SKT 491

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Capsule Thyristor

V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS} = 1000 A (maximum value for continuous operation)
V	V	I_{TAV} = 490 A (sin. 180; DSC; T_c = 80 °C)
500	400	SKT 491/04E
1300	1200	SKT 491/12E
1500	1400	SKT 491/14E
1700	1600	SKT 491/16E
1900	1800	SKT 491/18E

Line Thyristor

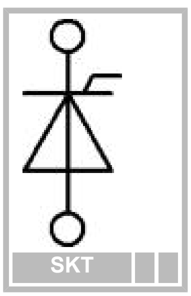
SKT 491

Features

- Hermetic metal case with ceramic insulator
- Capsule package for double sided cooling
- Shallow design with single sided cooling
- International standard case
- Off-state and reverse voltages up to 1800 V
- Amplifying gate

Typical Applications

- DC motor control (e. g. for machine tools)
- Controlled rectifiers (e. g. for battery charging)
- AC controllers (e. g. for temperature control)
- Recommended snubber network e. g. for V_{VRMS} ≤ 400 V: R = 33 •/32 W, C = 0,47 •F



Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; T_c = 100 (85) °C	321 (452)	A
I_D	2 x P8/180; T_a = 45 °C; B2 / B6	320 / 450	A
	2 x P8/180F; T_a = 35 °C; B2 / B6	760 / 1000	A
I_{RMS}	2 x P8/180; T_a = 45 °C; W1C	350	A
I_{TSM}	T_{vj} = 25 °C; 10 ms	8000	A
	T_{vj} = 125 °C; 10 ms	7000	A
i²t	T_{vj} = 25 °C; 8,3 ... 10 ms	320000	A²s
	T_{vj} = 125 °C; 8,3 ... 10 ms	245000	A²s
V_T	T_{vj} = 25 °C; I_T = 1500 A	max. 2,1	V
$V_{T(TO)}$	T_{vj} = 125 °C	max. 1,1	V
r_T	T_{vj} = 125 °C	max. 0,7	m•
I_{DD}; I_{RD}	T_{vj} = 125 °C; V_{RD} = V_{RRM}; V_{DD} = V_{DRM}	max. 50	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}	1	µs
$(di/dt)_{cr}$	T_{vj} = 125 °C	max. 125	A/µs
$(dv/dt)_{cr}$	T_{vj} = 125 °C	max. 1000	V/µs
t_q	T_{vj} = 125 °C	50 ... 150	µs
I_H	T_{vj} = 25 °C; typ. / max.	150 / 500	mA
I_L	T_{vj} = 25 °C; R_G = 33 Ω; typ. / max.	500 / 2000	mA
V_{GT}	T_{vj} = 25 °C; d.c.	min. 3	V
I_{GT}	T_{vj} = 25 °C; d.c.	min. 250	mA
V_{GD}	T_{vj} = 125 °C; d.c.	max. 0,25	V
I_{GD}	T_{vj} = 125 °C; d.c.	max. 10	mA
$R_{th(j-c)}$	cont.; DSC	0,045	K/W
$R_{th(j-c)}$	sin. 180; DSC / SSC	0,047 / 0,1	K/W
$R_{th(j-c)}$	rec. 120; DSC / SSC	0,054 / 0,113	K/W
$R_{th(c-s)}$	DSC / SSC	0,012 / 0,024	K/W
T_{vj}		- 40 ... + 125	°C
T_{stg}		- 40 ... + 130	°C
V_{isol}		-	V~
F	mounting force	5,2 ... 8	kN
a			m/s²
m	approx.	105	g
Case		B 11	

