

Thyristors

SKT 250 SKT 300



Features

- Hermetic metal cases with ceramic insulators
- Threaded studs ISO M24 x 1,5 or UNF 3/4-16
- High i^2t and I_{TSM} values for easy fusing
- International standard cases

Typical Applications

- DC motor control (e. g. for machine tools)
- Controlled rectifiers (e. g. for battery charging)
- AC controllers (e. g. for temperature control)

V_{RSM}	V_{RRM} V_{DRM}	$\left(\frac{dv}{dt}\right)_{cr}$	I_{TRMS} (maximum values for continuous operation)	
			450 A	550 A
V	V	V/ μs	I_{TAV} (sin. 180; $T_{case} = \dots ^\circ C$)	
			285 A (77 $^\circ C$)	350 A (85 $^\circ C$)
500	400	500	SKT 250/04 D	SKT 300/04 D
900	800	500	SKT 250/08 D	SKT 300/08 D*
1300	1200	1000	SKT 250/12 E	SKT 300/12 E*
1500	1400	1000	SKT 250/14 E	SKT 300/14 E*
1700	1600	1000	SKT 250/16 E	SKT 300/16 E*

Symbol	Conditions	SKT 250	SKT 300	Units
I_{TAV}	sin. 180; ($T_{case} = \dots$)	250 (85 $^\circ C$)	300 (93 $^\circ C$)	A
I_{TSM}	$T_{vj} = 25 ^\circ C$; 10 ms	7000	11 000	A
	$T_{vj} = 130 ^\circ C$; 10 ms	6000	10 000	A
i^2t	$T_{vj} = 25 ^\circ C$; 8,35 ... 10 ms	245 000	600 000	A^2s
	$T_{vj} = 130 ^\circ C$; 8,35 ... 10 ms	180 000	500 000	A^2s
t_{gd}	$T_{vj} = 25 ^\circ C$; $I_G = 1 A$; $di_G/dt = 1 A/\mu s$	typ. 1		μs
t_{gr}	$V_D = 0,67 \cdot V_{DRM}$	typ. 2		μs
$(di/dt)_{cr}$	$f = 50 \dots 60 Hz$	100		A/ μs
I_H	$T_{vj} = 25 ^\circ C$;	typ. 150; max. 250		mA
I_L	$T_{vj} = 25 ^\circ C$; $R_G = 33 \Omega$	typ. 300; max. 600		mA
t_q	$T_{vj} = 130 ^\circ C$; typ.	50 ... 150		μs
V_T	$T_{vj} = 25 ^\circ C$; $I_T = 800 A$; max.	1,65	1,45	V
$V_{T(TO)}$	$T_{vj} = 130 ^\circ C$	1,0	0,9	V
r_T	$T_{vj} = 130 ^\circ C$	0,7	0,5	m Ω
I_{DD}, I_{RD}	$T_{vj} = 130 ^\circ C$; $V_{DD} = V_{DRM}$ $V_{RD} = V_{RRM}$	50	50	mA
V_{GT}	$T_{vj} = 25 ^\circ C$	3		V
I_{GT}	$T_{vj} = 25 ^\circ C$	200		mA
V_{GD}	$T_{vj} = 130 ^\circ C$	0,25		V
I_{GD}	$T_{vj} = 130 ^\circ C$	10		mA
R_{thjc}	cont.	0,110	0,090	$^\circ C/W$
	sin. 180	0,123	0,096	$^\circ C/W$
	rec. 120	0,137	0,101	$^\circ C/W$
R_{thch}		0,015		$^\circ C/W$
T_{vj}		- 40 ... +130		$^\circ C$
T_{stg}		- 55 ... +150		$^\circ C$
M	SI units	60 (UNF: 30)		Nm
a	US units	530 (UNF: 265)		lb. in.
w		5 · 9,81		m/s ²
		450		g
Case		B 7		

