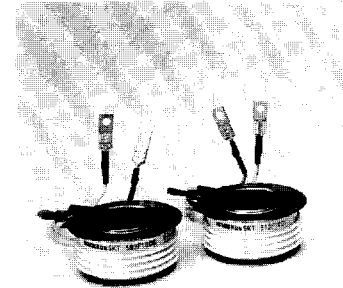


## Fast Thyristors with Interdigitated Amplifying Gate

### SKT 513 F SKT 593 F



V <sub>DRM</sub> V <sub>RRM</sub>	t <sub>q</sub> (T <sub>vj</sub> = 125 °C)	I <sub>T</sub> RMS (maximum values for continuous operation)	
		1300 A	1500 A
V	μs	I <sub>TAV</sub> (sin. 180; T <sub>case</sub> = 85 °C; 50 Hz; DSC)	
		510 A	590 A
400	20	<b>SKT 513 F 04 DT</b>	
800	15 20	<b>SKT 513 F 08 DT</b>	<b>SKT 593 F 08 DS</b>
900	15 20	<b>SKT 513 F 09 DT</b>	<b>SKT 593 F 09 DS</b>
1000	15 20	<b>SKT 513 F 10 DT</b>	<b>SKT 593 F 10 DS</b>
1100	15 20	<b>SKT 513 F 11DT</b>	<b>SKT 593 F 11 DS</b>
1200	20	<b>SKT 513 F 12 DT</b>	
1300	25	<b>SKT 513 F 13 DU</b>	
1400	30	<b>SKT 513 F 14 DV</b>	

Symbol	Conditions	SKT 513 F	SKT 593 F
I <sub>TM</sub>	sin. 180; T <sub>case</sub> = 60 °C; DSC; 50 Hz	2300 A	2700 A
I <sub>TSM</sub>	T <sub>vj</sub> = 25 °C T <sub>vj</sub> = 125 °C	11 000 A 10 000 A	13 000 A 12 000 A
i <sup>2</sup> t	T <sub>vj</sub> = 25 °C T <sub>vj</sub> = 125 °C	600 000 A <sup>2</sup> s 500 000 A <sup>2</sup> s	845 000 A <sup>2</sup> s 720 000 A <sup>2</sup> s
t <sub>gd</sub> t <sub>gr</sub> (di/dt) <sub>cr</sub> (dv/dt) <sub>cr</sub>	T <sub>vj</sub> = 25 °C; I <sub>G</sub> = 1 A; di <sub>G</sub> /dt = 1 A/μs V <sub>D</sub> = 0,67 · V <sub>DRM</sub> non-repetitive f = 50 ... 60 Hz T <sub>vj</sub> = 125 °C		typ. 1 μs typ. 1 μs 1000 A/μs 400 A/μs 500 V/μs
I <sub>H</sub> I <sub>L</sub>	T <sub>vj</sub> = 25 °C; typ./max. T <sub>vj</sub> = 25 °C; R <sub>G</sub> = 33 Ω; typ./max.	200 mA/400 mA 1 A/2 A	
V <sub>T</sub> V <sub>T(TO)</sub>	T <sub>vj</sub> = 25 °C; I <sub>T</sub> = 1800 A; max. T <sub>vj</sub> = 125 °C	2,2 V 1,4 V	1,85 V 1,25 V
r <sub>T</sub>	T <sub>vj</sub> = 125 °C	0,4 mΩ	0,3 mΩ
I <sub>DD</sub> , I <sub>RD</sub>	T <sub>vj</sub> = 125 °C; V <sub>DD</sub> = V <sub>DRM</sub> ; V <sub>RD</sub> = V <sub>RRM</sub>	100 mA	100 mA
V <sub>GT</sub> I <sub>GT</sub> V <sub>GD</sub> I <sub>GD</sub>	T <sub>vj</sub> = 25 °C T <sub>vj</sub> = 25 °C T <sub>vj</sub> = 125 °C T <sub>vj</sub> = 125 °C		4 V 250 mA 0,25 V 10 mA
R <sub>thjc</sub> R <sub>thch</sub> T <sub>vj</sub> T <sub>stg</sub>	cont.; DSC/SSC DSC/SSC	0,038/0,078 °C/W 0,008/0,016 °C/W	
F	SI units US units	11 ... 13 kN 2200 ... 2850 lbs.	
w		240 g	
Case		B 10	

