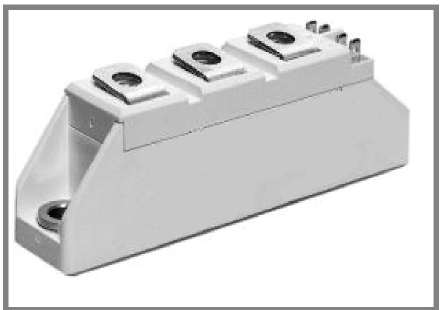
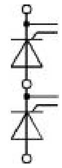


MTC110-1600

Thyristor / Diode Modules

MTC110-1200
MTC110-1600
MTC110-1800



MTC110

V_{RSM} V	V_{RRM}, V_{DRM} V	I_{TRMS} = 150 A (maximum value for continuous operation) I_{TAV} = 95 A (sin. 180; T_c = 85 °C)		
900	800	SKKT 92/08E	SKKT 92B08E	SKKH 92/08E
1300	1200	SKKT 92/12E	SKKT 92B12E	SKKH 92/12E
1500	1400	SKKT 92/14E	SKKT 92B14E	SKKH 92/14E
1700	1600	SKKT 92/16E	SKKT 92B16E	SKKH 92/16E
1900	1800	SKKT 92/18E	SKKT 92B18E	SKKH 92/18E

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; T_c = 85 (100) °C;	95 (68)	A
I_D	P3/180; T_a = 45 °C; B2 / B6	70 / 85	A
	P3/180F; T_a = 35 °C; B2 / B6	140 /175	A
I_{RMS}	P3/180F; T_a = 35 °C; W1 / W3	190 / 3 * 135	A
I_{TSM}	T_{vj} = 25 °C; 10 ms	2000	A
	T_{vj} = 125 °C; 10 ms	1750	A
i^2t	T_{vj} = 25 °C; 8,3 ... 10 ms	20000	A^{2}s
	T_{vj} = 125 °C; 8,3 ... 10 ms	15000	A^{2}s
V_T	T_{vj} = 25 °C; I_T = 300 A	max. 1,65	V
$V_{T(TO)}$	T_{vj} = 125 °C	max. 0,9	V
r_T	T_{vj} = 125 °C	max. 2	mΩ
I_{DD}; I_{RD}	T_{vj} = 125 °C; V_{RD} = V_{RRM}; V_{DD} = V_{DRM}	max. 20	mA
t_{gd}	T_{vj} = 25 °C; I_G = 1 A; di_G/dt = 1 A/µs	1	µs
t_{gr}	V_D = 0,67 * V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj} = 125 °C	max. 150	A/µs
$(dv/dt)_{cr}$	T_{vj} = 125 °C	max. 1000	V/µs
t_q	T_{vj} = 125 °C ,	100	µs
I_H	T_{vj} = 25 °C; typ. / max.	150 / 250	mA
I_L	T_{vj} = 25 °C; R_G = 33 Ω; typ. / max.	300 / 600	mA
V_{GT}	T_{vj} = 25 °C; d.c.	min. 3	V
I_{GT}	T_{vj} = 25 °C; d.c.	min. 150	mA
V_{GD}	T_{vj} = 125 °C; d.c.	max. 0,25	V
I_{GD}	T_{vj} = 125 °C; d.c.	max. 6	mA
$R_{th(j-c)}$	cont.; per thyristor / per module	0,28 / 0,14	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,3 / 0,15	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,32 / 0,16	K/W
$R_{th(c-s)}$	per thyristor / per module	0,2 / 0,1	K/W
T_{vj}		- 40 ... + 125	°C
T_{stg}		- 40 ... + 125	°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	3600 / 3000	V~
M_s	to heatsink	5 ± 15 %$^{1)}$	Nm
M_t	to terminals	3 ± 15 %	Nm
a		5 * 9,81	m/s^2
m	approx.	95	g