* available with UNF thread 3/4-16 UNF2A, e.g. SKT 300/08 D UNF

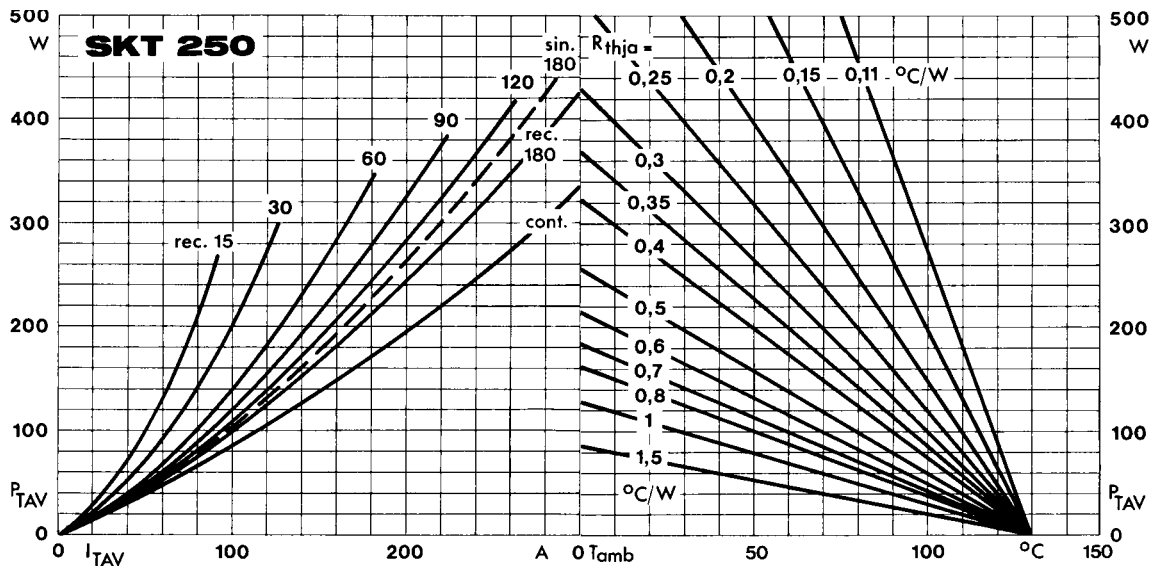


Fig. 1 a Power dissipation vs. on-state current and ambient temperature

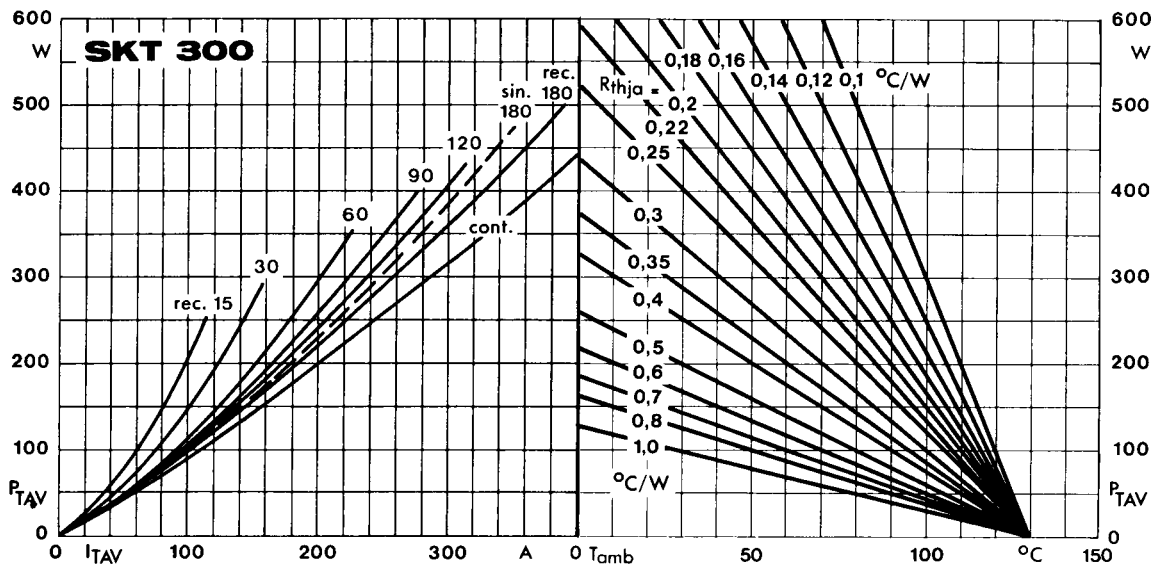


Fig. 1 b Power dissipation vs. on-state current and ambient temperature