### Features

- Capsule cases
- Hermetic ceramic to metal sealing
- Gold diffused silicon chip
- Amplifying interdigitated gate
- Precious metal pressure contact

### Typical Applications

- Self-commutated inverters
- DC choppers
- Motor speed control
- Inductive heating
- Uninterruptible power supplies
- Electronic welders
- General power switching applications

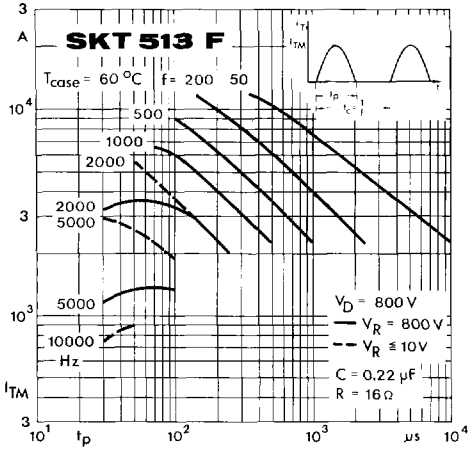


Fig. 1 a Rated peak on-state current vs. pulse duration

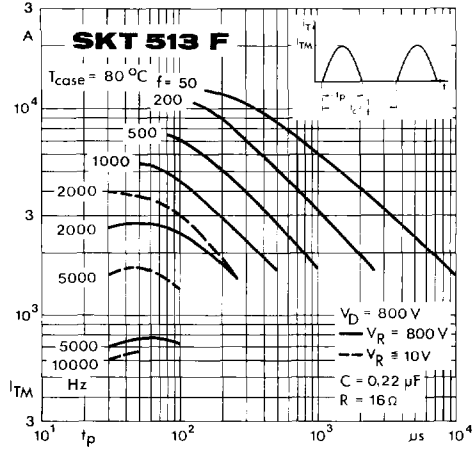


Fig. 1 b Rated peak on-state current vs. pulse duration

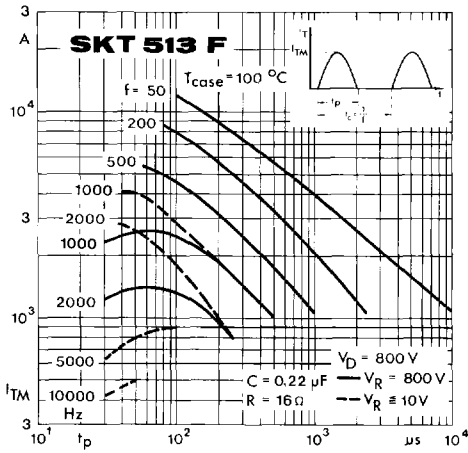


Fig. 1 c Rated peak on-state current vs. pulse duration

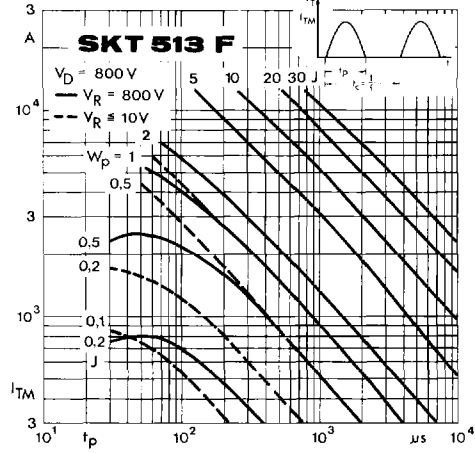


Fig. 2 Energy dissipation per pulse

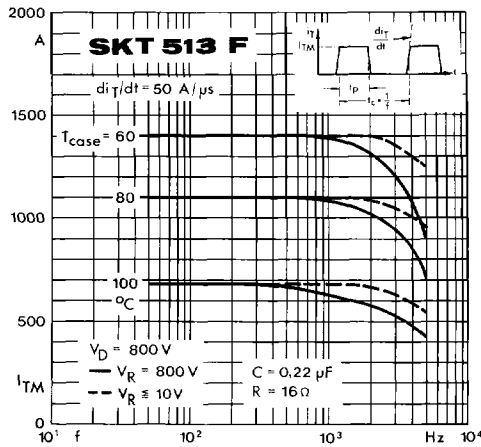


Fig. 3 a Rated peak on-state current vs. pulse duration

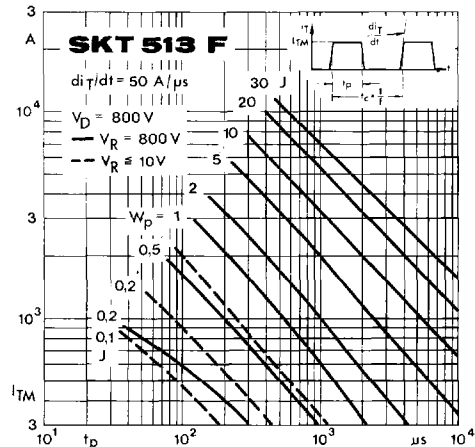


Fig. 4 a Energy dissipation per pulse

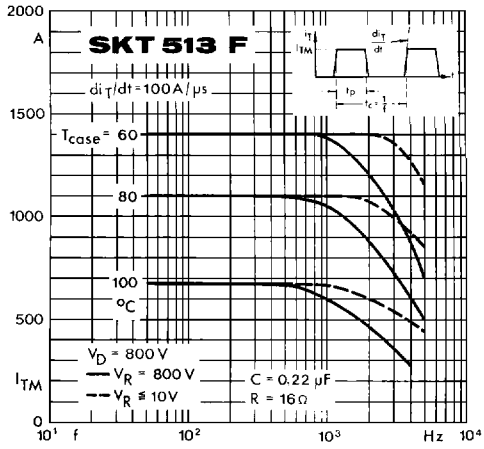


