

V _{RRM}	V _{DRM}	(dv/dt) _{cr}	I _{TRMS} (maximum values for continuous operation)			
			370 A	420 A	370 A	420 A
V	V	V/μs	I _{TAV} (sin. 180; T _{case} = 85 °C)			
			230 A	253 A	230 A	250 A
			SKKT	SKKT	SKKH	SKKH
900	800	500	213/08 D	253/08 D	–	253/08 D
1300	1200	1000	213/12 E	253/12 E	213/12 E	253/12 E
1500	1400	1000	213/14 E	253/14 E	213/14 E	253/14 E
1700	1600	1000	213/16 E	253/16 E	213/16 E	253/16 E
1900	1800	1000	213/18 E	253/18 E	213/18 E	253/18 E
2100	2000	1000	213/20 E	–	213/20 E	–
2300	2200	1000	213/22 E	–	213/22 E	–

Symbol	Conditions	SKKT 213 SKKH 213	SKKT 253 SKKH 253	Units
I _{TAV}	sin. 180; (T _{case} = ...)	213 (90°C)	253 (85°C)	A
I _D	B2/B6 T _{amb} = 35 °C	354/456	387/502	A
I _{RMS}	W1/W3 P 16/200 F	425/3 x 360	465/3 x 400	A
I _{TSM}	T _{vj} = 25 °C; 10 ms	8 500	9 000	A
	T _{vj} = 130 °C; 10 ms	7 500	8 000	A
i ² t	T _{vj} = 25 °C; 8,3 ... 10 ms	361 000	405 000	A ² s
	T _{vj} = 130 °C; 8,3 ... 10 ms	281 000	320 000	A ² s
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	250		A/μs
t _q	T _{vj} = 130 °C	typ. 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.	0,3 / 2		A
V _T	T _{vj} = 25 °C; I _T = 750 A	max. 1,9	max. 1,7	V
V _{T(TO)}	T _{vj} = 130 °C	0,95	0,85	V
r _T	T _{vj} = 130 °C	1,3	1,1	mΩ
I _{DD} ; I _{RD}	T _{vj} = 130 °C; V _{RD} = V _{RRM} V _{DD} = V _{DRM}	50	50	mA
V _{GT}	T _{vj} = 25 °C; d.c.	3		V
I _{GT}	T _{vj} = 25 °C; d.c.	200		mA
V _{GD}	T _{vj} = 130 °C; d.c.	0,25		V
I _{GD}	T _{vj} = 130 °C; d.c.	10		mA
R _{thjc}	cont. } sin. 180 } per thyristor / rec. 120 } per module	0,11 / 0,055		°C/W
		0,115 / 0,057		°C/W
		0,125 / 0,0625		°C/W
R _{thch}		0,08 / 0,04		°C/W
T _{vj} , T _{stg}		– 40 ... + 130		°C
V _{isol}	a. c. 50 Hz; r.m.s.; 1 s/1 min	3600 / 3000		V~
M ₁	to heatsink } SI (US) units	5 (44 lb. in.) ± 15 % ¹⁾		Nm
M ₂	to terminals }	9 (80 lb. in.) ± 15 % ²⁾		Nm
a		5 · 9,81		m/s ²
w	approx.	430		g
Case	→ page B 1 – 86	SKKT: A 43 SKKH: A 56		

1) See the assembly instructions

2) The screws must be lubricated

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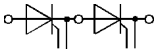
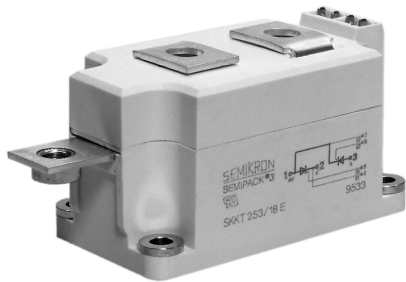
Thyristor / Diode Modules

SKKT 213

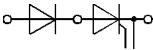
SKKH 213

SKKT 253

SKKH 253



SKKT



SKKH

Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Chip soldered on direct copper bonded Al₂O₃ ceramic
- Thyristor with amplifying gate
- UL recognized, file no. E 63 532