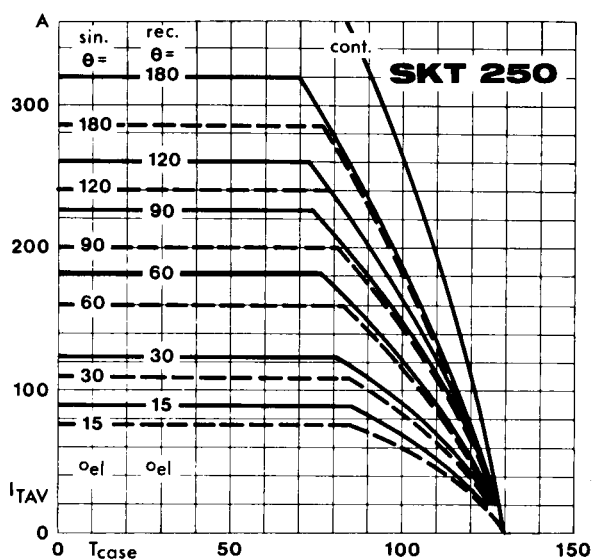


Fig. 2 a Rated on-state current vs. case temperature

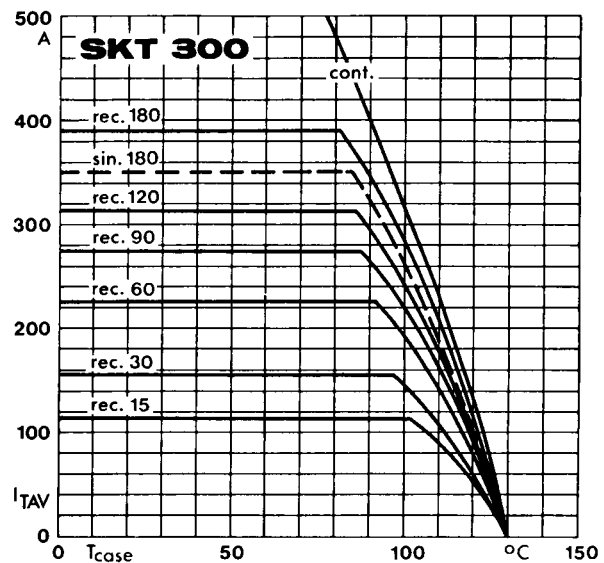


Fig. 2 b Rated on-state current vs. case temperature

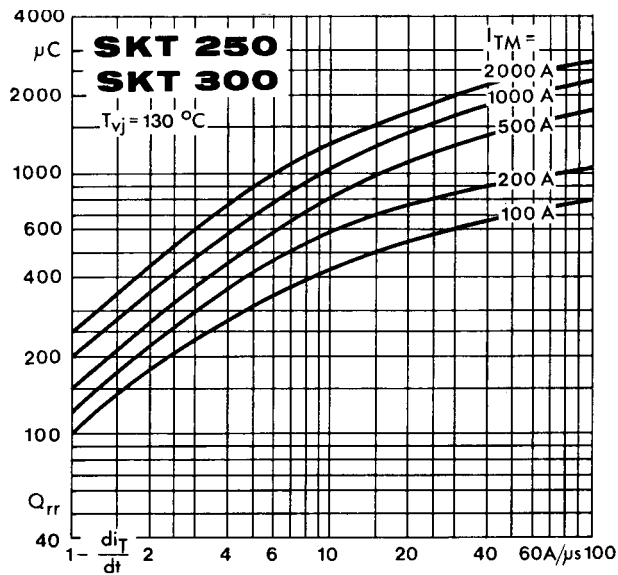


Fig. 3 Recovered charge vs. current decrease