Diagrams

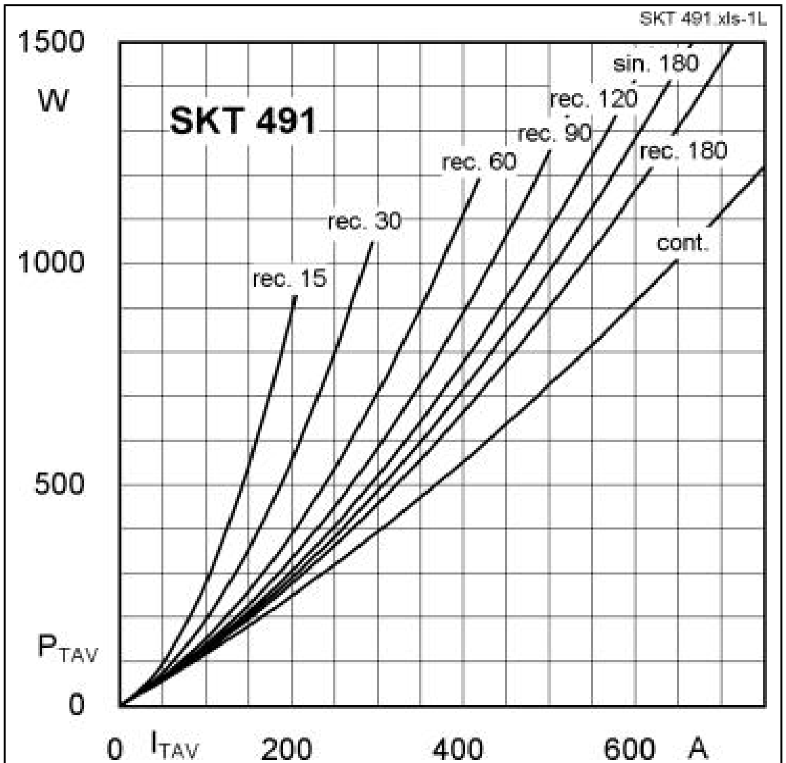


Fig. 1L Power dissipation vs. on-state current

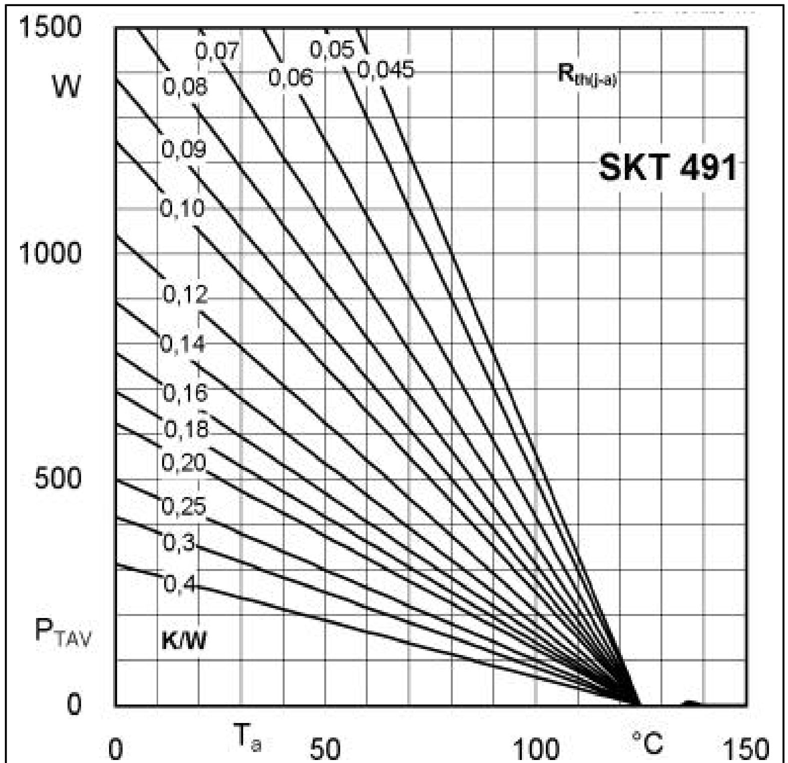


Fig. 1R Power dissipation vs. ambient temperature