Typical Applications

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

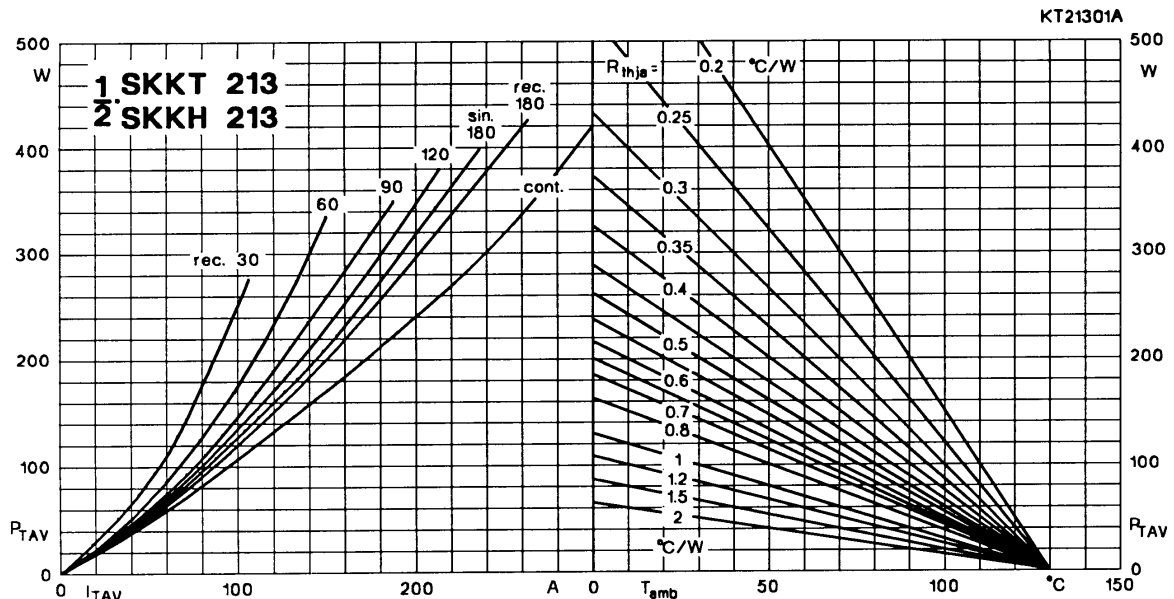


Fig. 1 a Power dissipation per thyristor vs. on-state current and ambient temperature

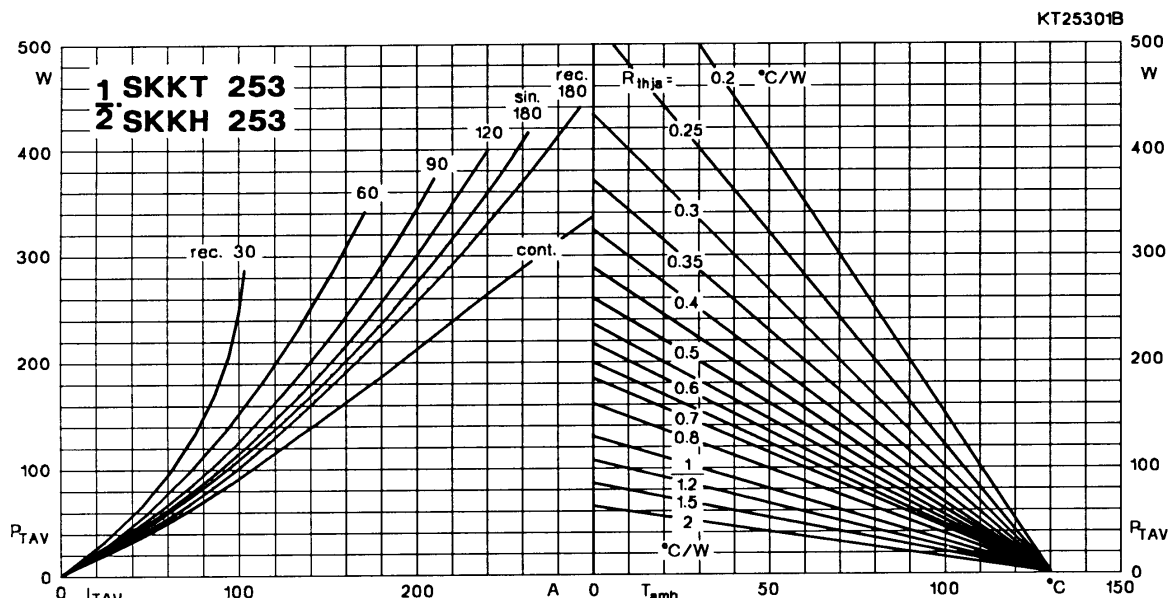


Fig. 1 b Power dissipation per thyristor vs. on-state current and ambient temperature