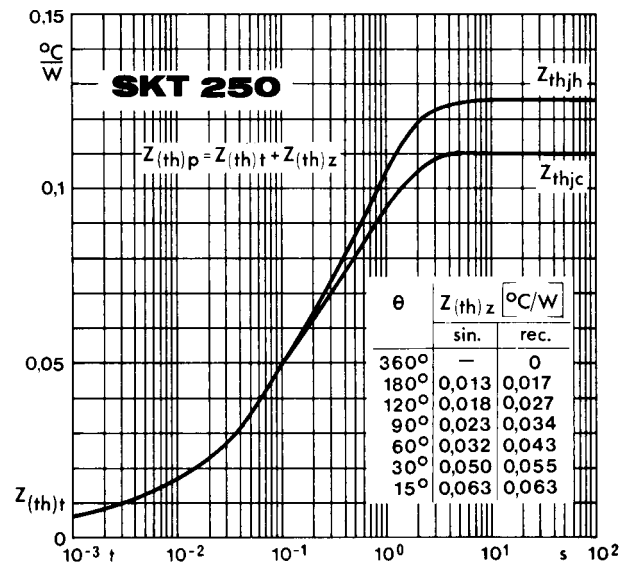


Fig. 4 a Transient thermal impedance vs. time

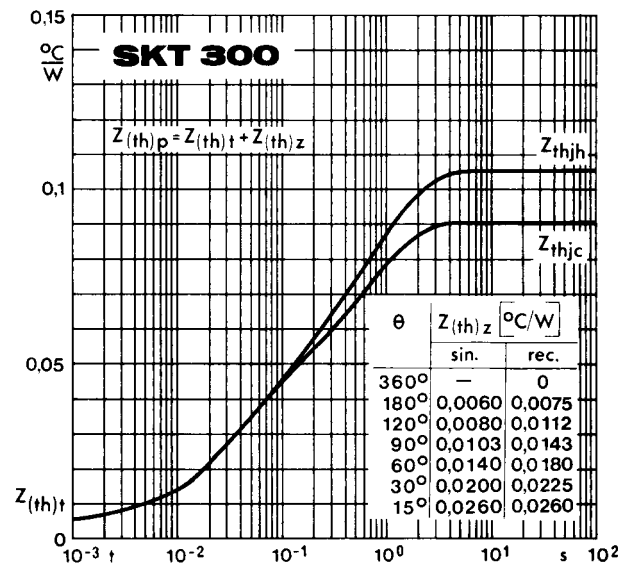


Fig. 4 b Transient thermal impedance vs. time

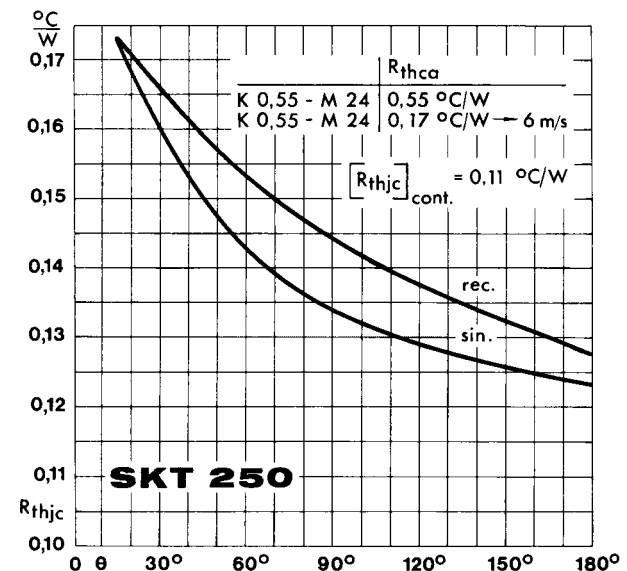


Fig. 5 a Thermal resistance vs. conduction angle

