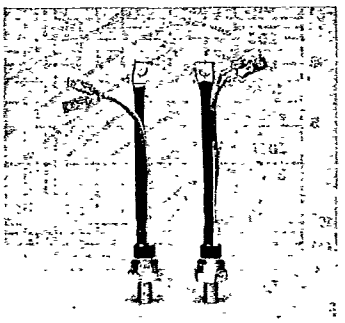
SEMIKRON

Fast Thyristors with Amplifying Gate

SKT 45 F
SKT 70 F



V_{DRM} V_{RRM} V	t_q (T_{vj} = 125 °C) µs	I_{TRMS} (maximum values for continuous operation) 115 A	150 A
		I_{TAV} (sin. 180; T_{case} = ... °C; 50 Hz) 45 A (92 °C)	70 A (85 °C)
600	15	**SKT 45 F 06 DS**	
	20		**SKT 70 F 06 DT**
800	15	**SKT 45 F 08 DS**	
	20	**SKT 45 F 08 DT**	**SKT 70 F 08 DT**
	20		**SKT 70 F 08 DT UNF***
1000	15	**SKT 45 F 10 DS**	
	20	**SKT 45 F 10 DT**	**SKT 70F 10 DT**
	20		**SKT 70 F 10 DT UNF***
	25		**SKT 70 F 10 DU**
1200	15	**SKT 45 F 12 DS***	
	20	**SKT 45 F 12 DT**	**SKT 70 F 12 DT**
	20		**SKT 70 F 12 DT UNF***
	25	**SKT 45 F 12 DU**	
	30		**SKT 70 F 12 DV**

Symbol	Conditions	SKT 45 F	SKT 70 F
I_{TM}	sin. 180; T_{case} = 60 °C; 50 Hz	230 A	300 A
I_{TSM}	T_{vj} = 25 °C	1300 A	1700 A
	T_{vj} = 125 °C	1100 A	1450 A
i^2t	T_{vj} = 25 °C	8400 A^2s	14500 A^2s
	T_{vj} = 125 °C	6000 A^2s	10500 A^2s
t_{gd}	T_{vj} = 25 °C; I_G = 1 A; di_G/dt = 1 A/µs	typ. 1 µs	
t_{gr}	V_D = 0,67 · V_{DRM}	typ. 1 µs	
$(di/dt)_{cr}$	non-repetitive	600 A/µs	
	f = 50 ... 60 Hz	200 A/µs	
$(dv/dt)_{cr}$	T_{vj} = 125 °C	500 V/µs	
I_H	T_{vj} = 25 °C; typ./max.	180 mA/300 mA	
I_L	T_{vj} = 25 °C; R_G = 33 Ω; typ./max.	0,6 A/1 A	
V_T	T_{vj} = 25 °C; I_T = 300 A; max.	3,65 V	2,65 V
$V_{T(TO)}$	T_{vj} = 125 °C	1,8 V	1,6 V
r_T	T_{vj} = 125 °C	6 mΩ	3 mΩ
I_{DD}, I_{RD}	T_{vj} = 125 °C; V_{DD} = V_{DRM}; V_{RD} = V_{RRM}	50mA	50 mA
V_{GT}	T_{vj} = 25 °C	5 V	
I_{GT}	T_{vj} = 25 °C	150 mA	
V_{GD}	T_{vj} = 125 °C	2,5 V	
I_{GD}	T_{vj} = 125 °C	6 mA	
R_{thjc}	cont.	0,25 °C/W	
R_{thch}		0,08 °C/W	
T_{vj}		−40 ... +125 °C	
T_{stg}		−40 ... +125 °C	
M	Si units	10 Nm	
	US units	90 lb. in.	
w		80 g	
Case	→ page B 4–38	B 5	B 5 B 5 UNF

* Available in limited quantities

Features

- Easy to mount threaded stud cases
- Hermetic ceramic to metal sealing
- Gold diffused silicon chips
- Amplifying gates