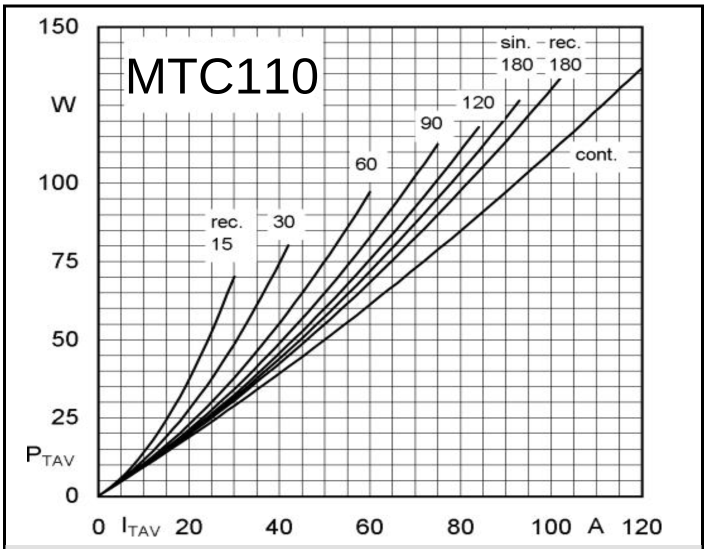


Fig. 1L Power dissipation per thyristor vs. on-state current

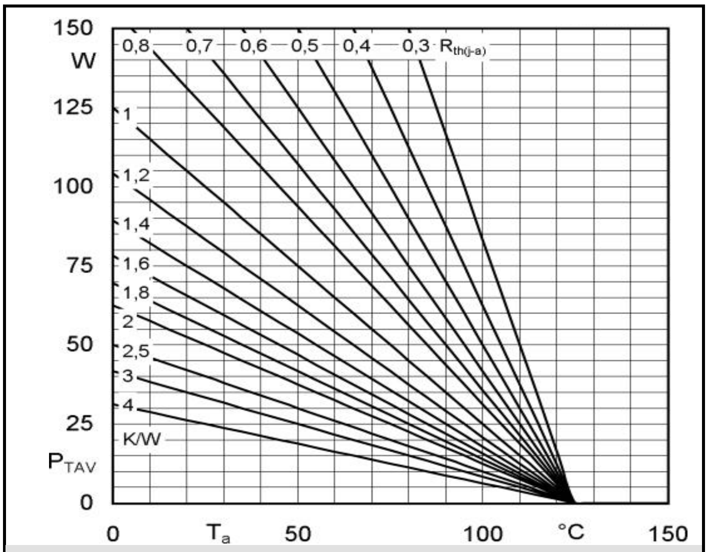


Fig. 1R Power dissipation per thyristor vs. ambient temp.

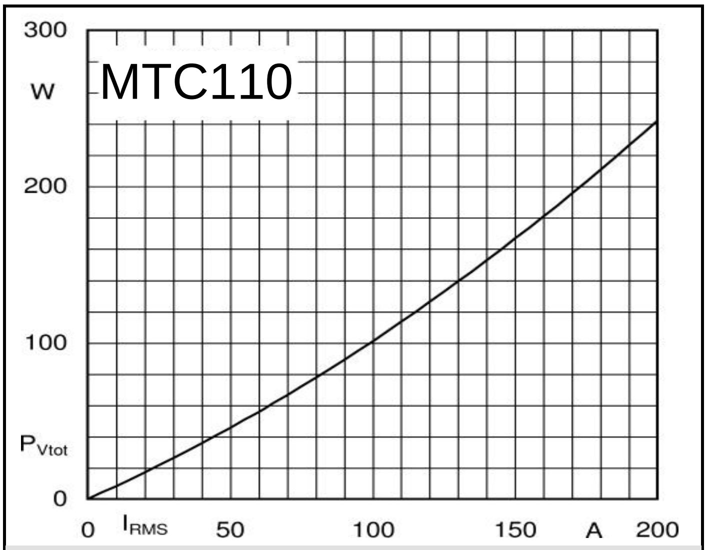


Fig. 2L Power dissipation per module vs. rms current

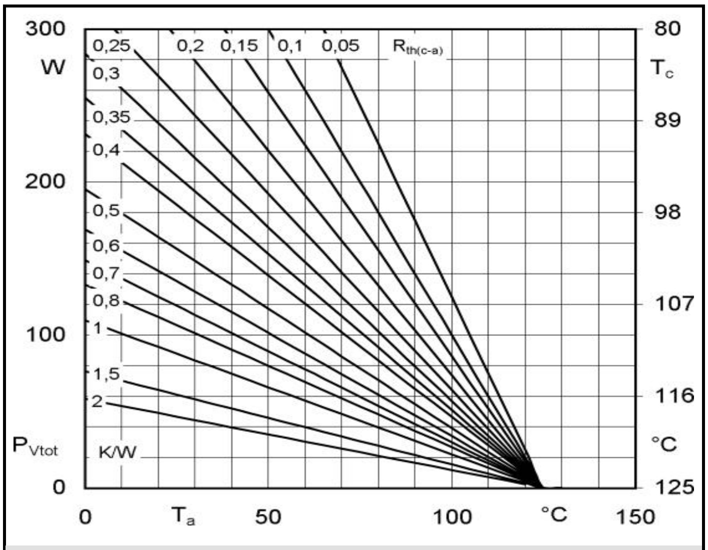


Fig. 2R Power dissipation per module vs. case temp.