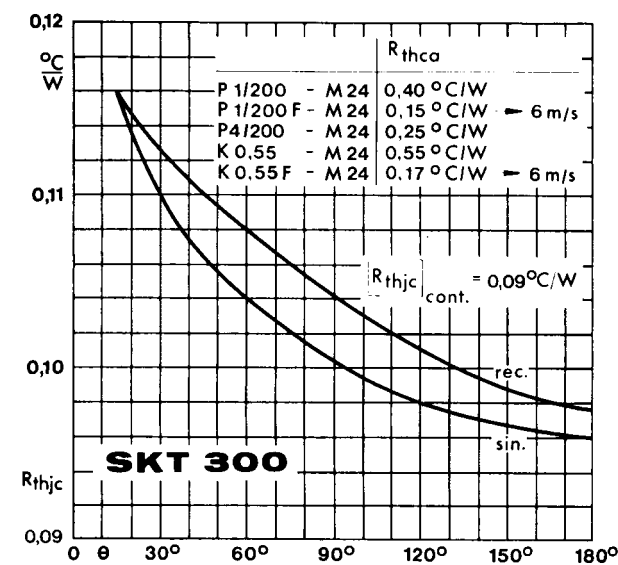


Fig. 5 b Thermal resistance vs. conduction angle

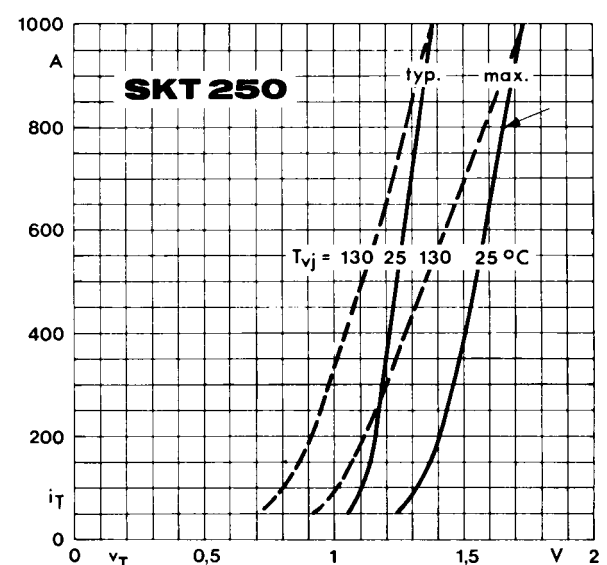


Fig. 6 a On-state characteristics

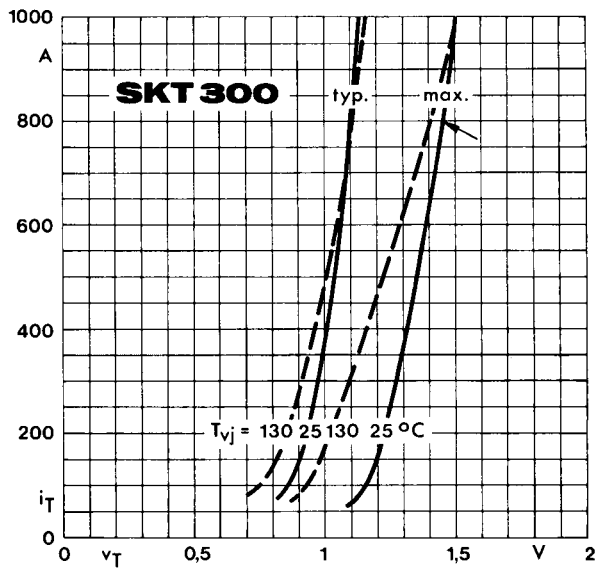


Fig. 6 b On-state characteristics

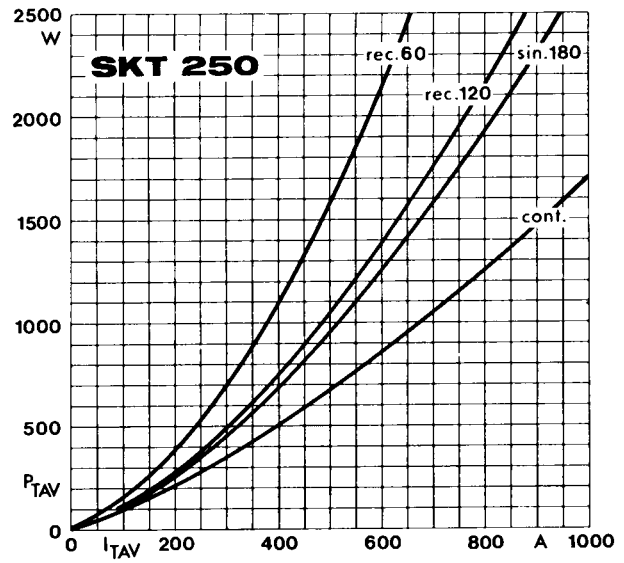