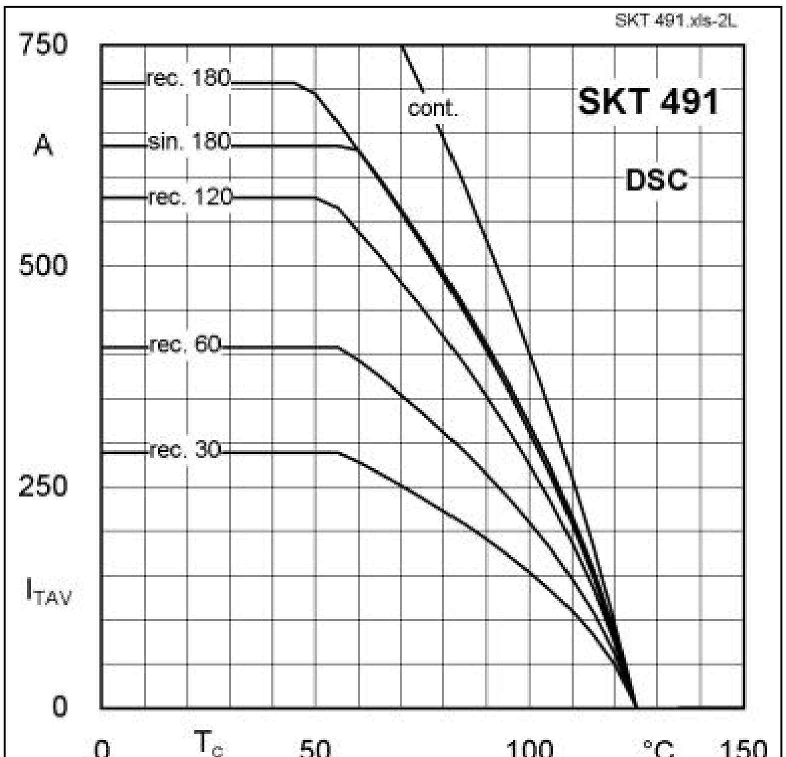


Fig. 2L Rated on-state current vs. case temperature

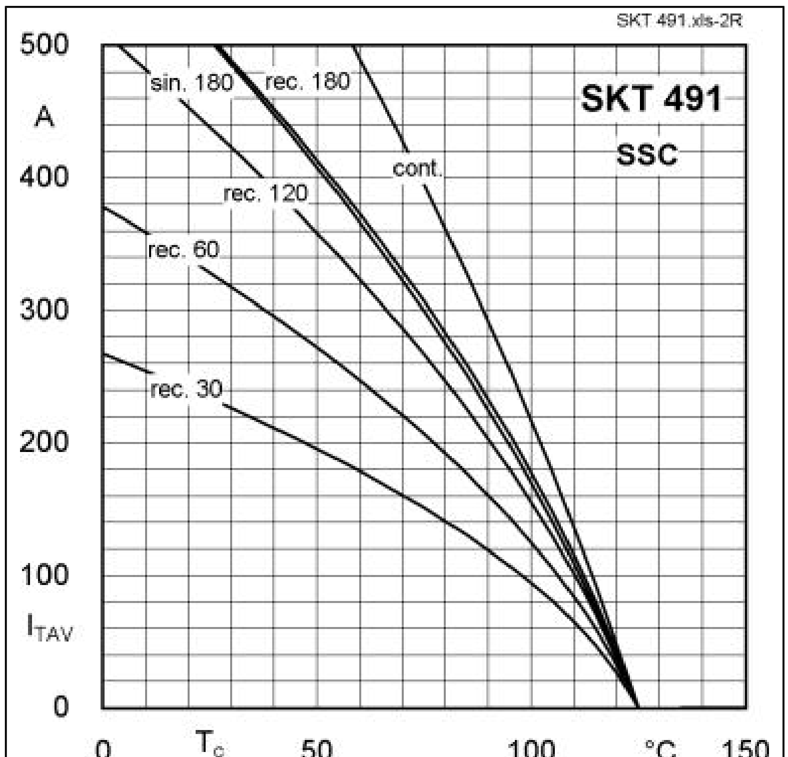


Fig. 2R Rated on-state current vs. case temperature