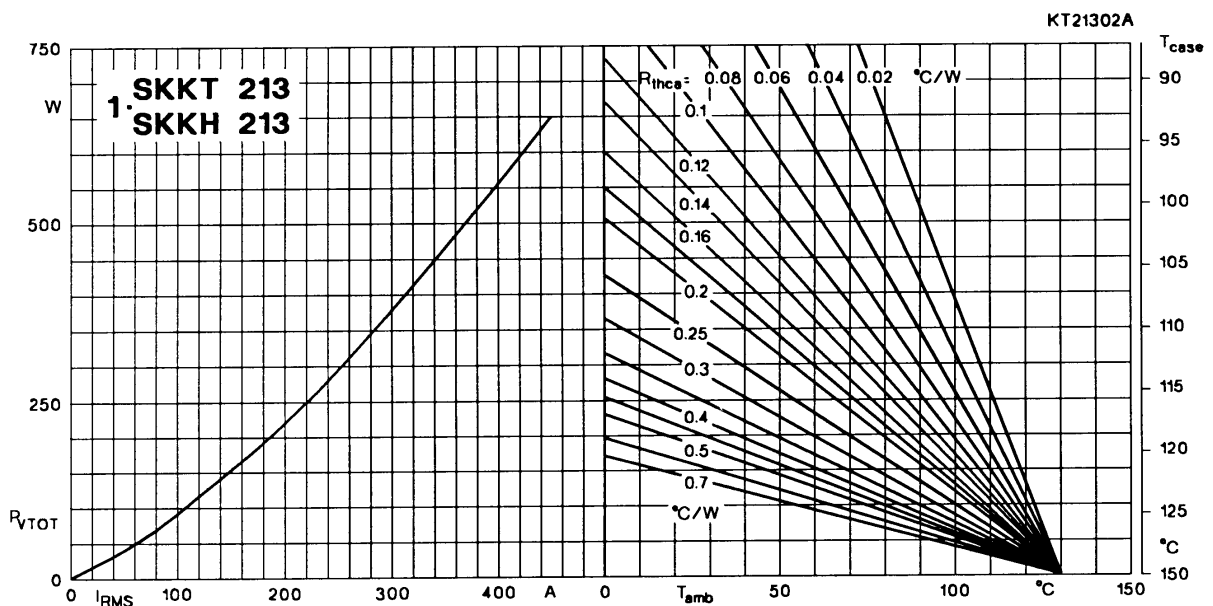


Fig. 2 a Power dissipation per module vs. rms current and case temperature

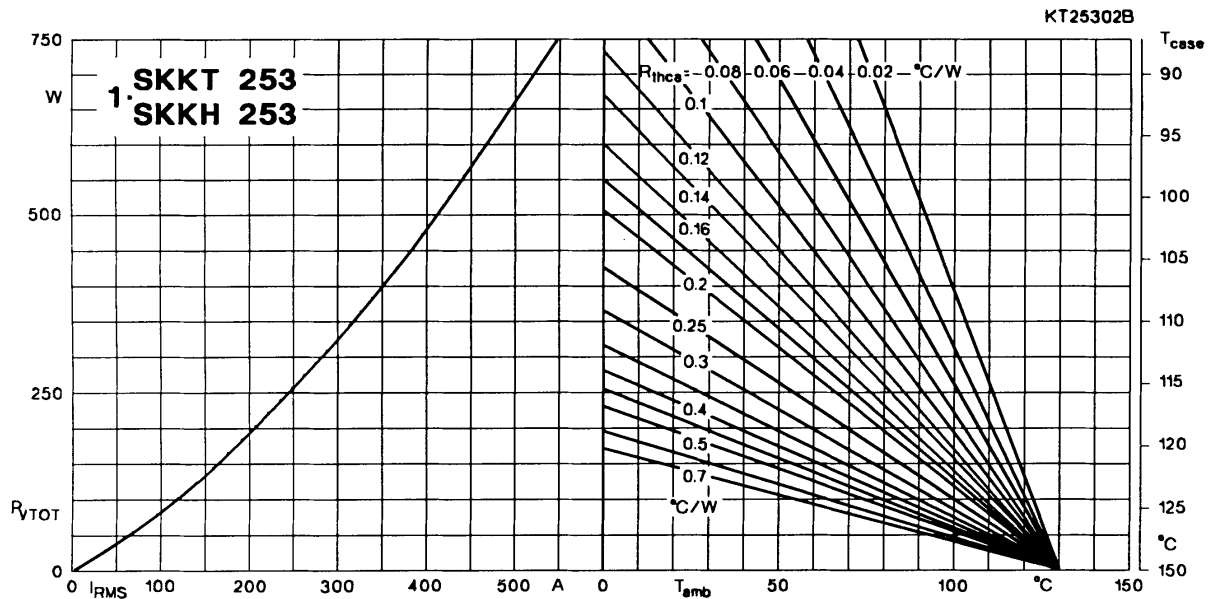


Fig. 2 b Power dissipation per module vs. rms current and case temperature