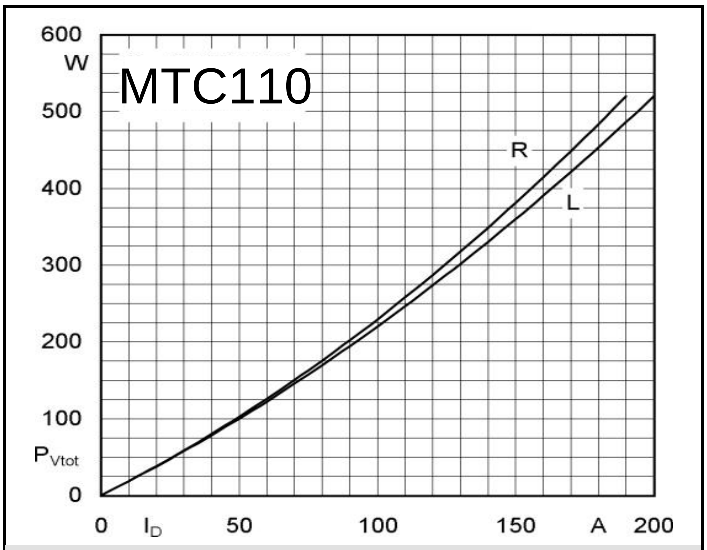


Fig. 3L Power dissipation of two modules vs. direct current

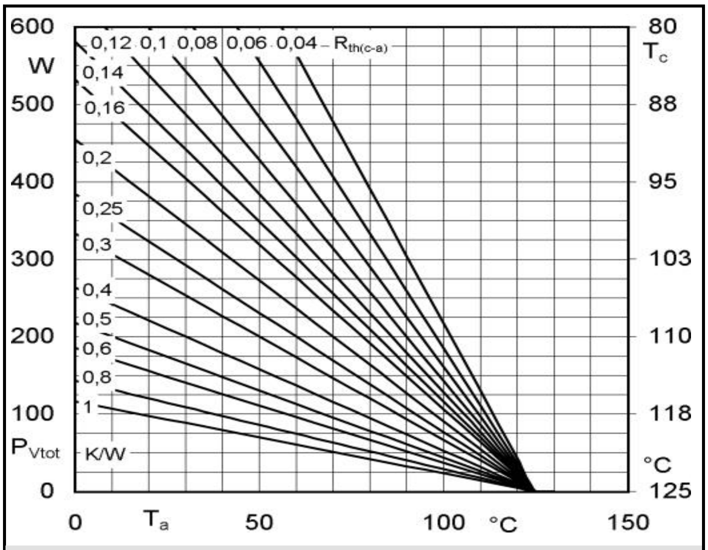


Fig. 3R Power dissipation of two modules vs. case temp.