Typical Applications

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

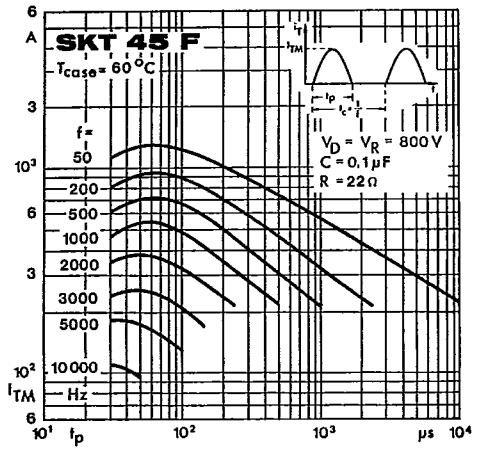


Fig. 1 a Rated peak on-state current vs. pulse duration

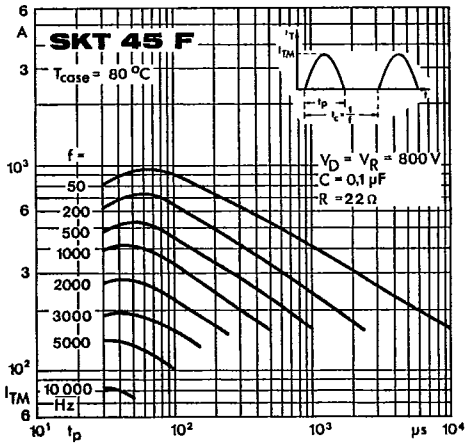


Fig. 1 b Rated peak on-state current vs. pulse duration

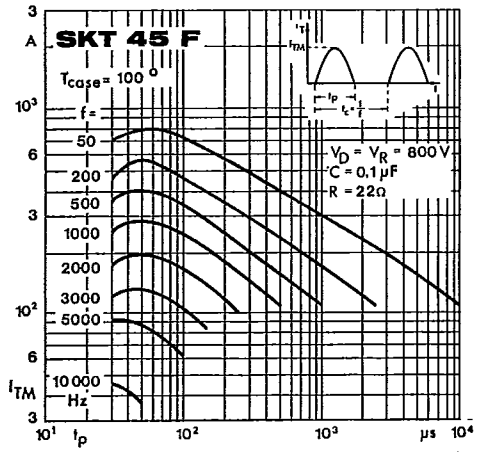


Fig. 1 c Rated peak on-state current vs. pulse duration

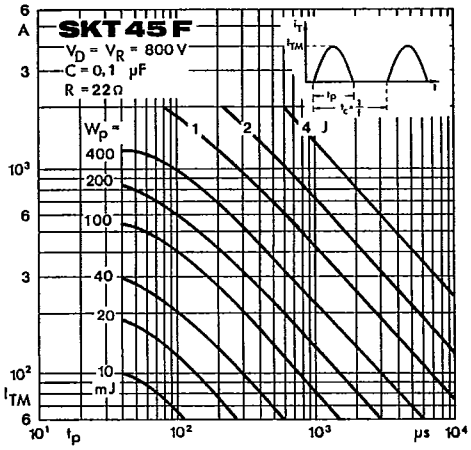


