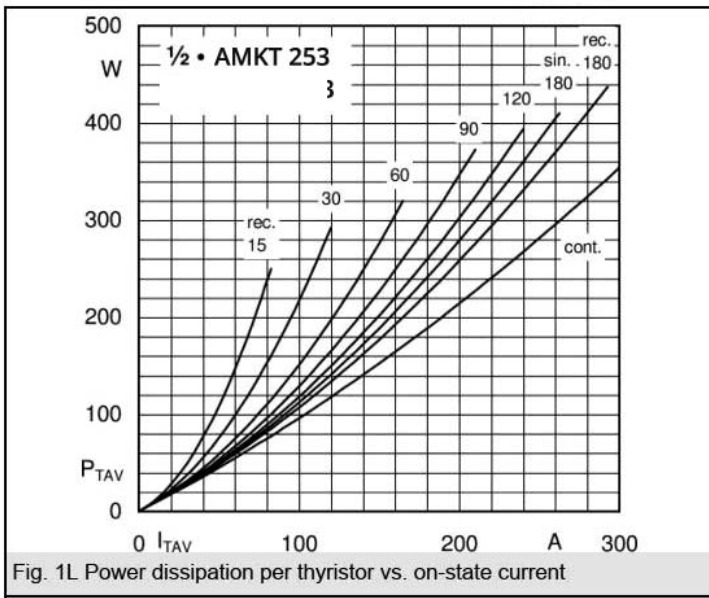
# Thyristor Modules

## AMKT 253



$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_{TRMS} = 420$ A (maximum value for continuous operation) $I_{TAV} = 253$ A (sin 180; $T_C = 85$ °C)	
900	800	AMKT 253-08E	AMKH 253-08E
1300	1200	AMKT 253-12E	AMKH 253-12E
1500	1400	AMKT 253-14E	AMKH 253-14E
1700	1600	AMKT 253-16E	AMKH 253-16E
1900	1800	AMKT 253-18E	AMKH 253-18E

Symbols and parameters			Values	Units
$I_{TAV}$	Average on-state current	sin 180; $T_C = 85$ (100)°C	253 (191)	A
$I_D$	Direct output current	P16/200F; $T_a = 35$ °C; B2/B6	387 / 502	A
$I_{RMS}$	Maximum RMS current	P16/200F; $T_a = 35$ °C; W1/W3	465 / 3*400	A
$I_{TSM}$	Surge on-state current	$T_{vj} = 25$ °C; 10 ms	9000	A
		$T_{vj} = 130$ °C; 10 ms	8000	A
$I^2t$	$I^2t$ value, rating for fusing	$T_{vj} = 25$ °C; 8.3...10 ms	405000	A <sup>2</sup> s
		$T_{vj} = 130$ °C; 8.3...10 ms	320000	A <sup>2</sup> s
$V_T$	On-state voltage	$T_{vj} = 25$ °C; $I_T = 750$ A	max. 1.6	V
$V_{T(TO)}$	On-state threshold voltage	$T_{vj} = 130$ °C	max. 0.85	V
$r_T$	On-state slope resistance	$T_{vj} = 130$ °C	max. 1.1	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. 50	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. 250	A/μs
$(dv/dt)_{cr}$	Critical rate of rise of off-state voltage	$T_{vj} = 130$ °C	max. 1000	V/μs
$t_q$	Turn-off time	$T_{vj} = 130$ °C	50 ... 150	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	300 / 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 thyristor/per module	0.11 / 0.055	K/W
		sin.180; per thyristor / per module	0.115 / 0.057	K/W
		rec.120; per thyristor / per module	0.125 / 0.0625	K/W
$R_{th(c-s)}$	Thermal resistance, junction to heatsink	per thyristor / per module	0.08 / 0.04	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		9 ± 15%	Nm
$a$	Maximum allowable acceleration		5*9.81	m/s <sup>2</sup>
$W$	Weight	approx.	400	g