Fig. 3 b Rated peak on-state current vs. pulse duration

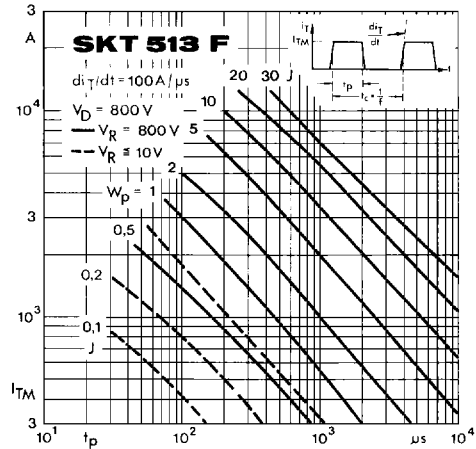


Fig. 4 b Energy dissipation per pulse

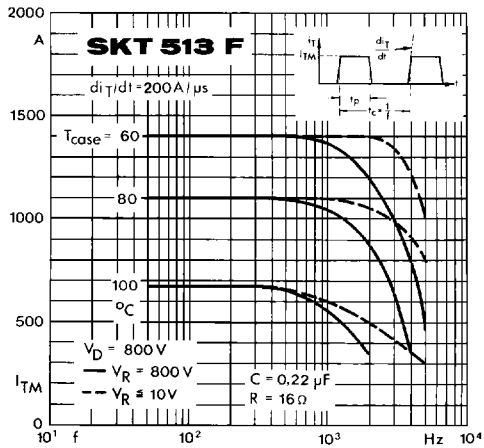


Fig. 3 c Rated peak on-state current vs. pulse duration

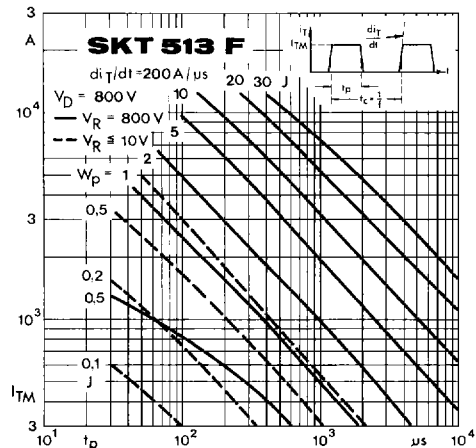


Fig. 4 c Energy dissipation per pulse

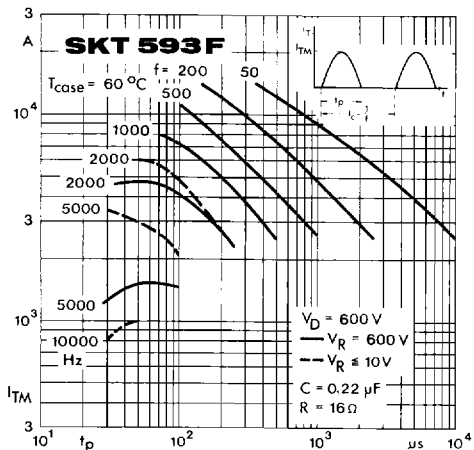


Fig. 1 a Rated peak on-state current vs. pulse duration

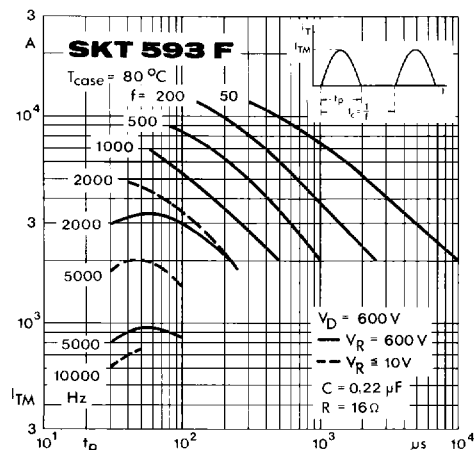