Fig. 2 Energy dissipation per pulse

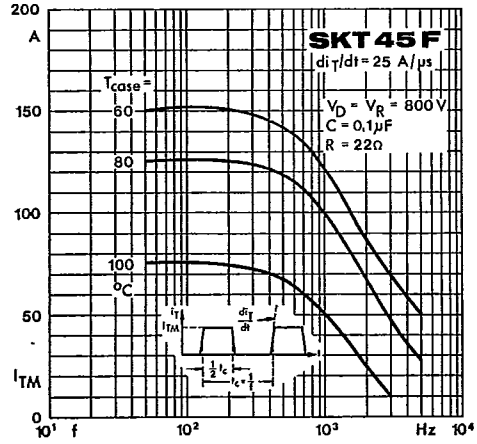


Fig. 3 a Rated peak on-state current vs. pulse duration

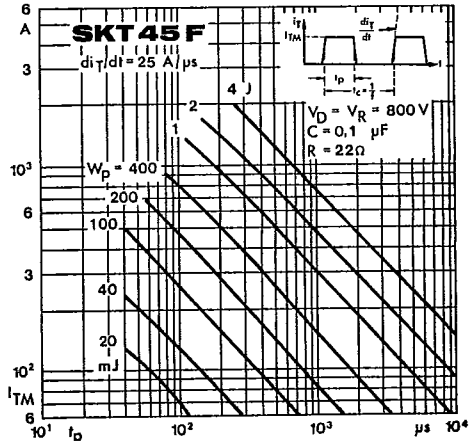


Fig. 4 a Energy dissipation per pulse

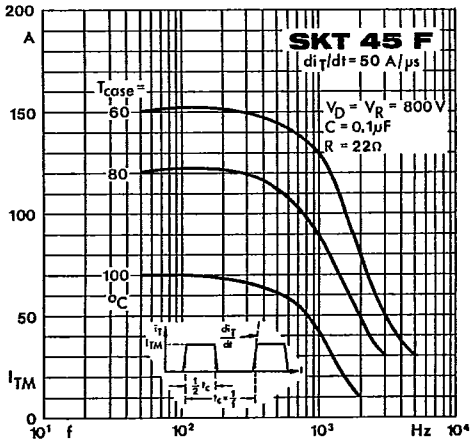


Fig. 3 b Rated peak on-state current vs. pulse duration

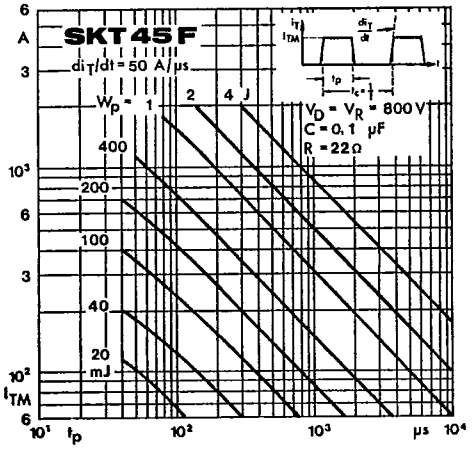


Fig. 4 b Energy dissipation per pulse

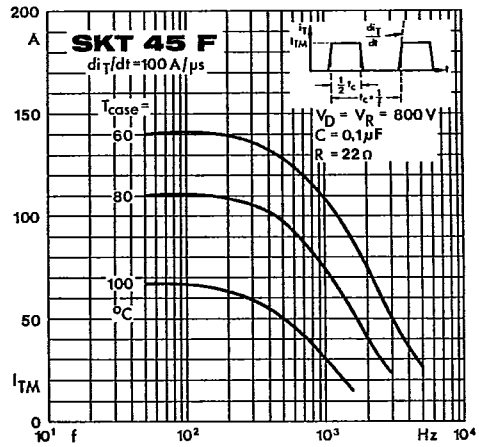