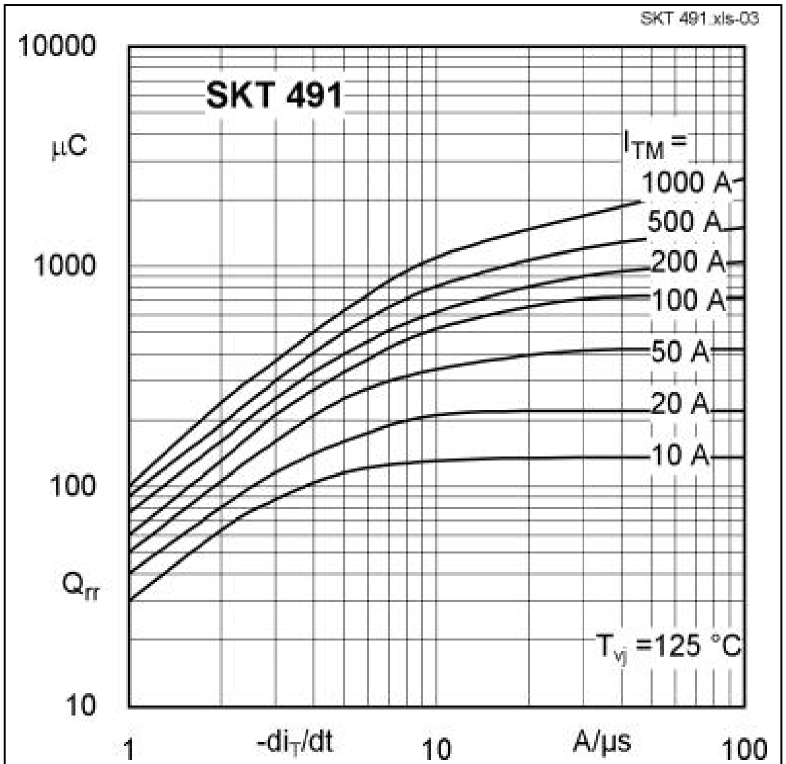


Fig. 3 Recovered charge vs. current decrease

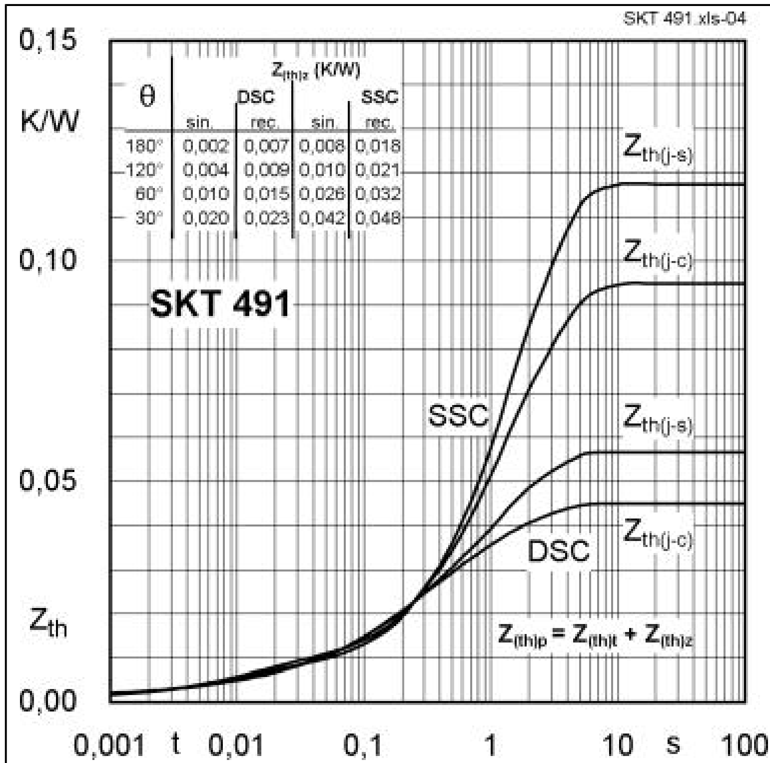


Fig. 4 Transient thermal impedance vs. time

