



Thyristor / Diode Modules

BTT 106

Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- UL recognized, file no. E 63 532

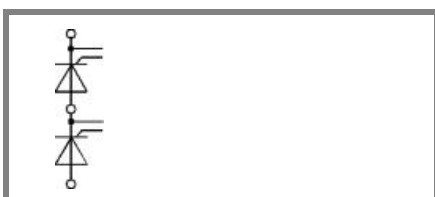
Typical Applications*

- DC motor control (e. g. for machine tools)
- AC motor soft starters
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

1) See the assembly instructions

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_{TRMS} = 180$ A (maximum value for continuous operation) $I_{TAV} = 106$ A (sin. 180; $T_c = 85$ °C)		
900	800			
1300	1200			
1500	1400			
1700	1600	BTT 106/16E	BTT 106B16E	BTT 106/16E
1900	1800			

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; $T_c = 85$ (100) °C;	106 (78)	A
I_D	P3/180F; $T_a = 35$ °C; B2 / B6	145 / 180	A
	P16/200F; $T_a = 35$ °C; B2 / B6	190 / 260	A
I_{RMS}	P3/180F; $T_a = 35$ °C; W1 / W3	200 / 3 * 140	A
I_{TSM}	$T_{vj} = 25$ °C; 10 ms	2250	A
	$T_{vj} = 130$ °C; 10 ms	1900	A
i^2t	$T_{vj} = 25$ °C; 8,3 ... 10 ms	25000	A ² s
	$T_{vj} = 130$ °C; 8,3 ... 10 ms	18000	A ² s
V_T	$T_{vj} = 25$ °C; $I_T = 300$ A	max. 1,65	V
$V_{T(TO)}$	$T_{vj} = 130$ °C	max. 0,9	V
r_T	$T_{vj} = 130$ °C	max. 2	mΩ
$I_{DD}; I_{RD}$	$T_{vj} = 130$ °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
$(di/dt)_{cr}$	$T_{vj} = 130$ °C	max. 150	A/μs
$(dv/dt)_{cr}$	$T_{vj} = 130$ °C	max. 1000	V/μs
t_q	$T_{vj} = 130$ °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}	$T_{vj} = 130$ °C; d.c.	max. 0,25	V
I_{GD}	$T_{vj} = 130$ °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 ... + 130	°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 terminal	3 ± 15 %	Nm
a		5 * 9,81	m/s ²
m	approx.	95	g
Case			