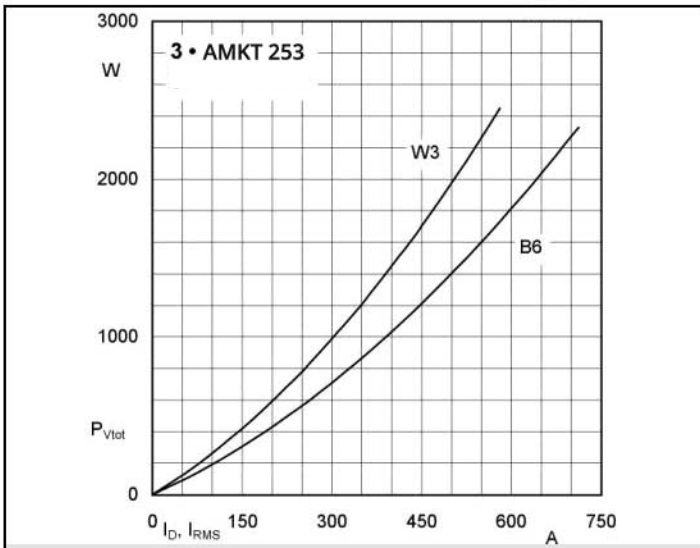


Fig. 4L Power dissipation of three modules vs. direct and rms current

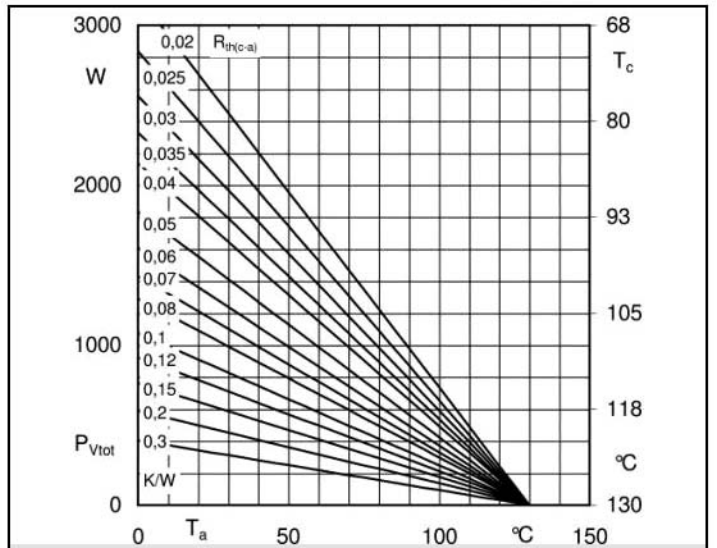


Fig. 4R Power dissipation of three modules vs. case temp.