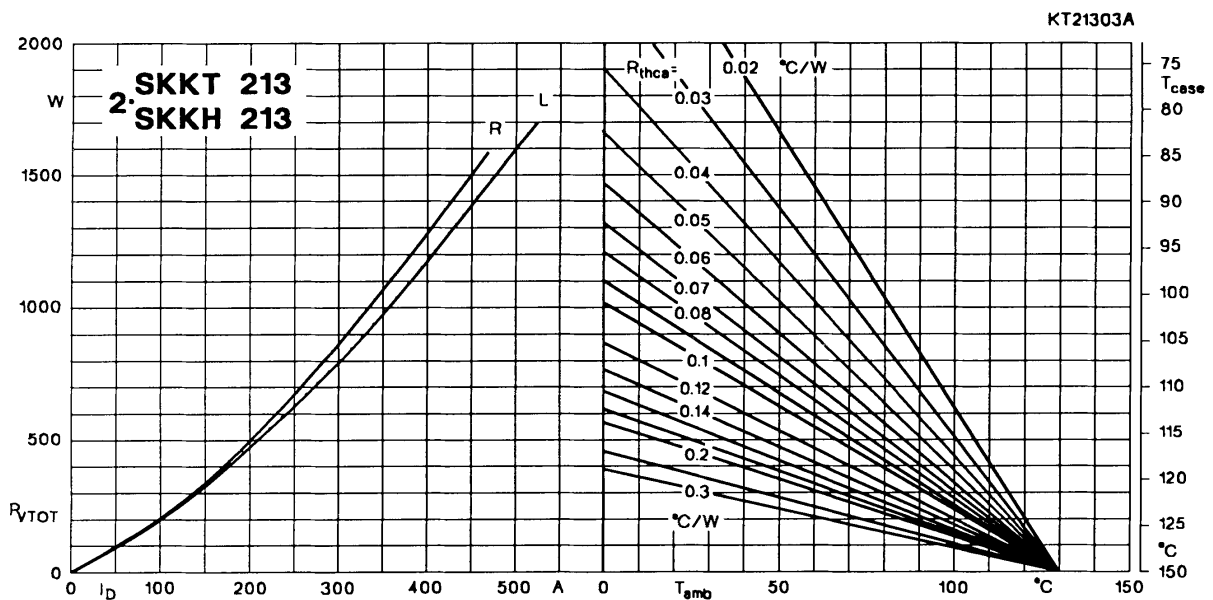


Fig. 3 a Power dissipation of two modules vs. direct current and case temperature

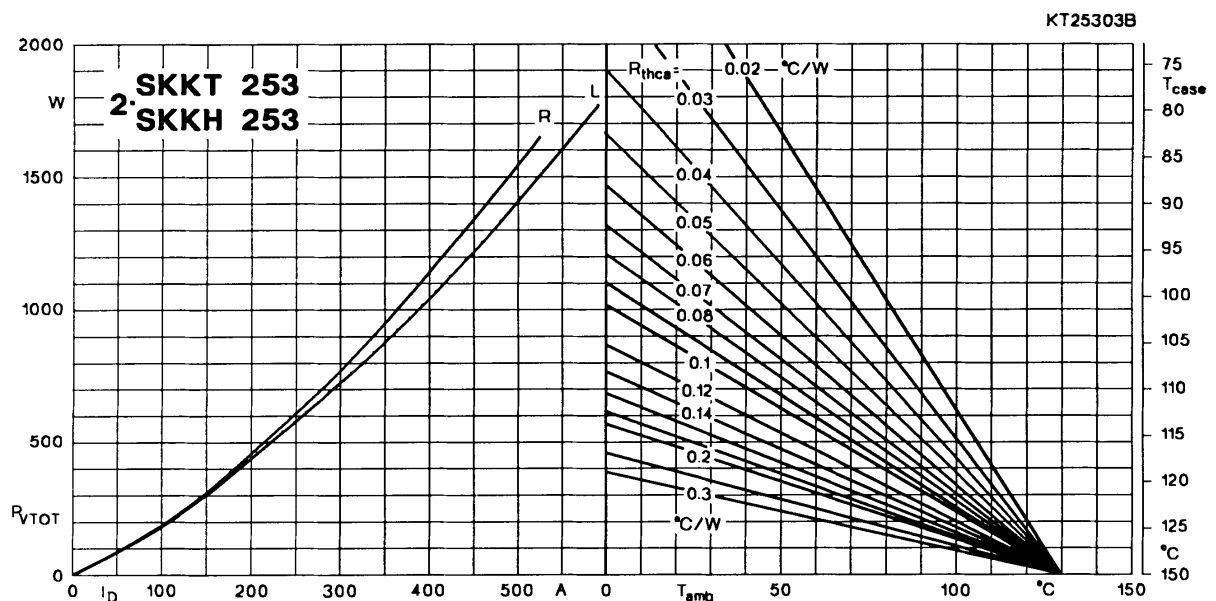


Fig. 3 b Power dissipation of two modules vs. direct current and case temperature