Fig. 7 a Power dissipation vs. on-state current

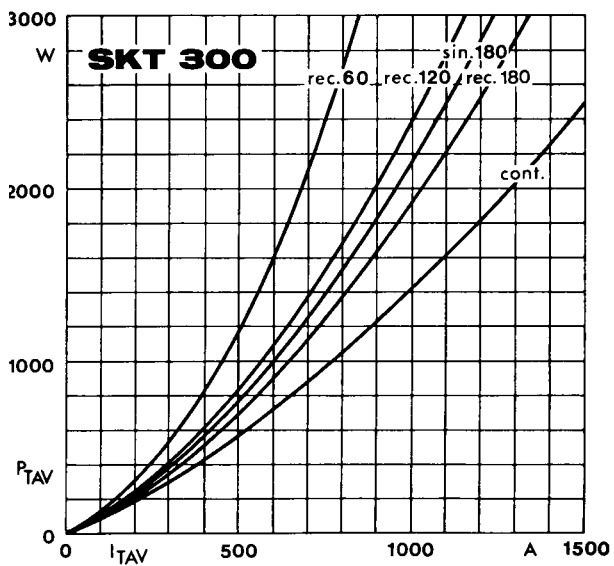


Fig. 7 b Power dissipation vs. on-state current

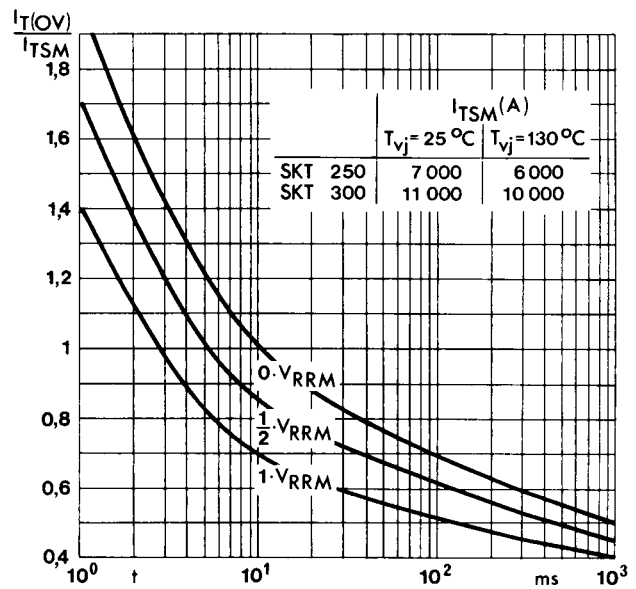


Fig. 8 Surge overload current vs. time

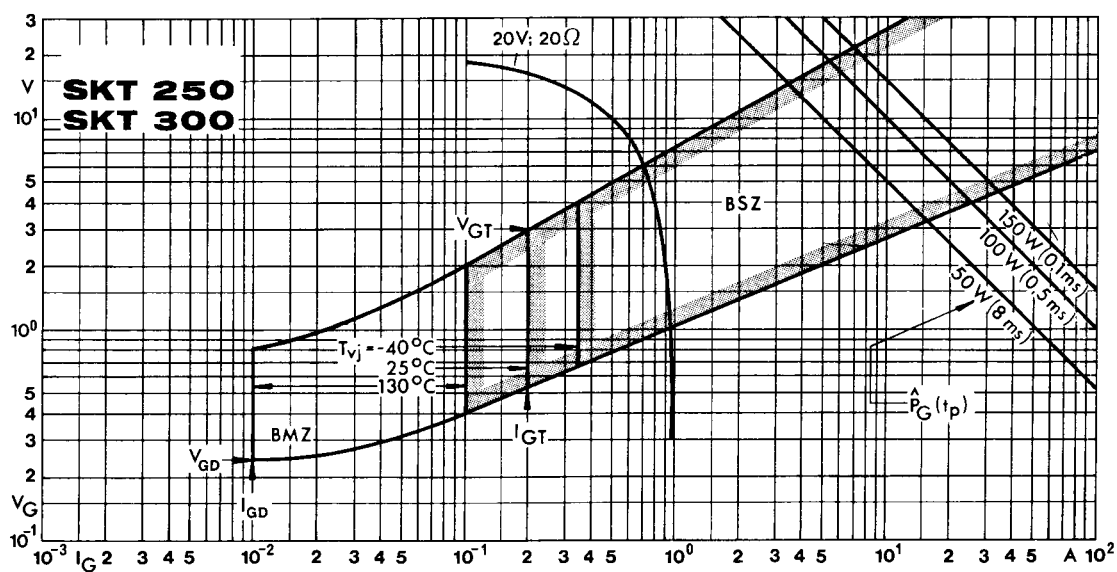


Fig. 9 Gate trigger characteristics