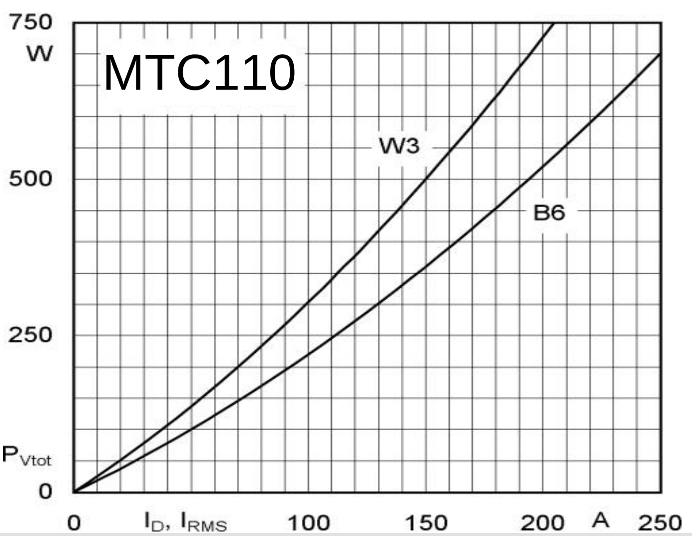


Fig. 4L Power dissipation of three modules vs. direct and rms current

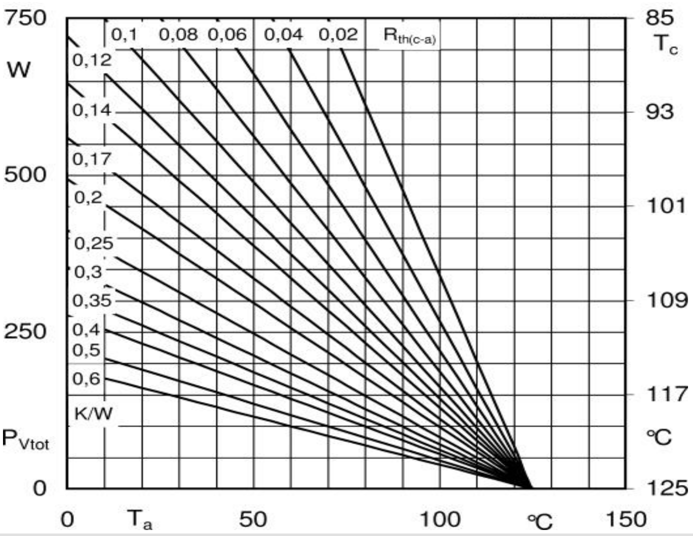


Fig. 4R Power dissipation of three modules vs. case temp.