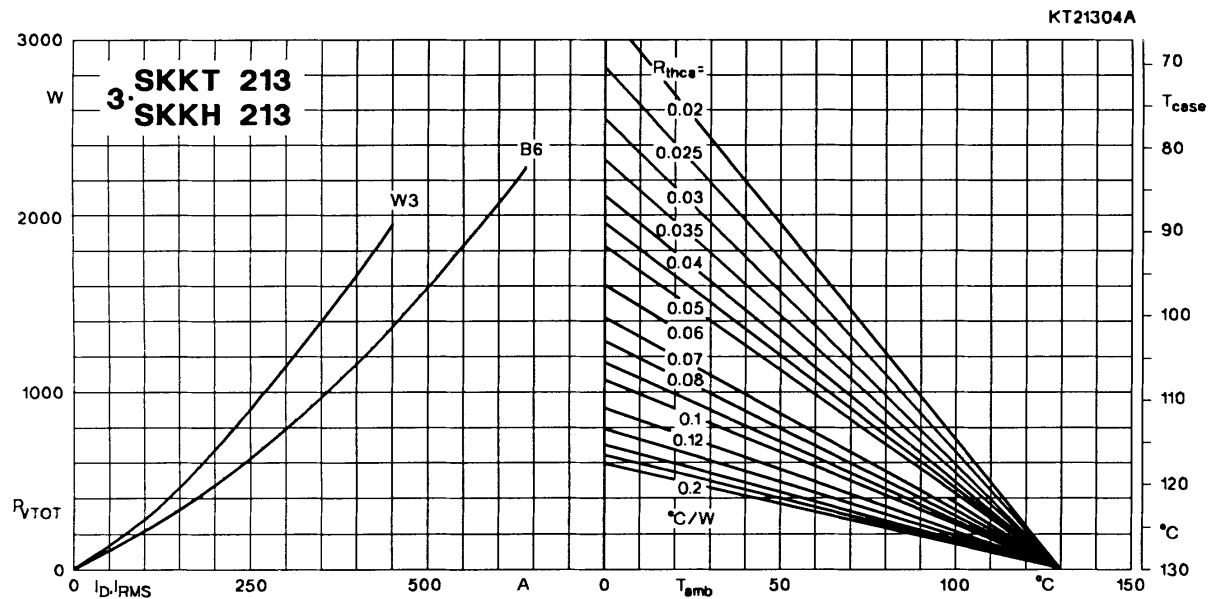


Fig. 4 a Power dissipation of three modules vs. direct and rms current and case temperature

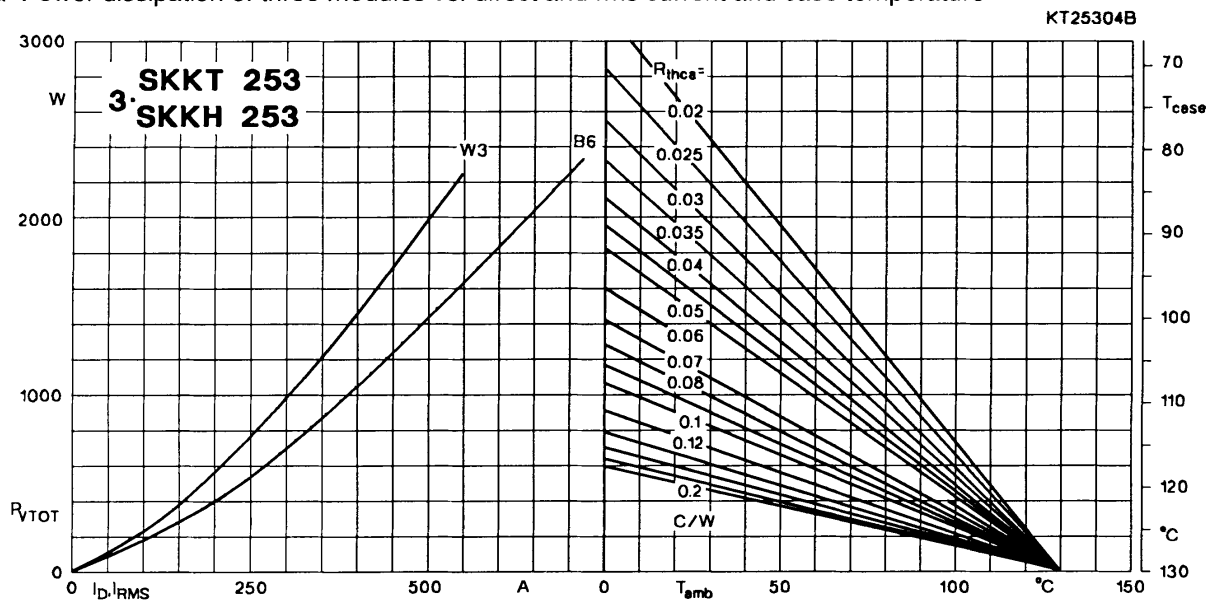


Fig. 4 b Power dissipation of three modules vs. direct and rms current and case temperature