Fig. 1 b Rated peak on-state current vs. pulse duration

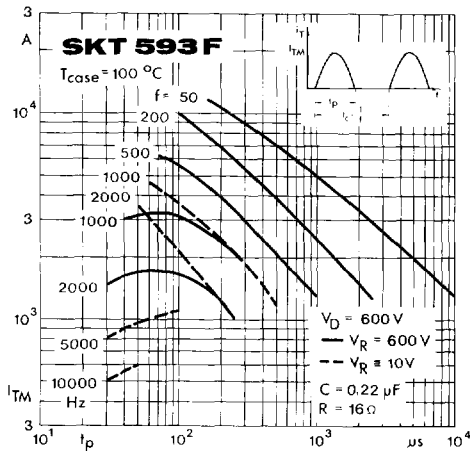


Fig. 1 c Rated peak on-state current vs. pulse duration

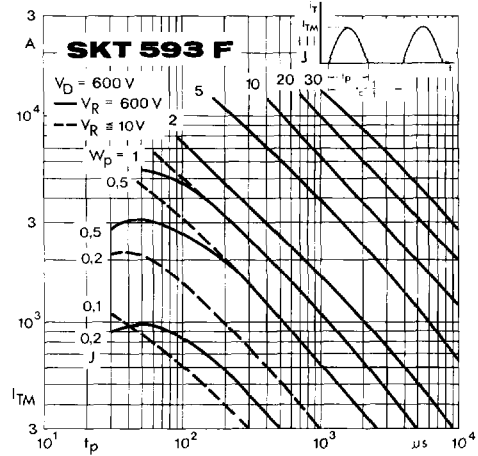


Fig. 2 Energy dissipation per pulse

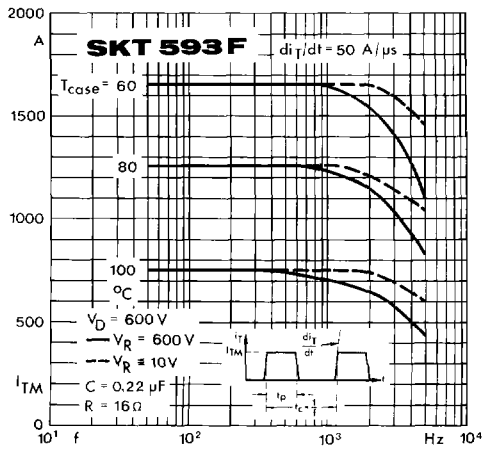


Fig. 3 a Rated peak on-state current vs. pulse duration

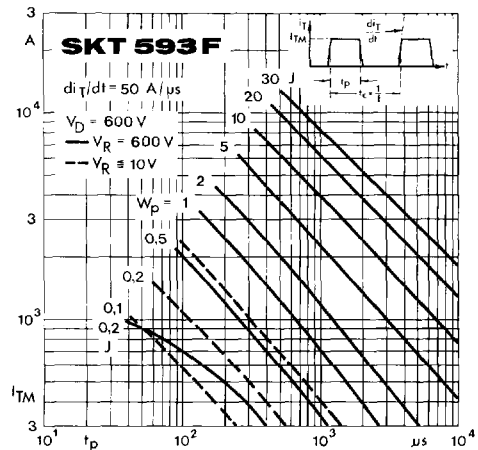


Fig. 4 a Energy dissipation per pulse

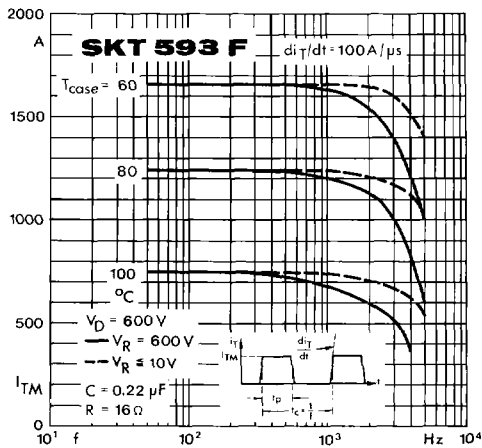


Fig. 3 b Rated peak on-state current vs. pulse duration