BTT

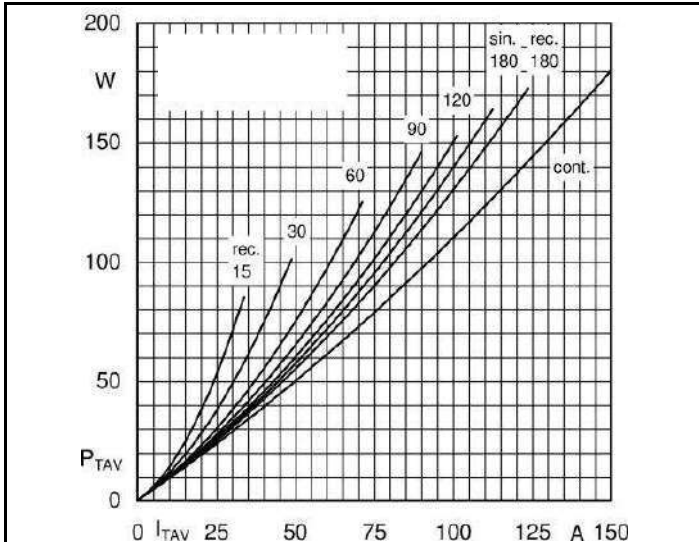


Fig. 1L Power dissipation per thyristor vs. on-state current

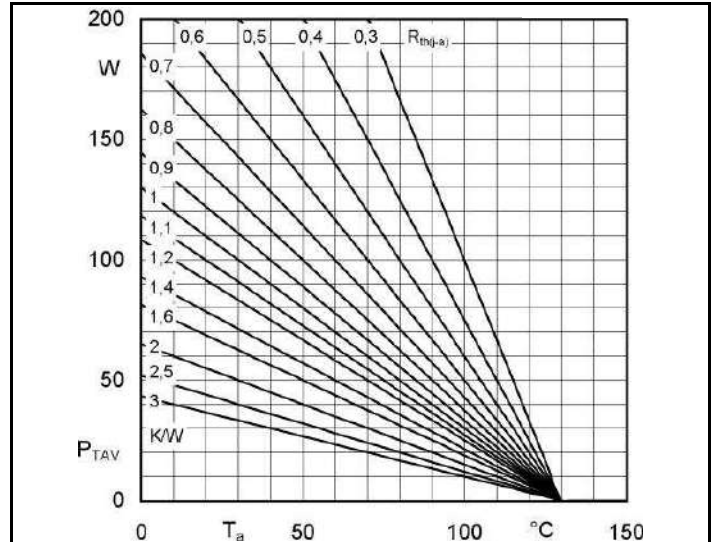


Fig. 1R Power dissipation per thyristor vs. ambient temp.

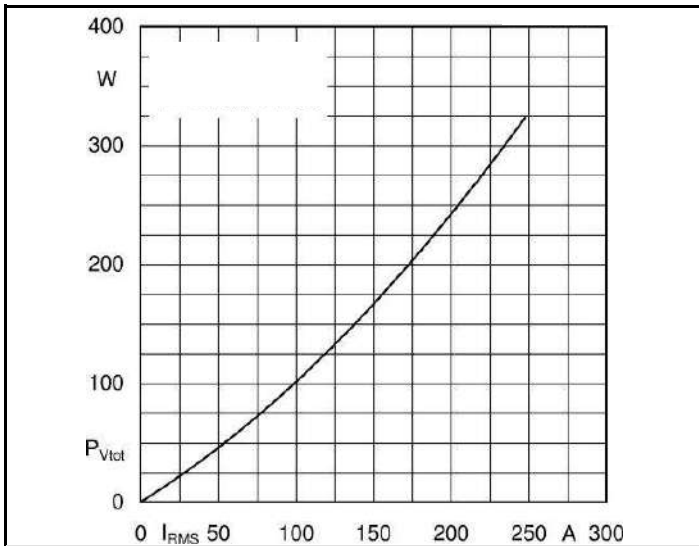


Fig. 2L Power dissipation per module vs. rms current

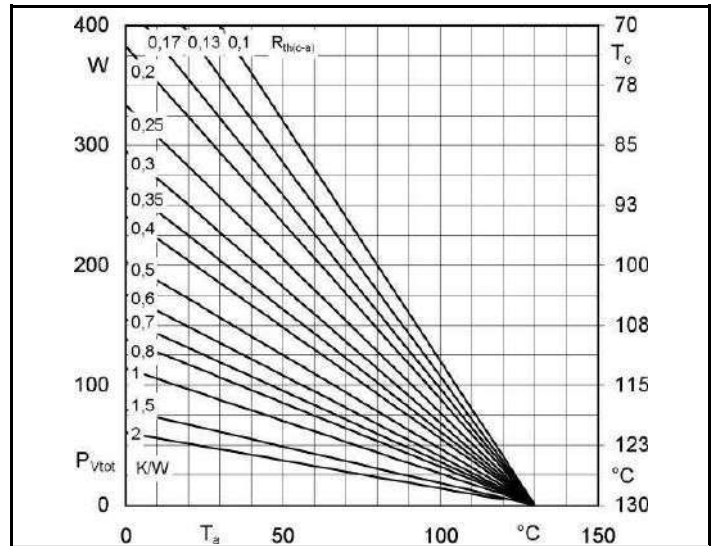


Fig. 2R Power dissipation per module vs. case temp.