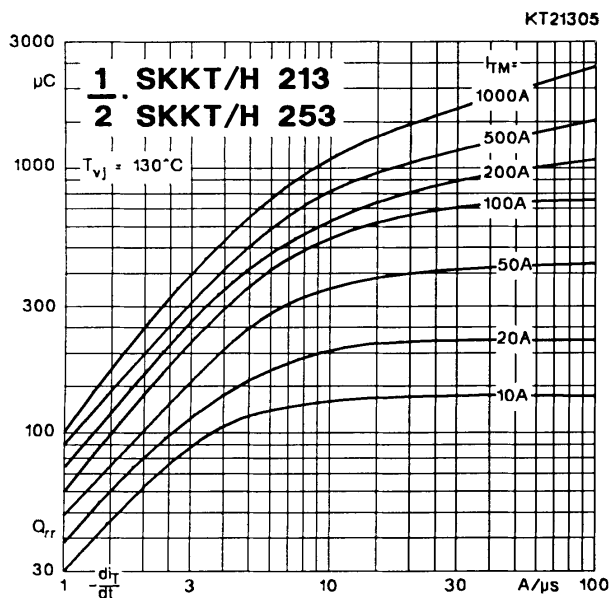


Fig. 5 Recovered charge vs. current decrease

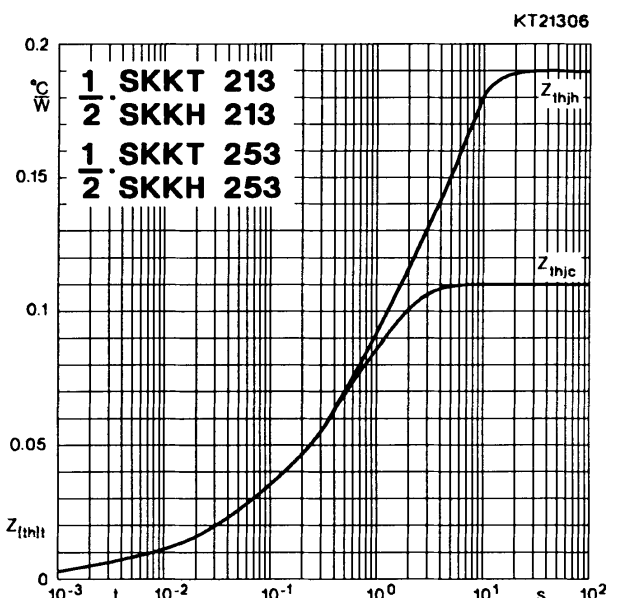


Fig. 6 Transient thermal impedance vs. time

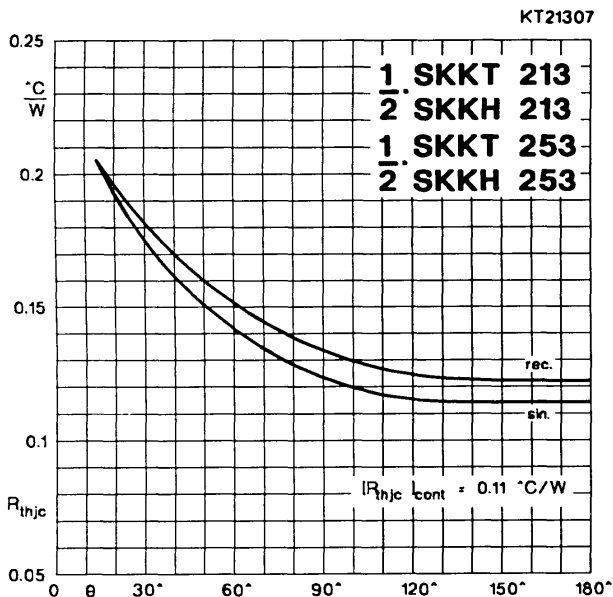


Fig. 7 Thermal resistance vs. conduction angle

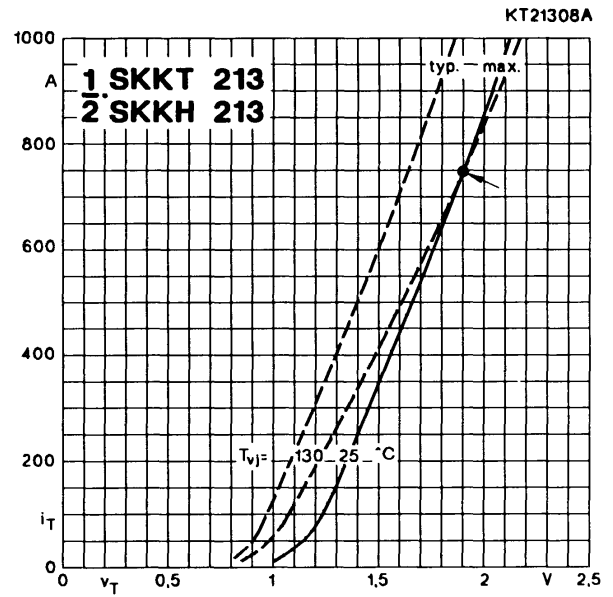