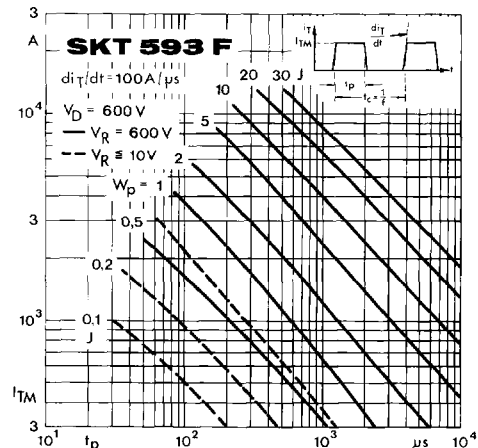


Fig. 4 b Energy dissipation per pulse

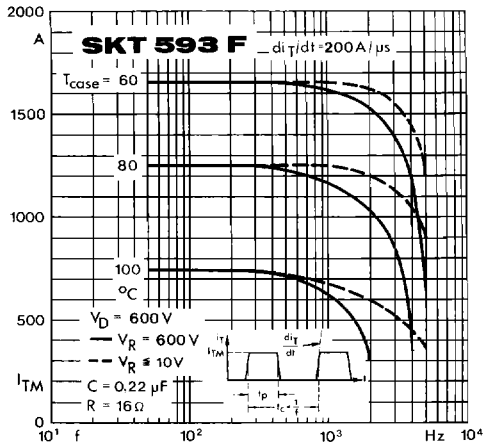


Fig. 3 c Rated peak on-state current vs. pulse duration

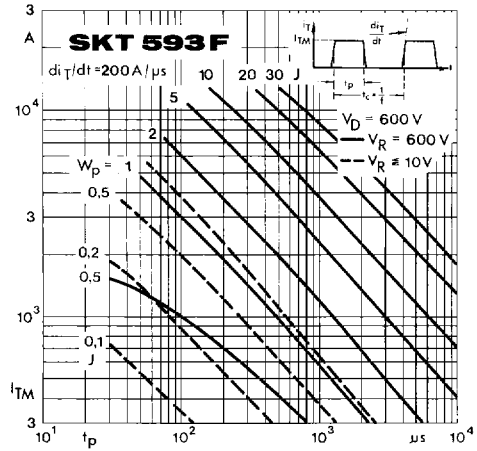


Fig. 4 c Energy dissipation per pulse

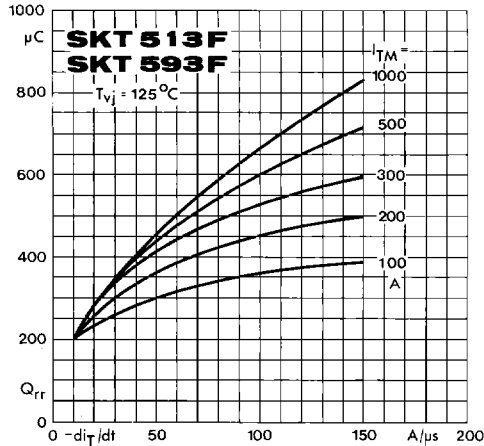


Fig. 5 Recovered charge vs. current decrease

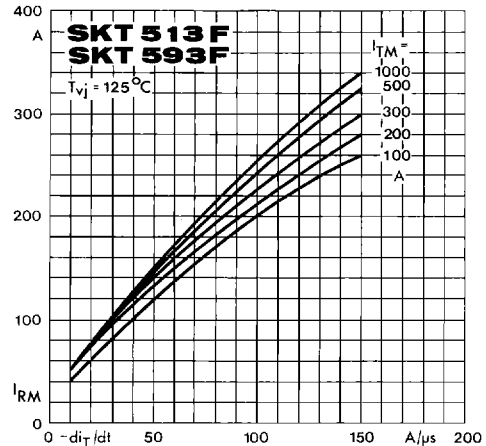


Fig. 6 Peak recovery current vs. current decrease