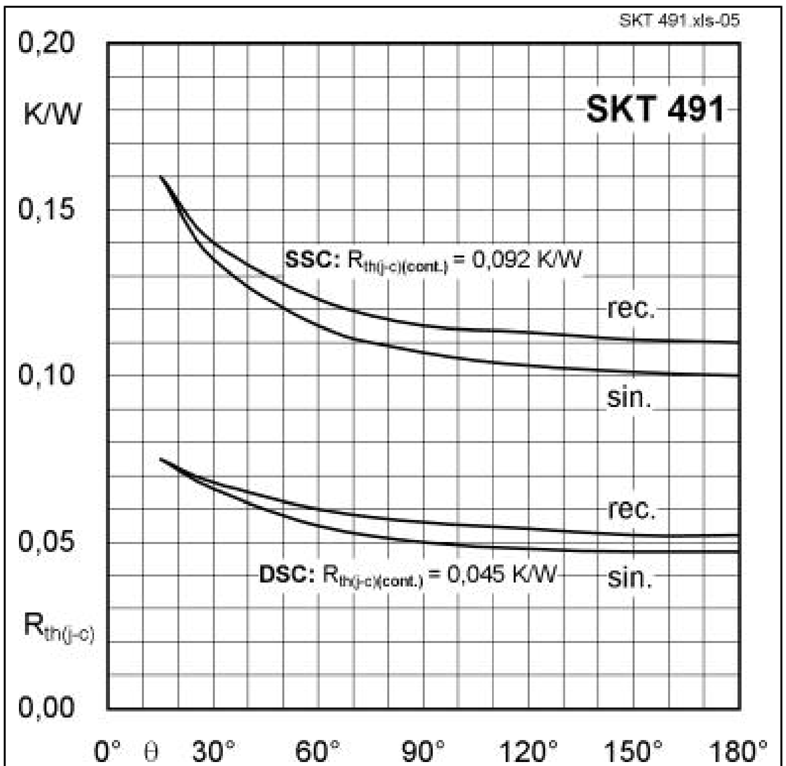


Fig. 5 Thermal resistance vs. conduction angle

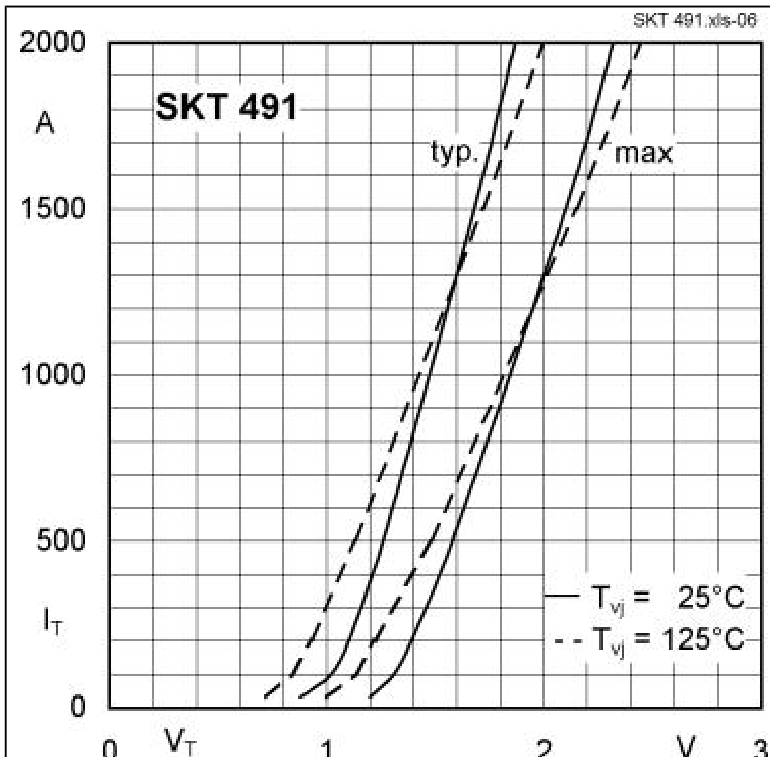


Fig. 6 On-state characteristics