Fig. 8 a On-state characteristics

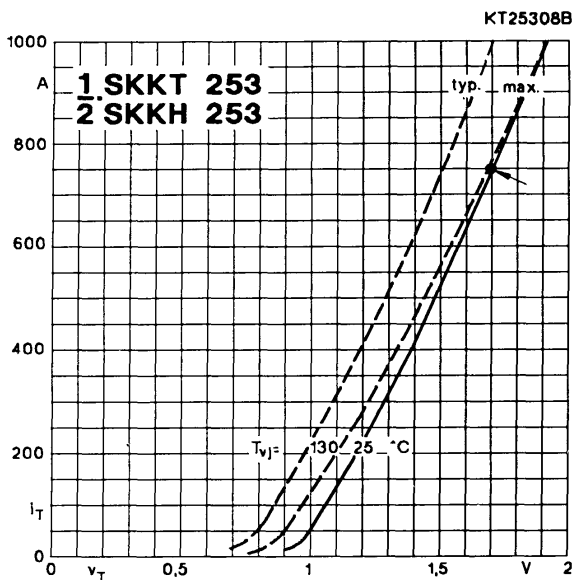


Fig. 8 b On-state characteristics

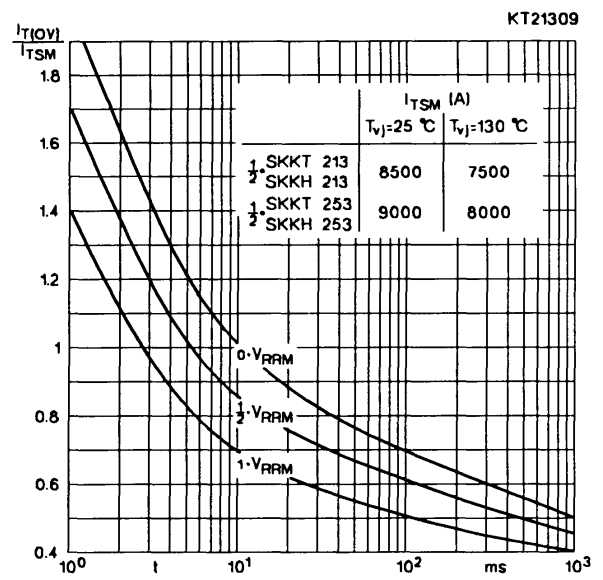


Fig. 9 Surge overload current vs. time

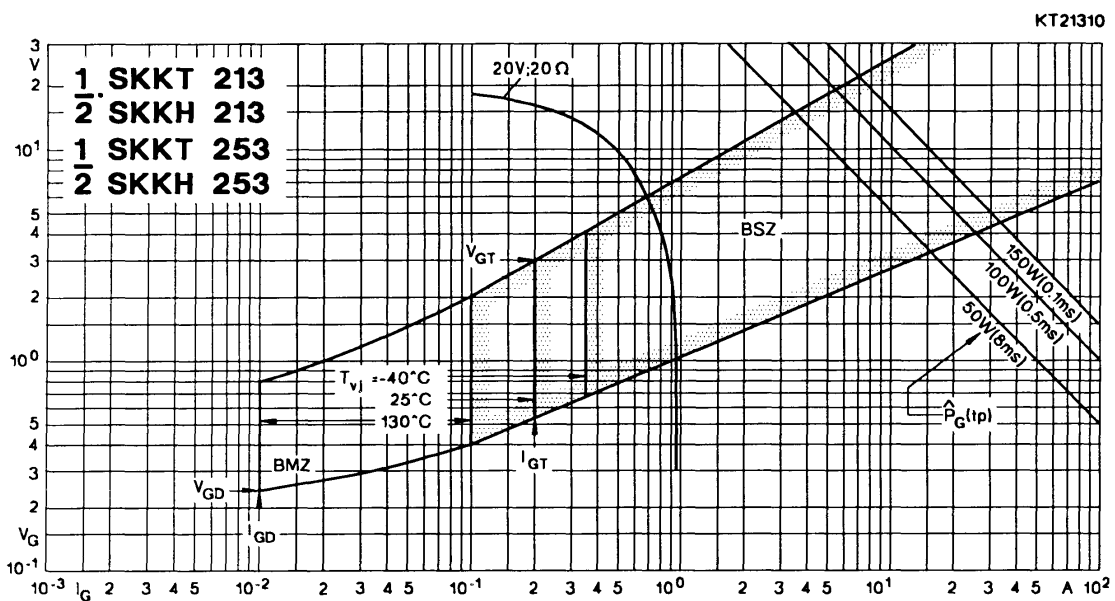
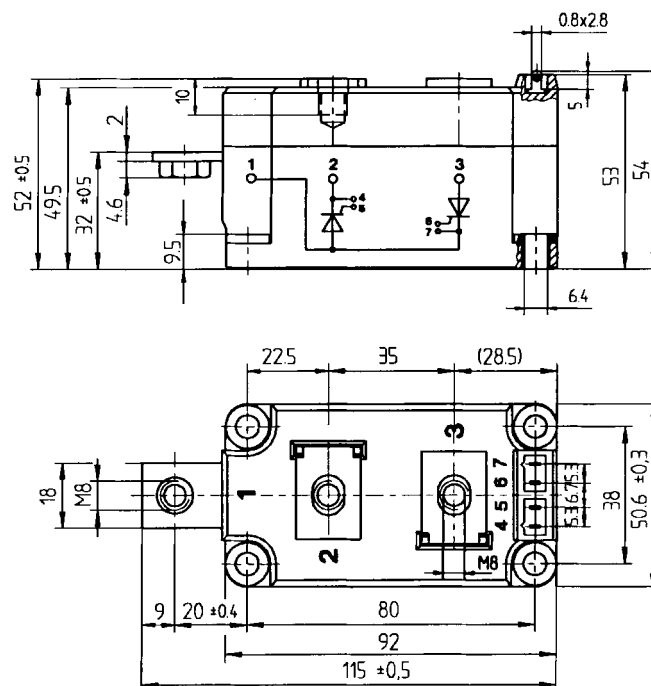