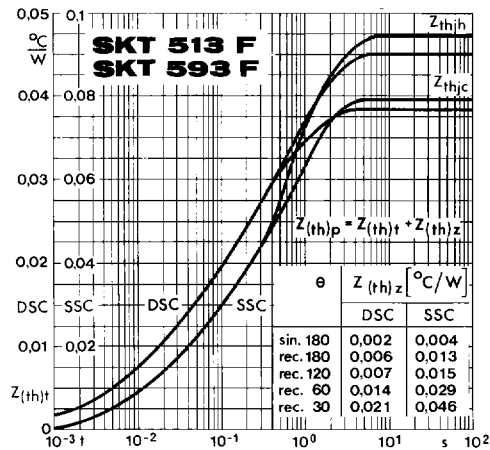


Fig. 7 Transient thermal impedance vs. time

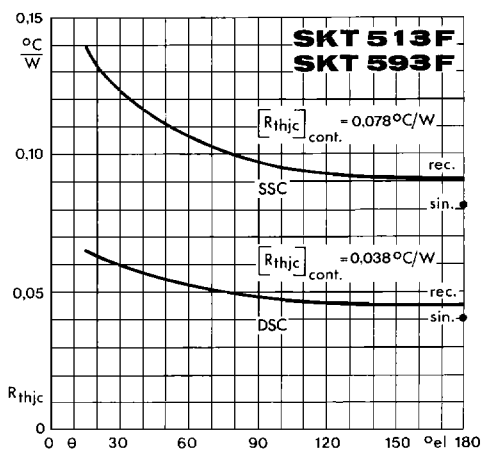


Fig. 8 Thermal resistance vs. conduction angle

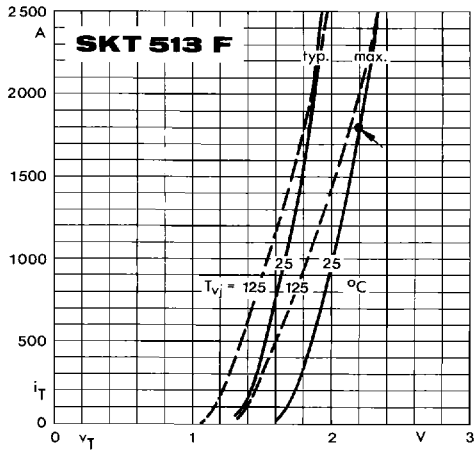


Fig. 9 a On-state characteristics

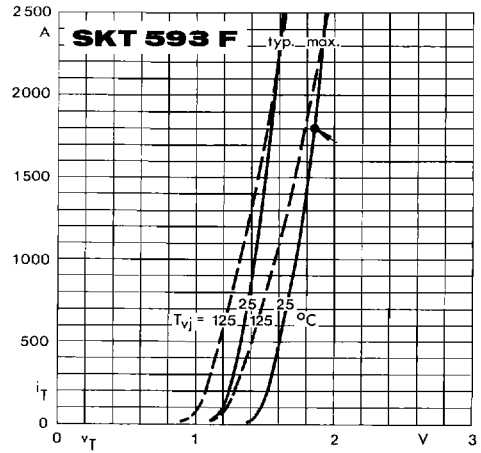


Fig. 9 b On-state characteristics

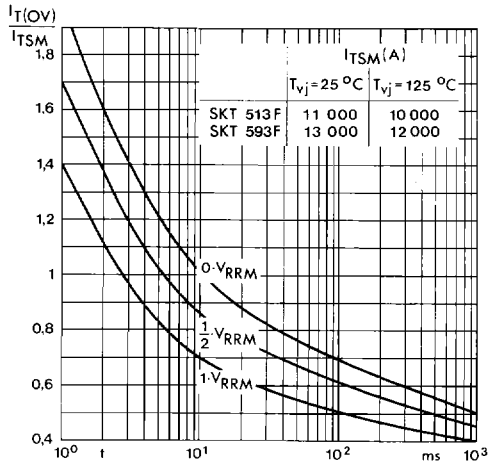


Fig. 10 Surge overload current vs. time

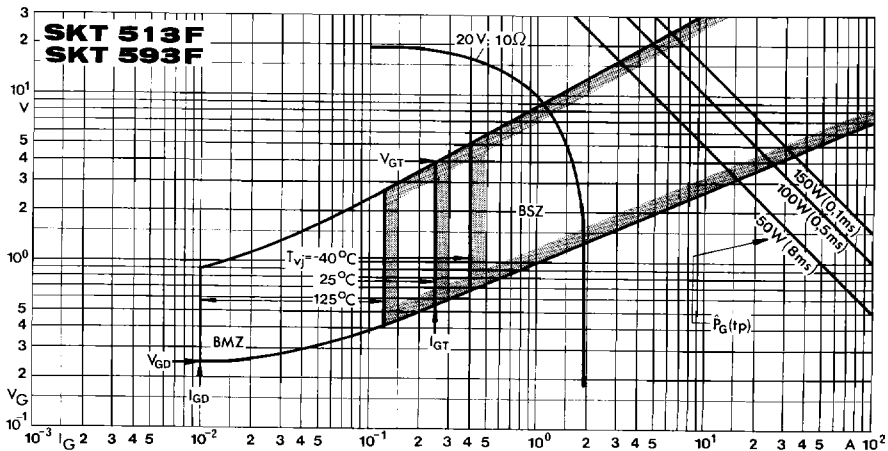
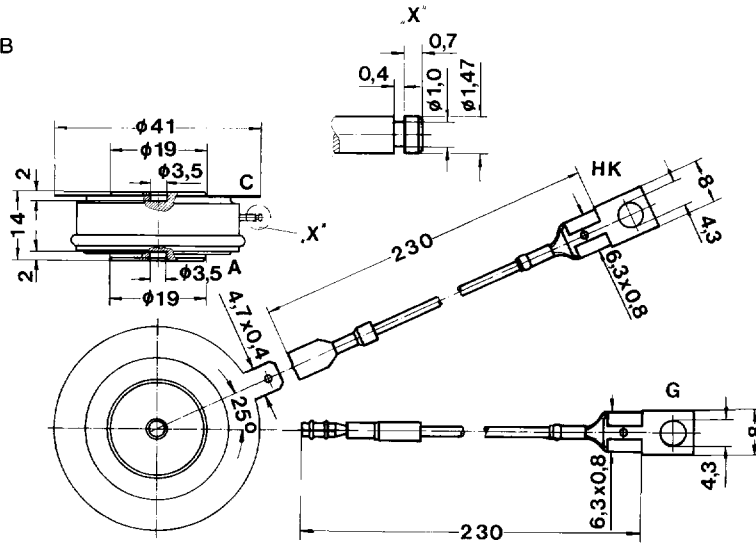