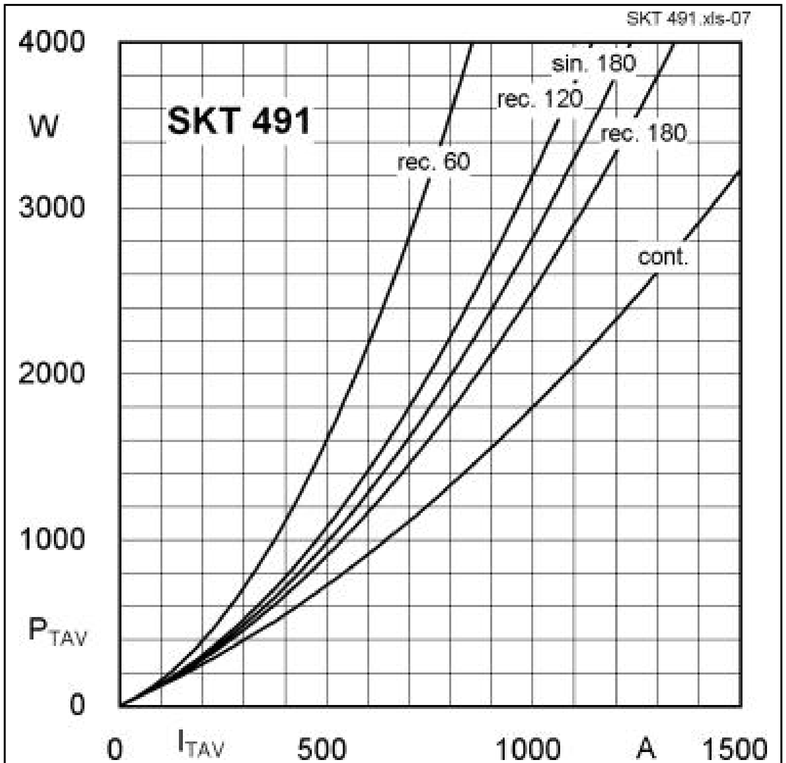


Fig. 7 Power dissipation vs. on-state current

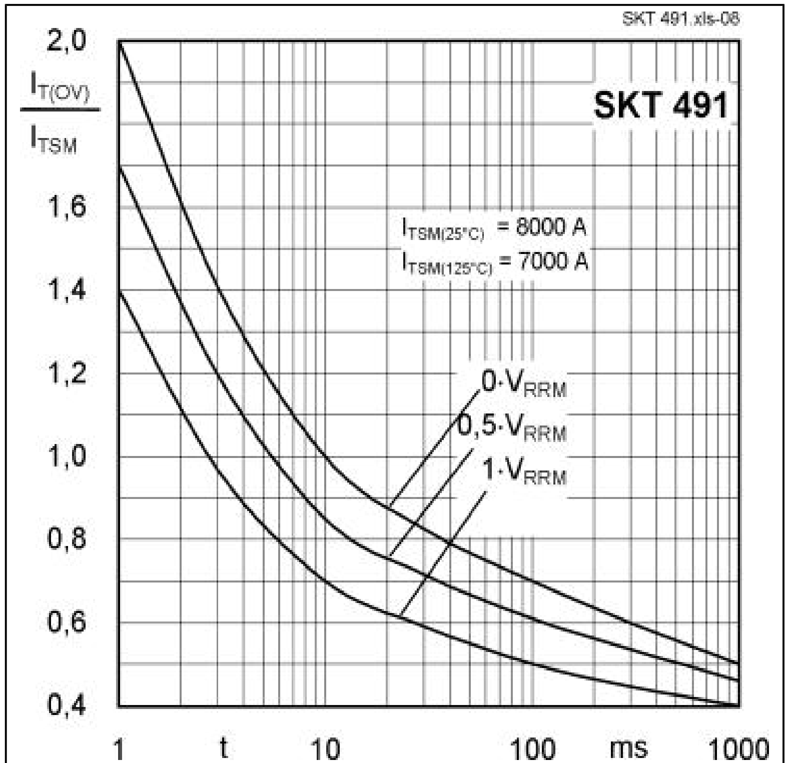


Fig. 8 Surge overload current vs. time

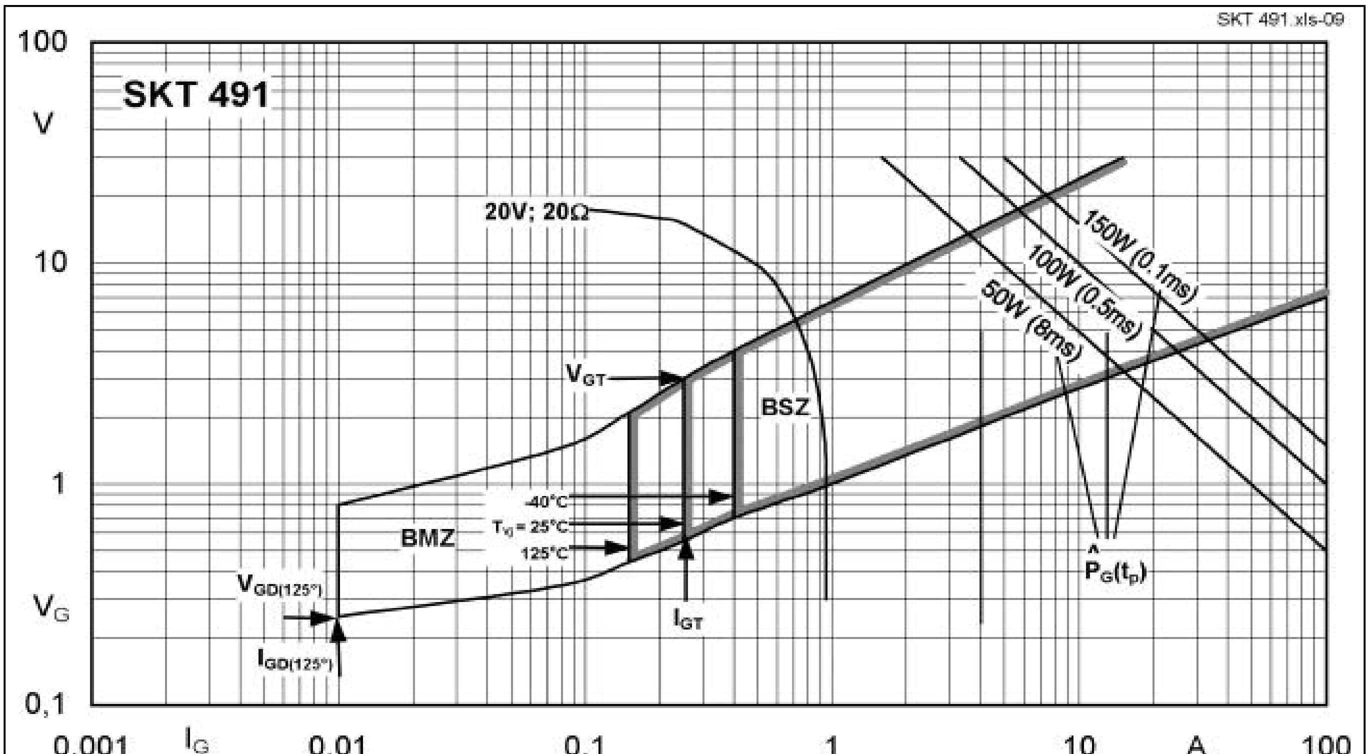