Fig. 3 c Rated peak on-state current vs. pulse duration

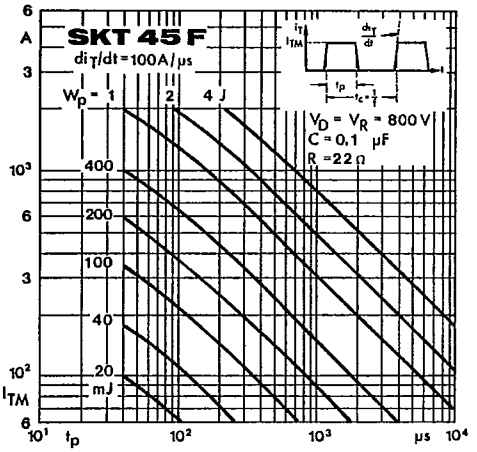


Fig. 4 c Energy dissipation per pulse

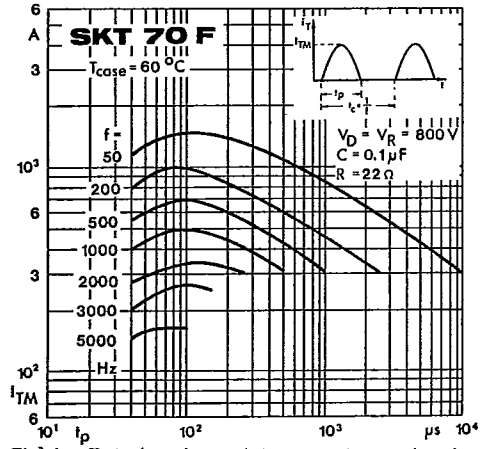


Fig. 1 a Rated peak on-state current vs. pulse duration

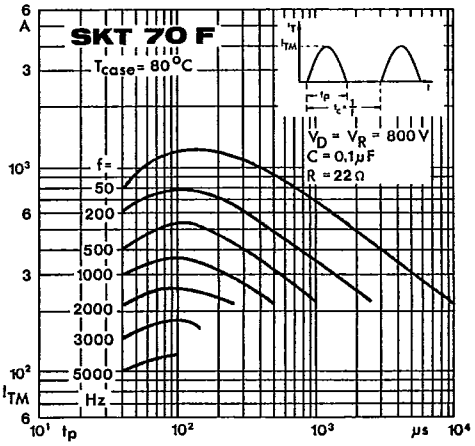


Fig. 1 b Rated peak on-state current vs. pulse duration

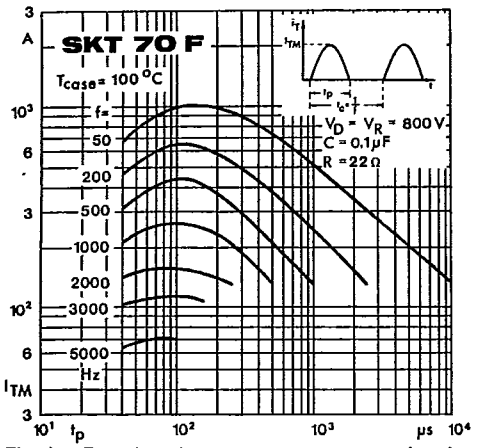


Fig. 1 c Rated peak on-state current vs. pulse duration