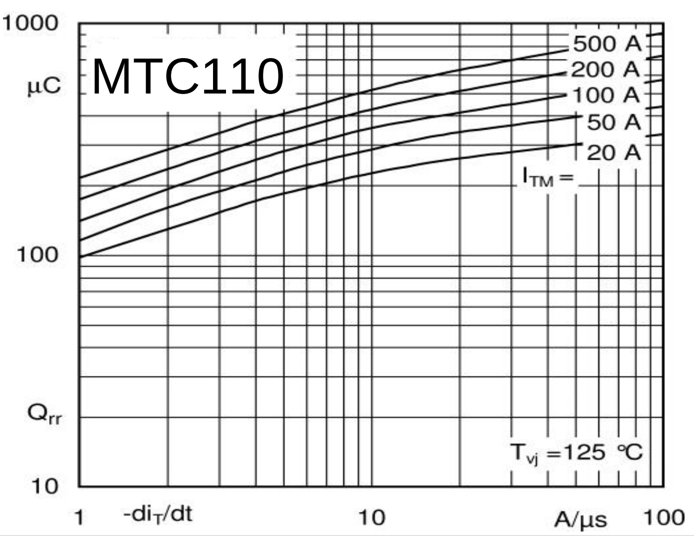


Fig. 5 Recovered charge vs. current decrease

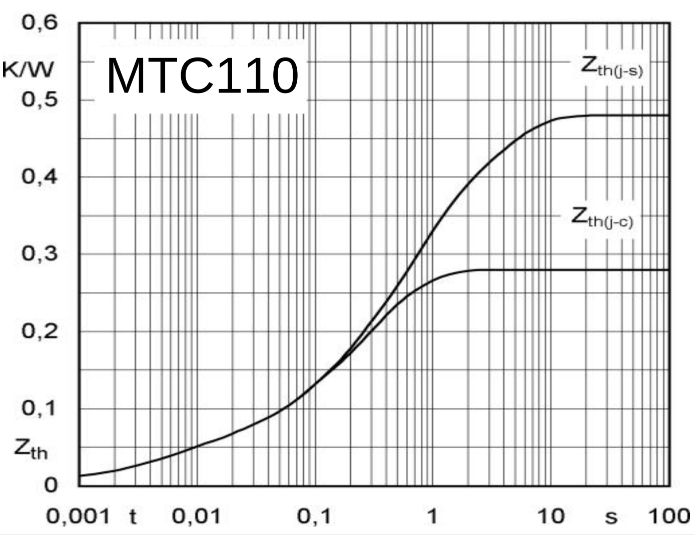


Fig. 6 Transient thermal impedance vs. time

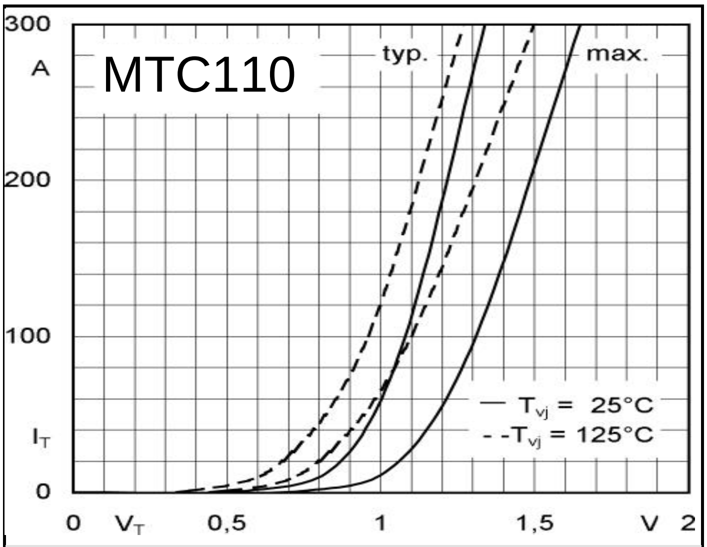


Fig. 7 On-state characteristics

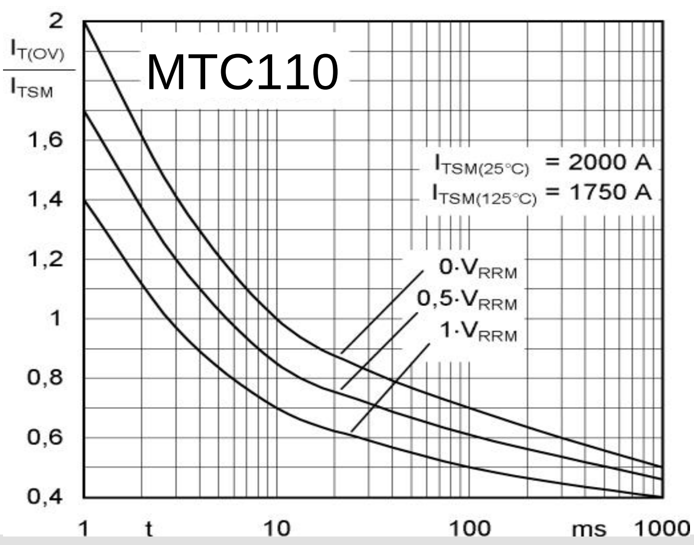


Fig. 8 Surge overload current vs. time

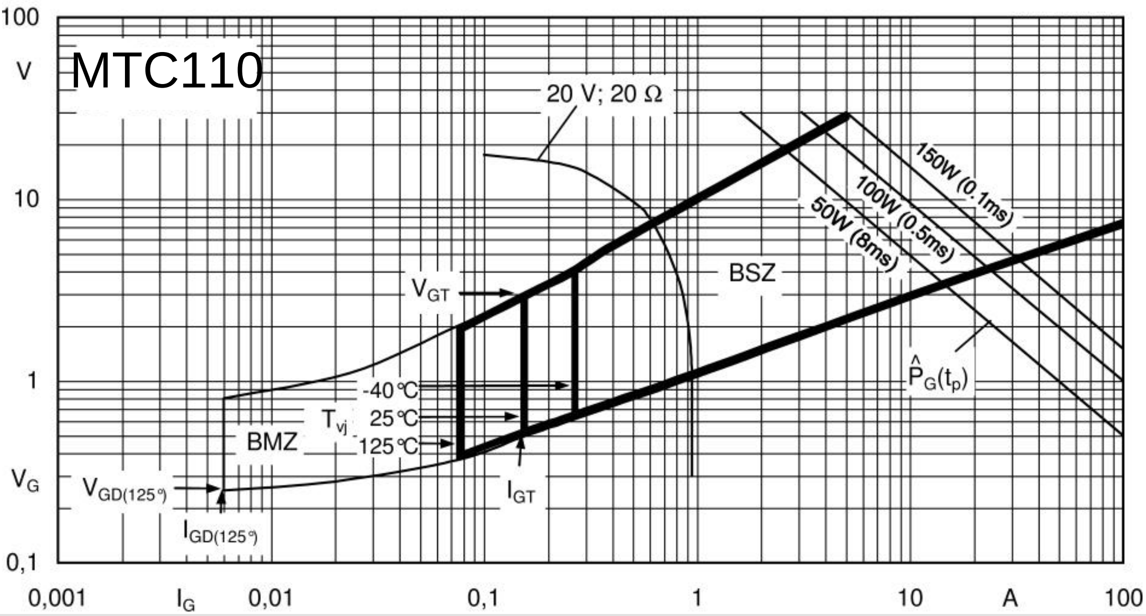


Fig. 9 Gate trigger characteristics