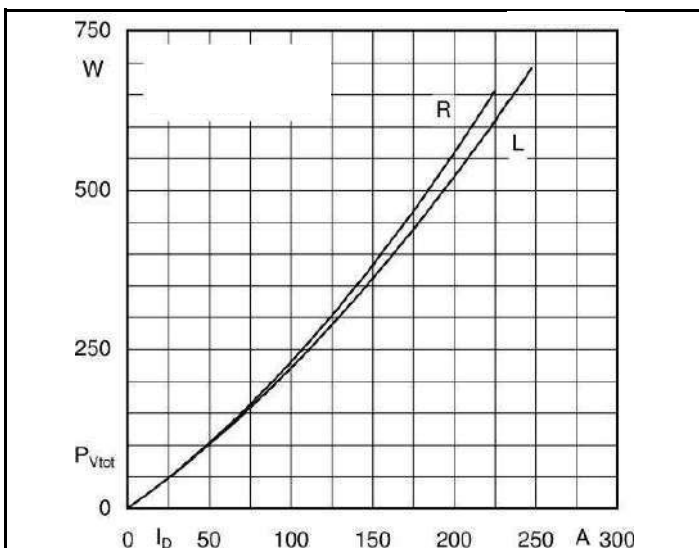


Fig. 3L Power dissipation of two modules vs. direct current

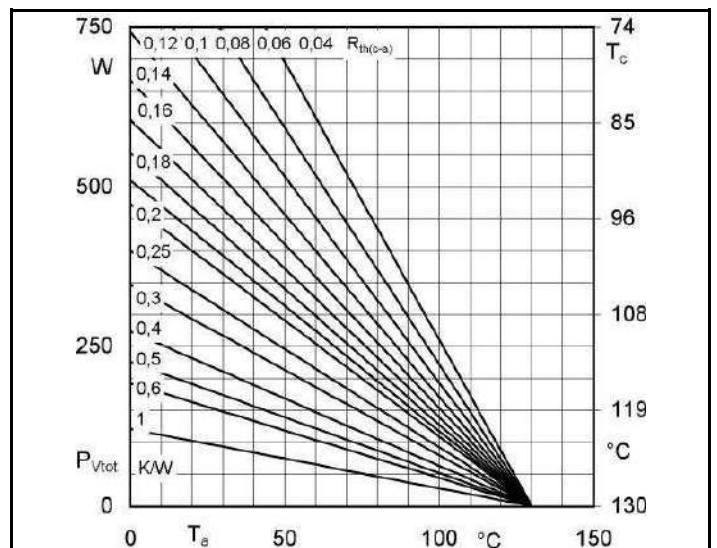