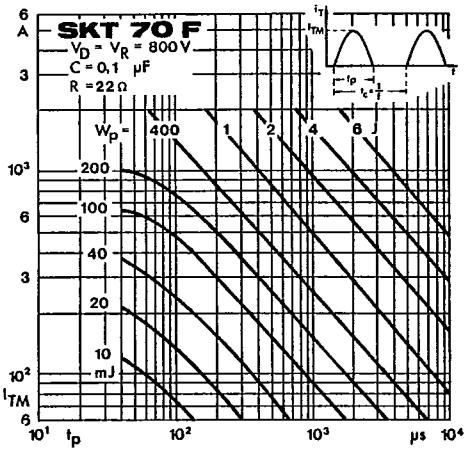


Fig. 2 Energy dissipation per pulse

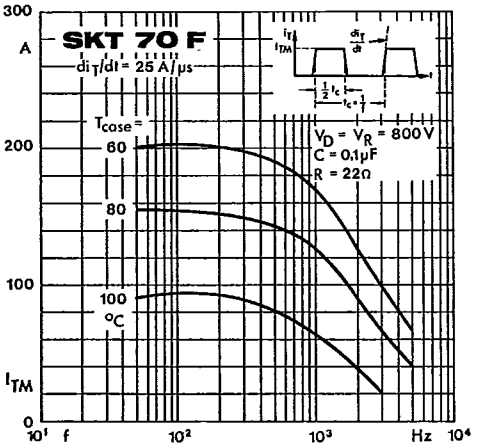


Fig. 3 a Rated peak on-state current vs. pulse duration

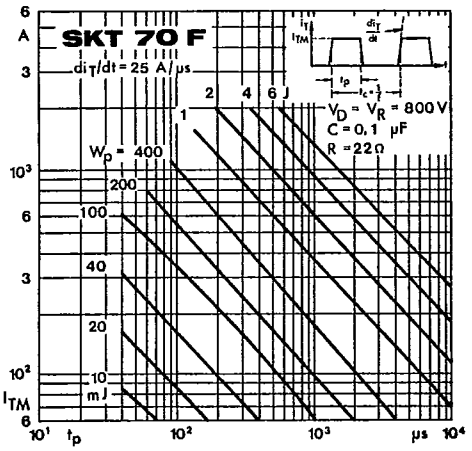


Fig. 4 a Energy dissipation per pulse

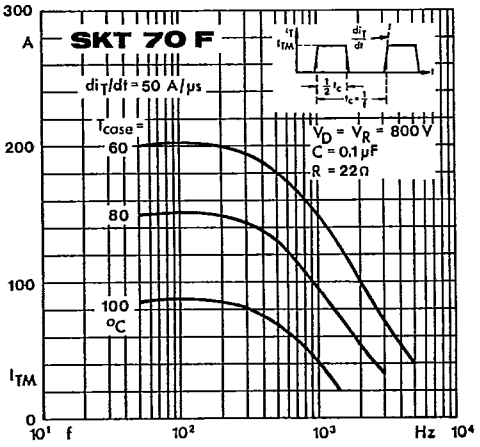


Fig. 3 b Rated peak on-state current vs. pulse duration

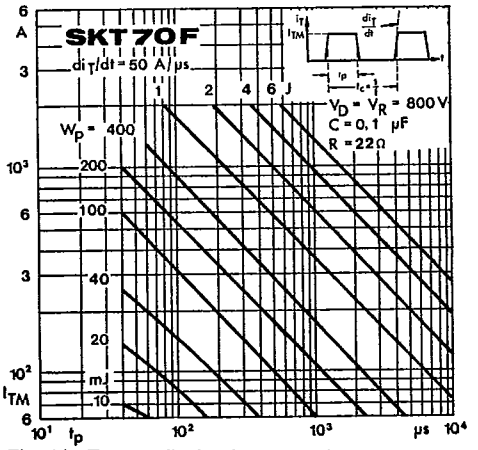


Fig. 4 b Energy dissipation per pulse