Fig. 11 Gate trigger characteristics

**SKT 240 F**  
**SKT 290 F**

Case B 8

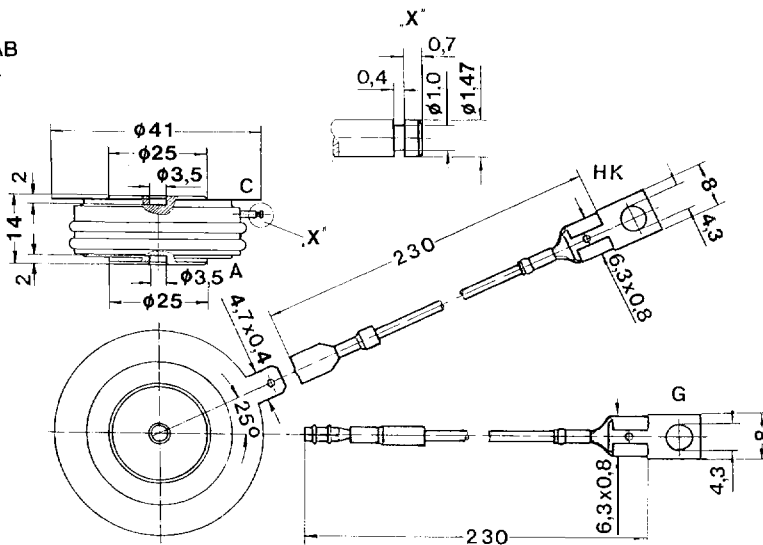
JEDEC: TO-200 AB  
151 A4 DIN 41 814



**SKT 351 F**  
**SKT 431 F**

Case B 11

JEDEC: TO-200 AB  
152 A4 DIN 41 814



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

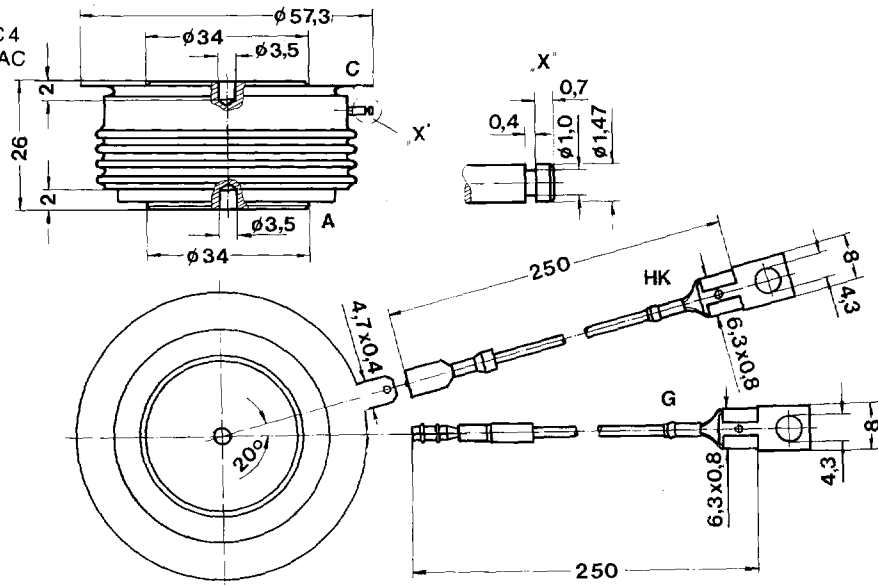
Dimensions in mm

**SKT 513 F, SKT 593 F**

Case B 10

DIN 41 814: 153 C 4

JEDEC: TO-200 AC



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

Dimensions in mm