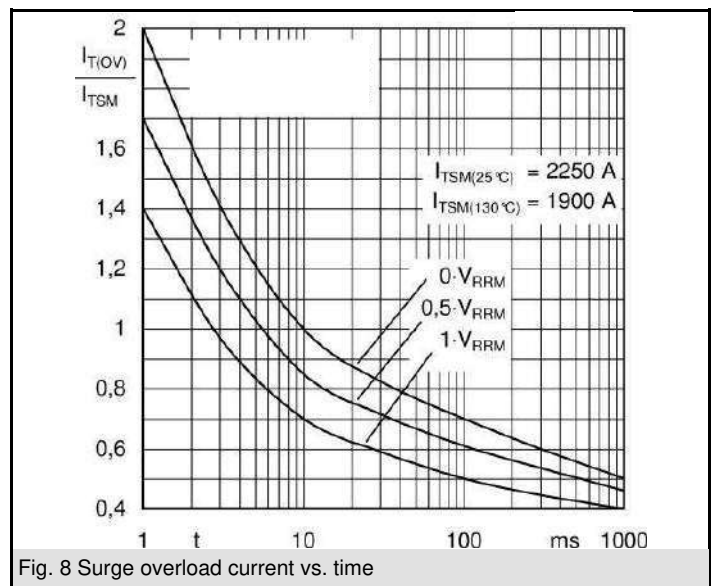
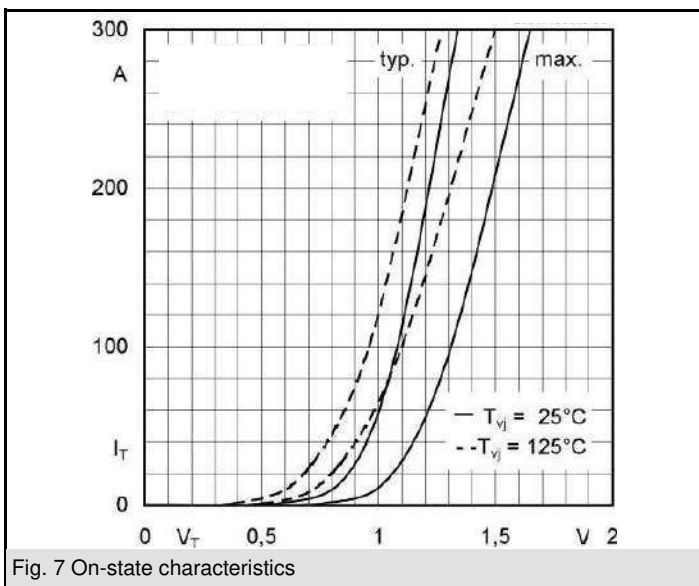
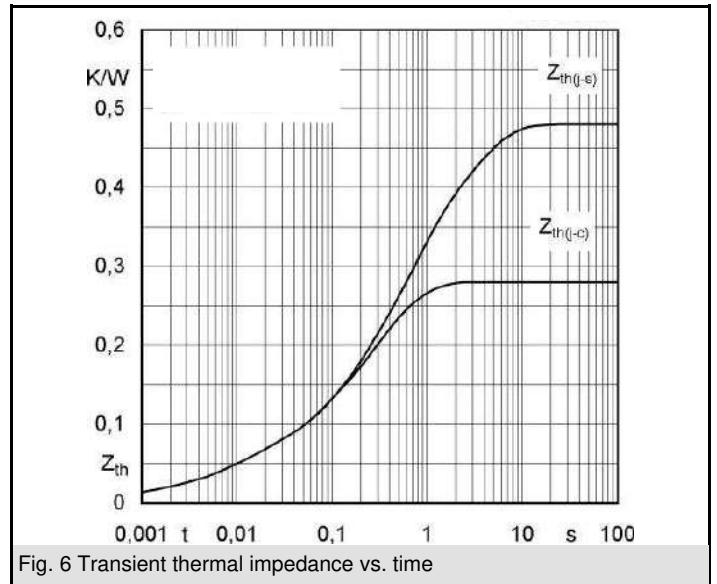