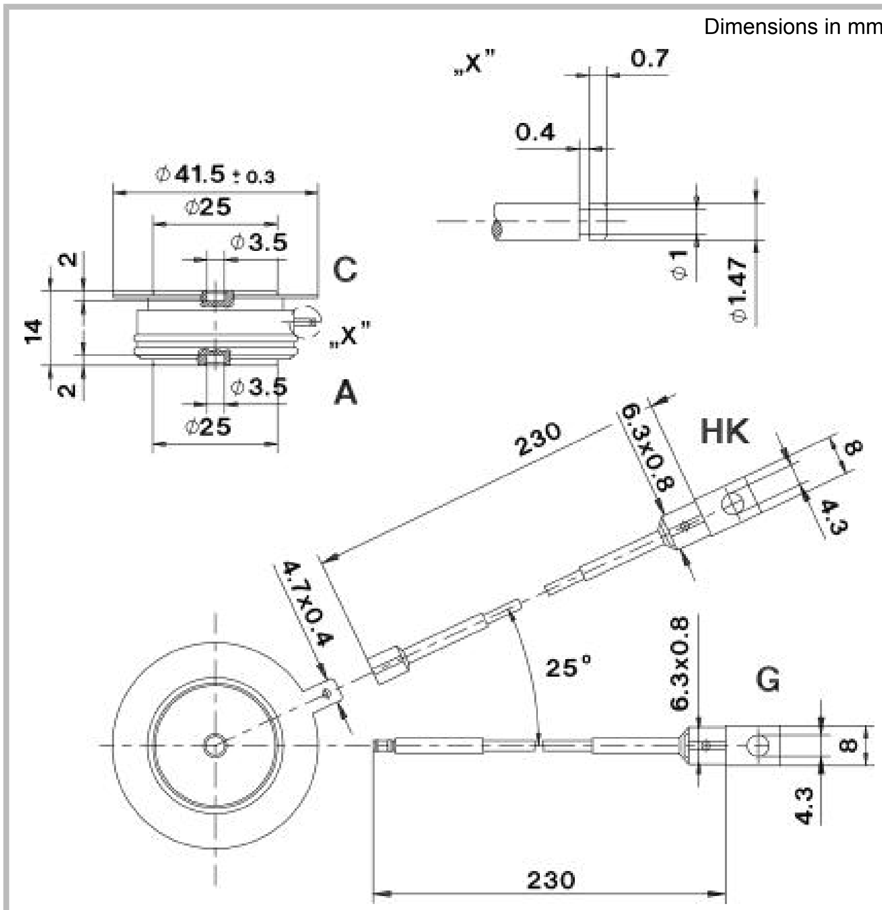


Fig. 9 Gate trigger characteristics

Cases / Circuits



Case B 11 (JEDEC: TO-200AB)

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