Fig. 10 Gate trigger characteristics

SKKT 213, SKKT 253

Case A 43

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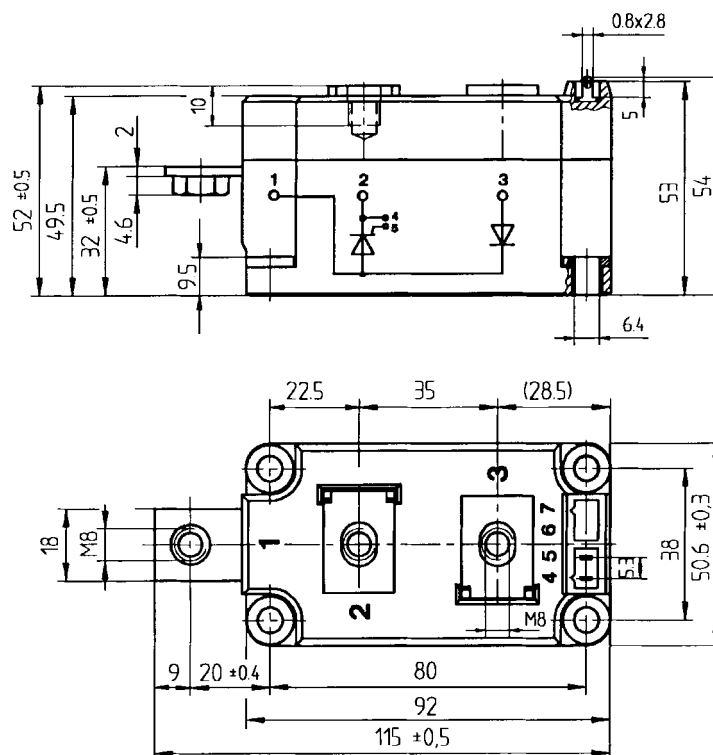


Dimensions in mm

SKKH 213, SKKH 253

Case A 56

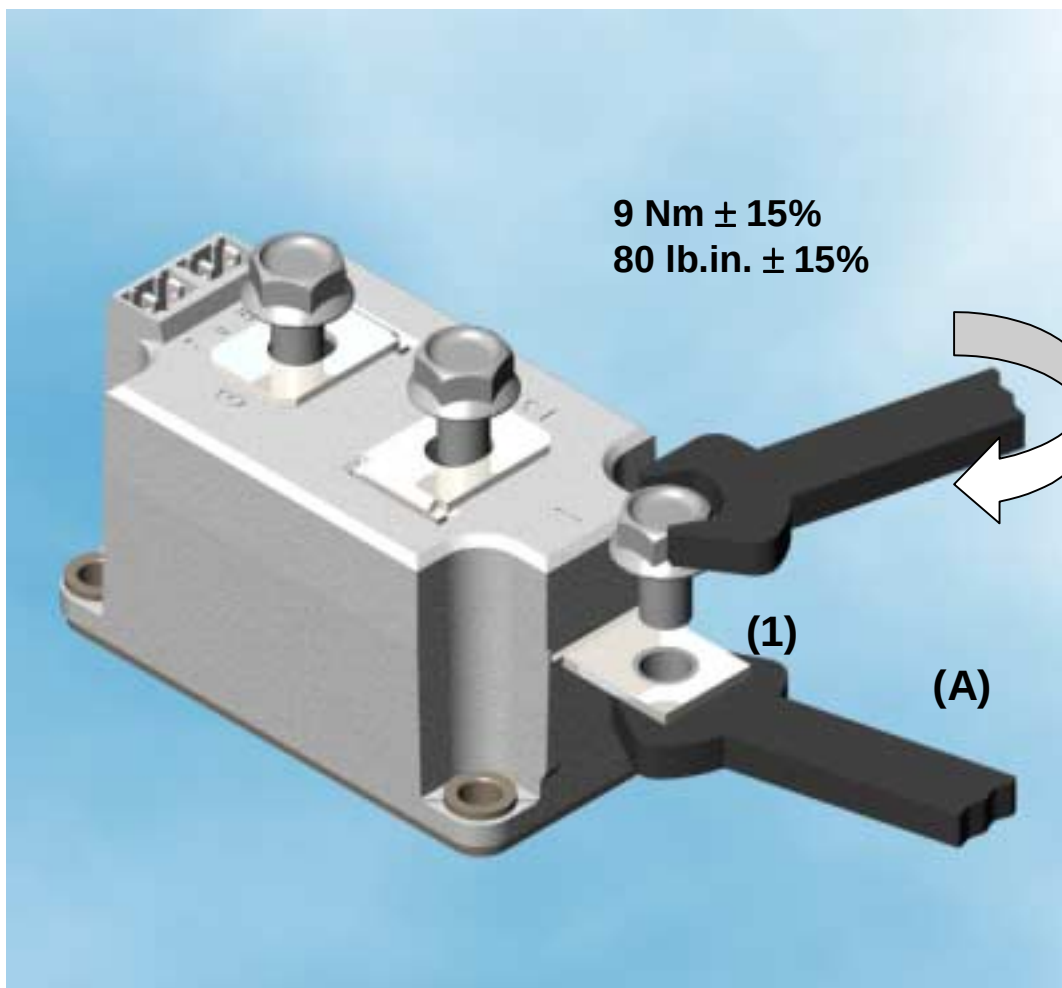
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Dimensions in mm

Ergänzung zu den Montagehinweisen im SEMIKRON Datenbuch

Bitte beachten Sie, daß beim Befestigen der Stromzuführung an Anschluß **(1)** – zur Vermeidung von Schäden am Gehäuse – die Mutter mit einem Maulschlüssel **(A)**, gegengehalten werden muß.



Supplement to the Assembly Instructions in the SEMIKRON Data Book

Please note that when connecting the power supply conductor to terminal **(1)**, a wrench (spanner) **(A)** should be used to restrain the nut on terminal **(1)** to avoid damage to the housing.