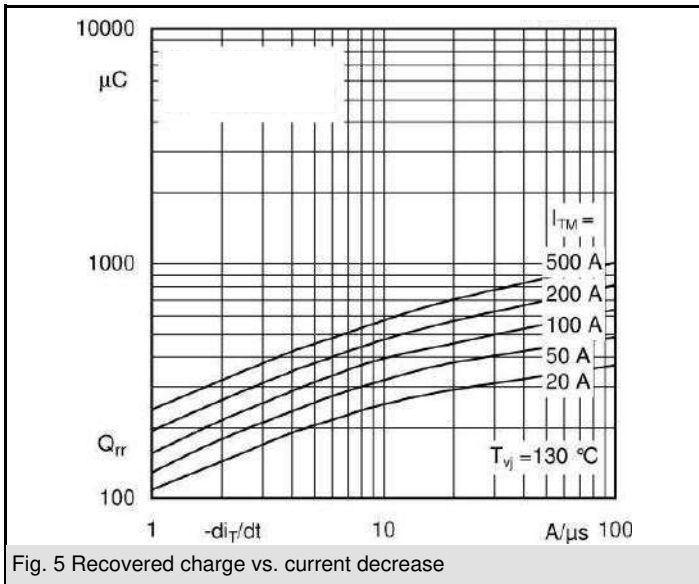
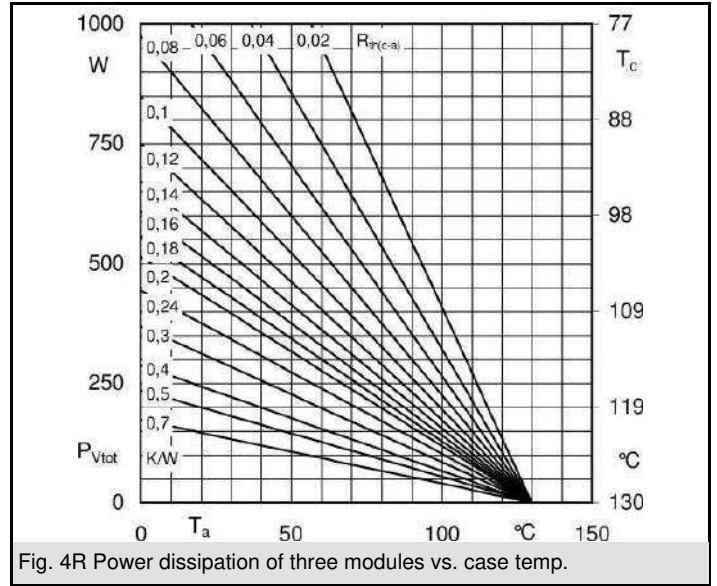
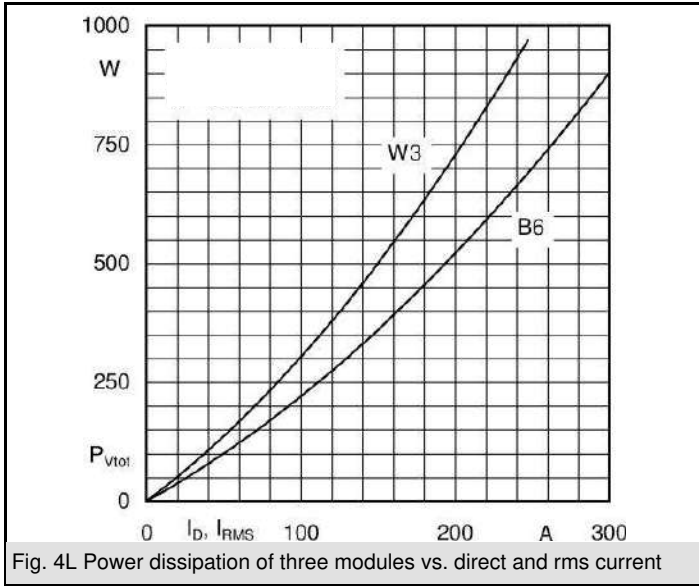