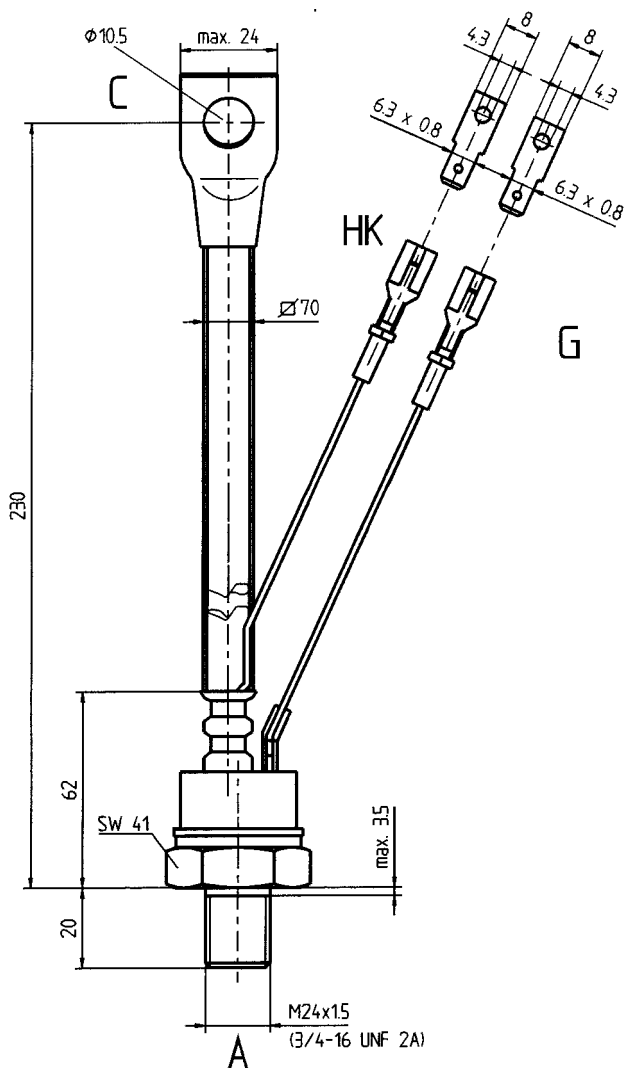
SKT 250
SKT 300

Case B 7

IEC-Publ. 191-2: A 29 MA

DIN 41893: (207 B 4)

JEDEC: TO-209 AD (TO-118)



C: Cathode terminal (red sleeve) Dimensions in mm
A: Anode terminal
G: Gate terminal (yellow sleeve)
HK: Auxiliary cathode terminal (red sleeve)