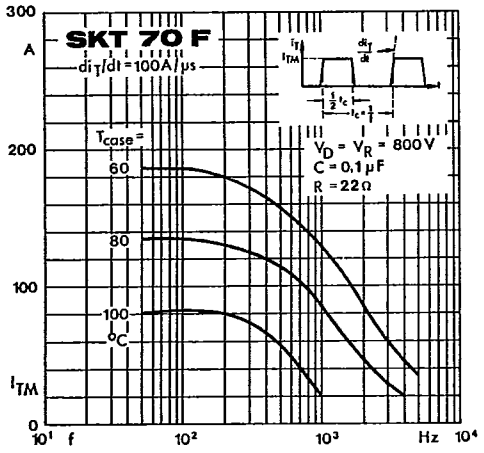


Fig. 3 c Rated peak on-state current vs. pulse duration

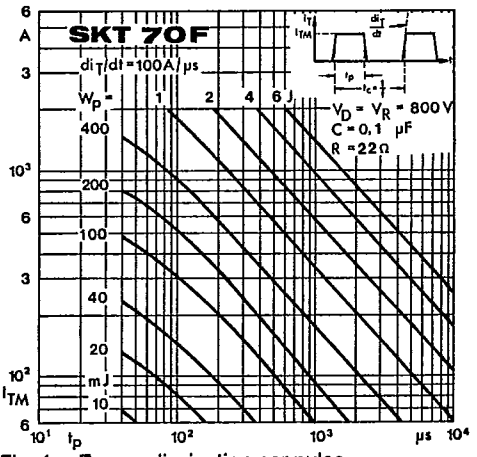


Fig. 4 c Energy dissipation per pulse

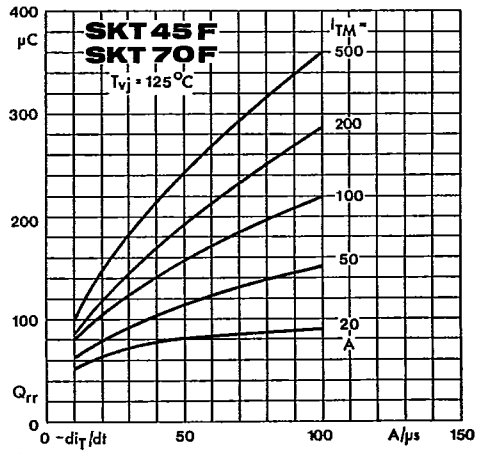


Fig. 5 Recovered charge vs. current decrease

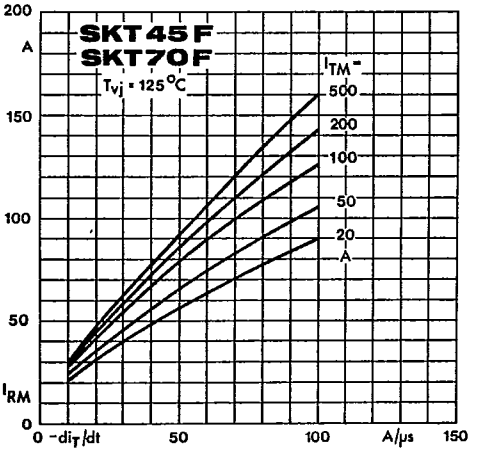


Fig. 6 Peak recovery current vs. current decrease

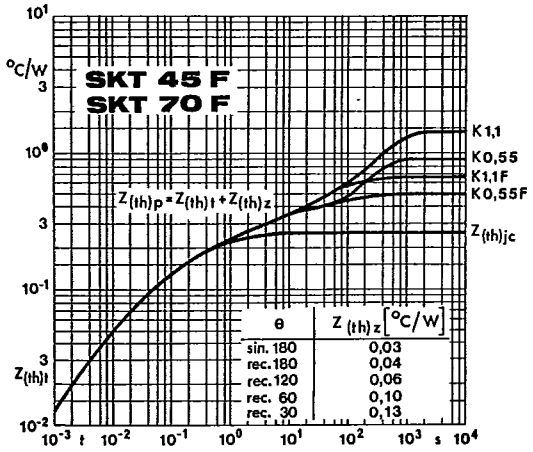