Fig. 3R Power dissipation of two modules vs. case temp.



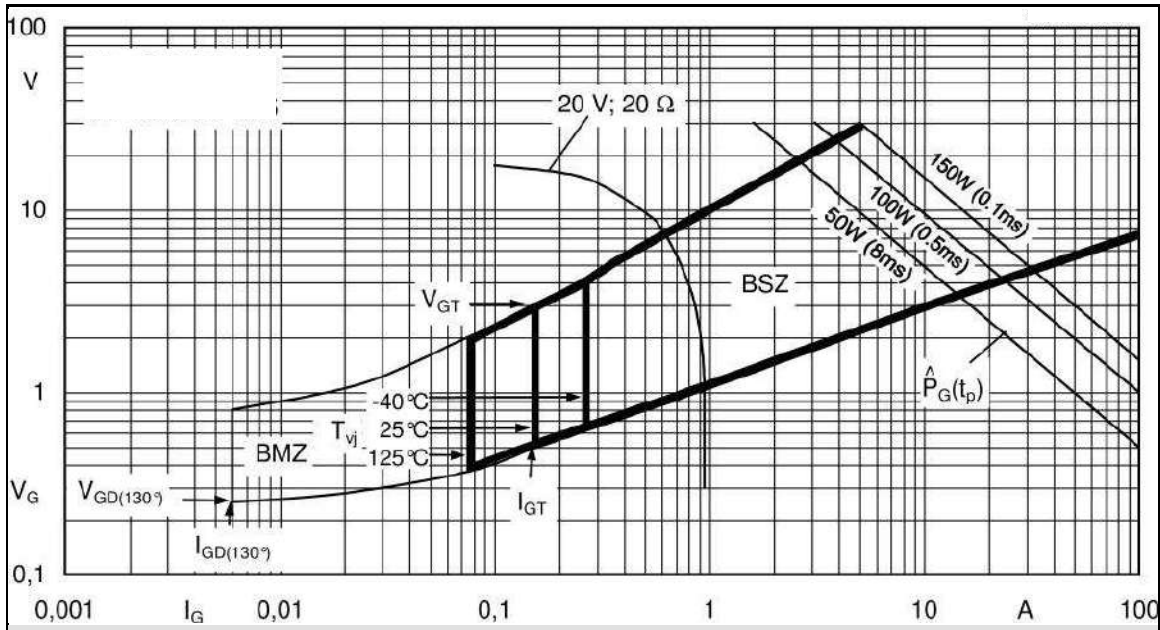
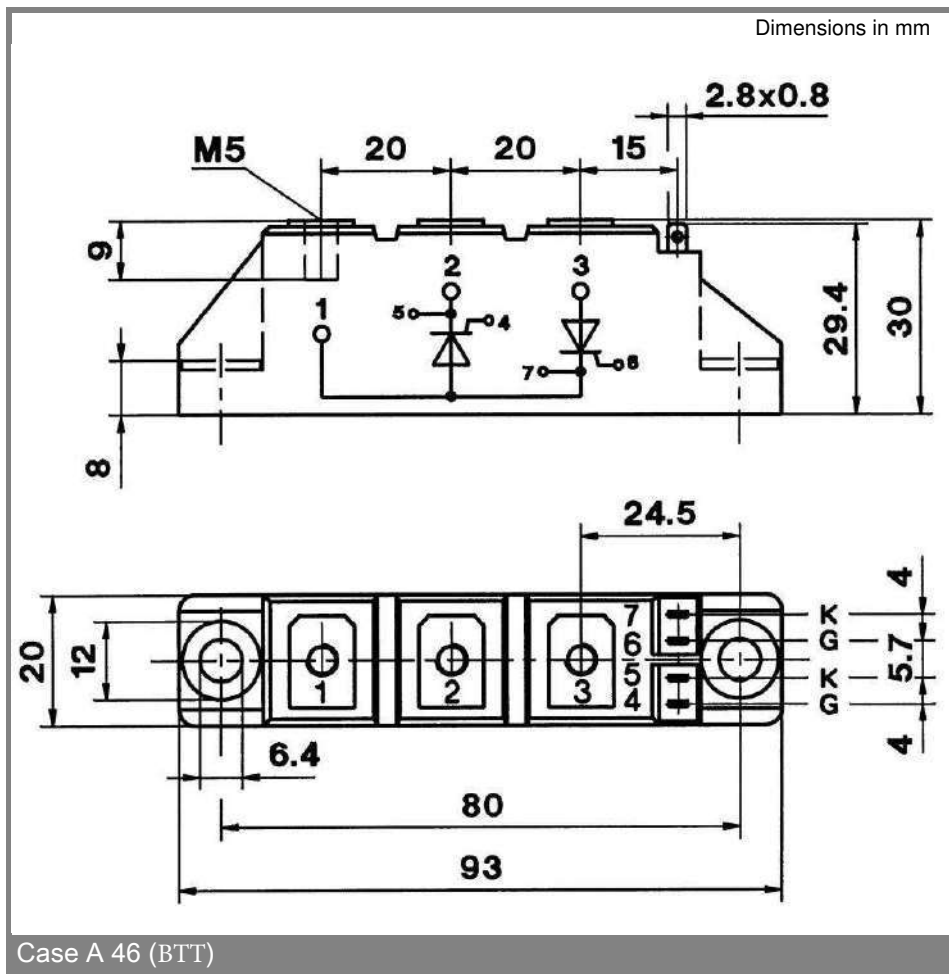


Fig. 9 Gate trigger characteristics



* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of Biltek products in life support appliances and systems is subject to prior specification and written approval by Biltek. We therefore strongly recommend prior consultation of our personal.