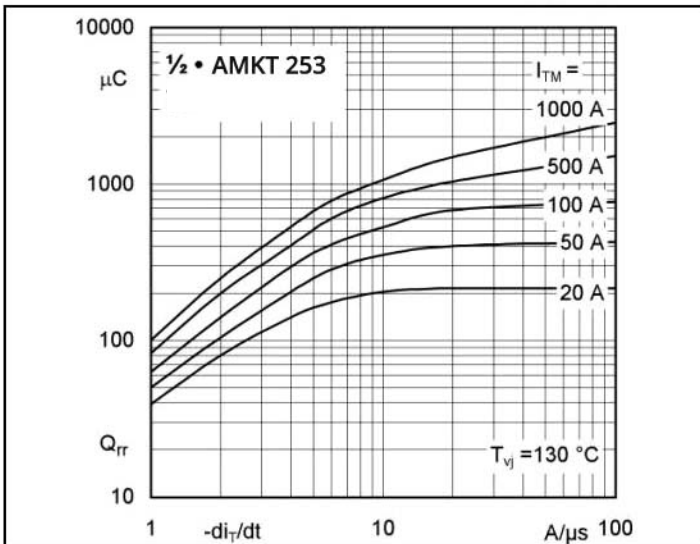


Fig. 5 Recovered charge vs. current decrease

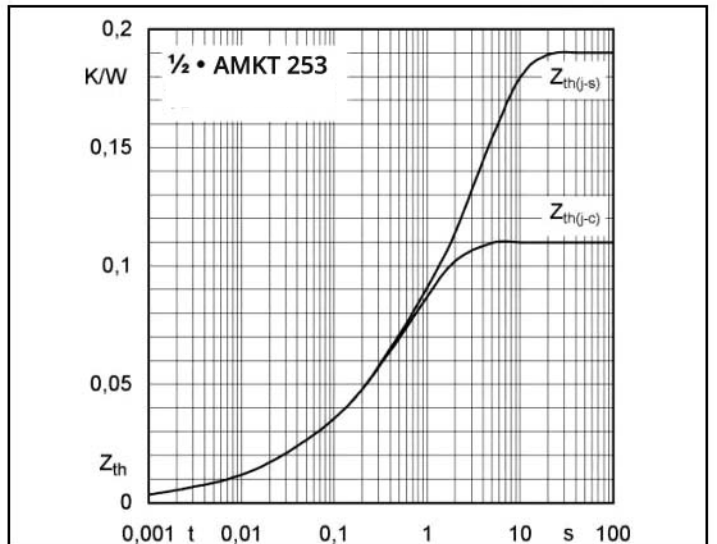


Fig. 6 Transient thermal impedance vs. time

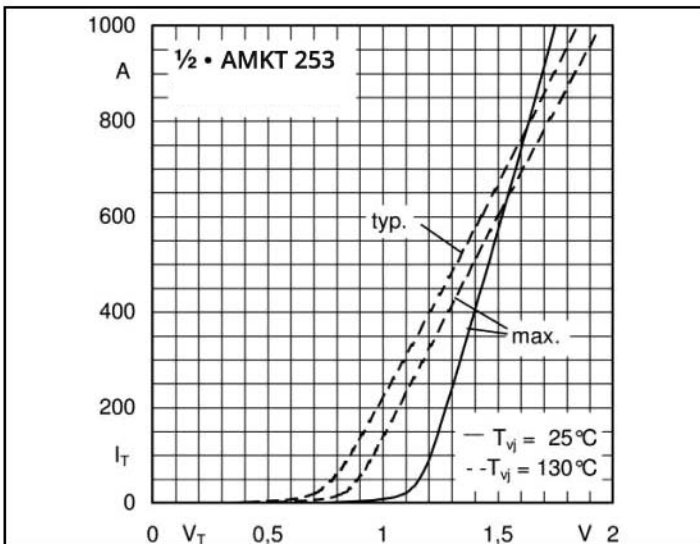


Fig. 7 On-state characteristics