Fig. 7 Transient thermal impedance vs. time

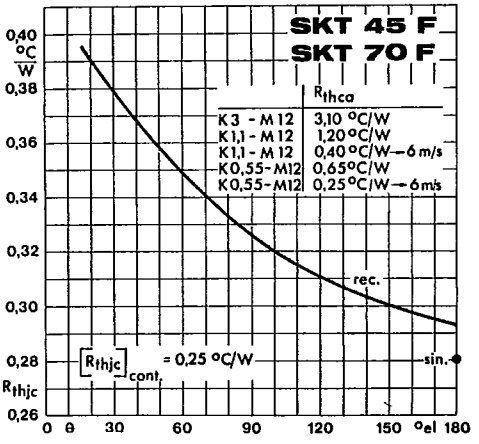


Fig. 8 Thermal resistance vs. conduction angle

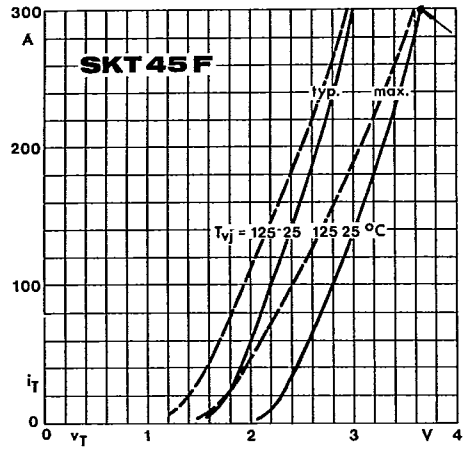


Fig. 9 a On-state characteristics

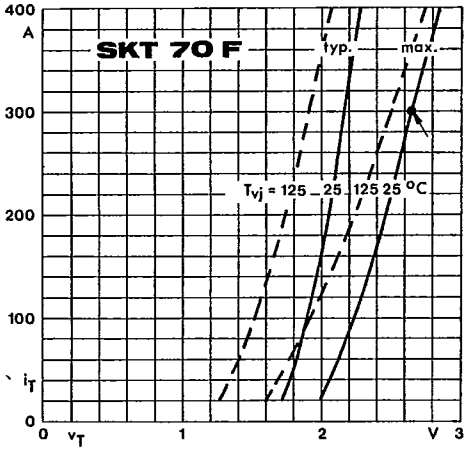


Fig. 9 b On-state characteristics

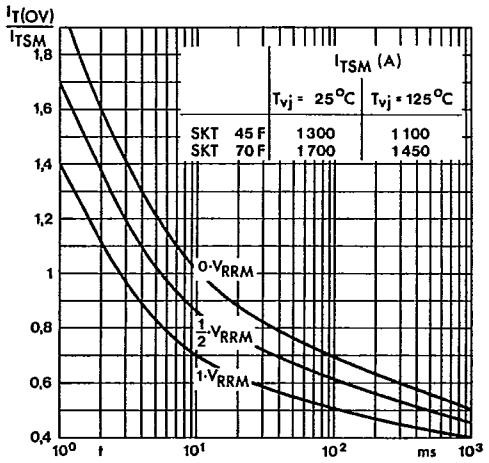


Fig. 10 Surge overload current vs. time

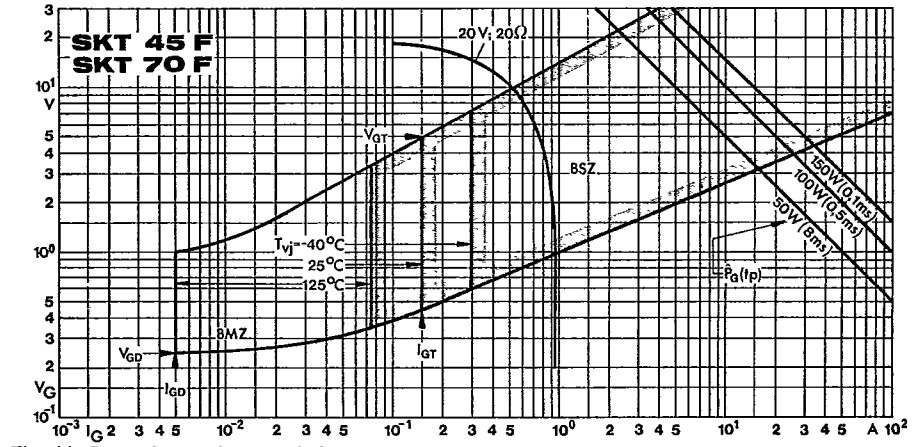


Fig. 11 Gate trigger characteristics