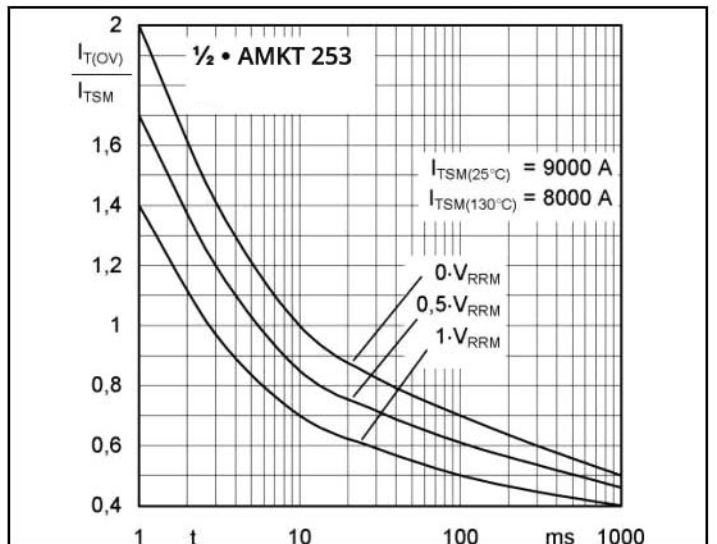
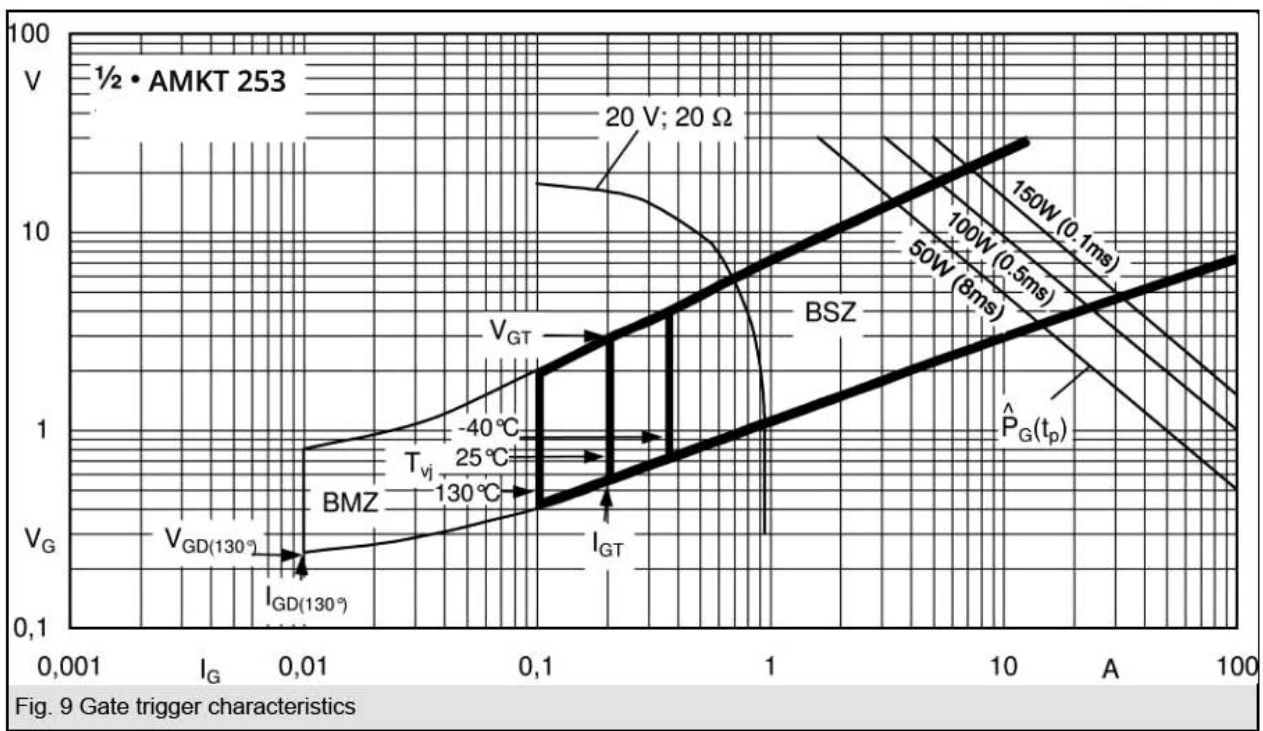
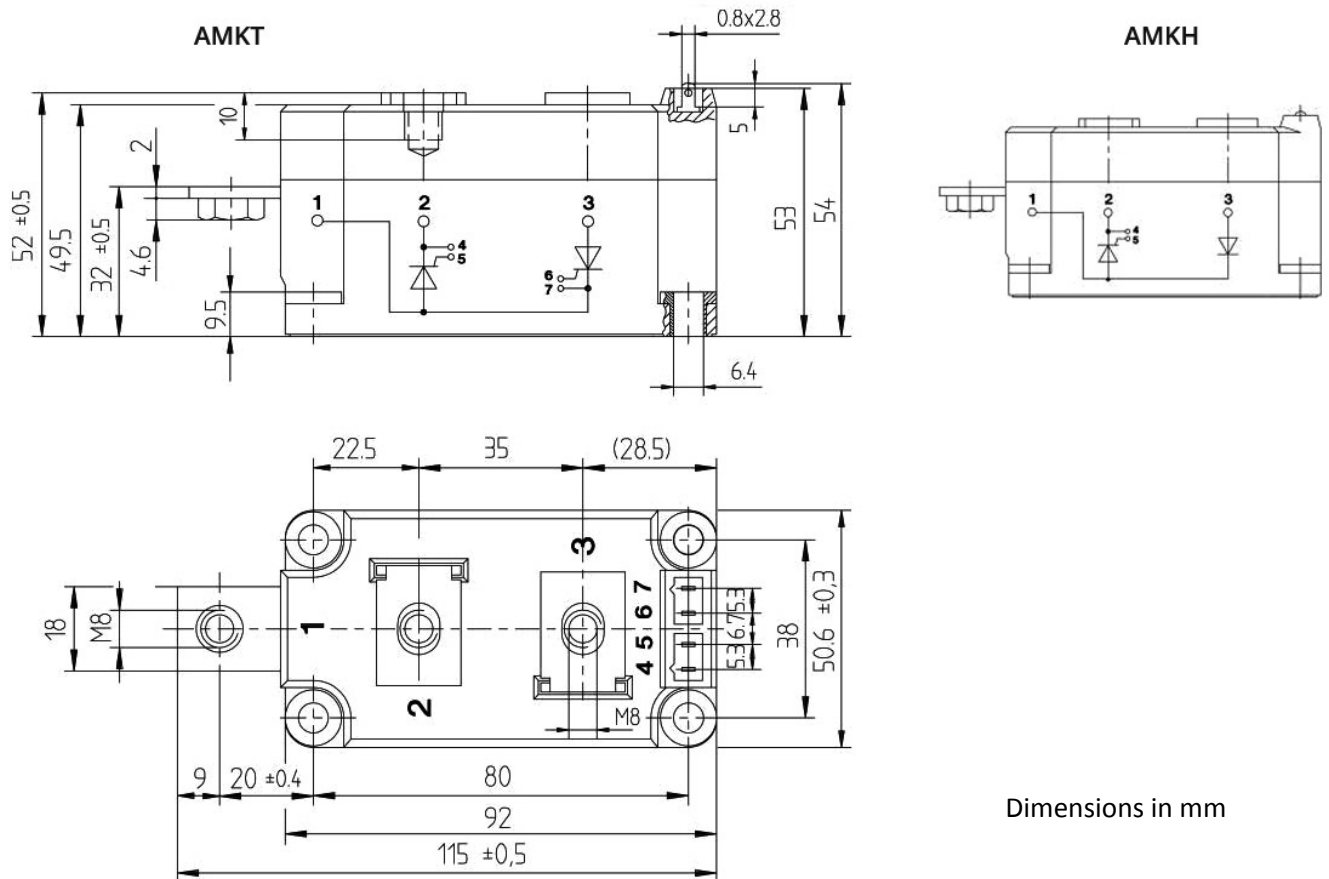


Fig. 8 Surge overload current vs. time





### DIMENSIONS



### TOPOLOGY OF INTERNAL CONNECTION

