

V _{DRM} V _{RRM}	t _q (T _{vj} = 125 °C)	I _{TRMS} (maximum values for continuous operation)	
		900 A	1100 A
V	μs	I _{TA} V (sin. 180; T _{case} = ... °C; 50 Hz; DSC) 350 A (84 °C) 430 A (82,5 °C)	
400	15		SKT 431 F 04 DS
600	15		SKT 431 F 06 DS
	20		SKT 431 F 06 DT
800	15		SKT 431 F 08 DS
	20		SKT 431 F 08 DT
	25		SKT 351 F 08 DT SKT 351 F 08 DU
1000	15		SKT 431 F 10 DS
	20		SKT 431 F 10 DT
	25		SKT 351 F 10 DT SKT 351 F 10 DU
1200	20		SKT 351 F 12 DT
	25		SKT 351 F 12 DU
1400	30		SKT 351 F 14 DV*

Fast Thyristors with Interdigitated Amplifying Gate

SKT 351 F
SKT 431 F

T.25-19



Symbol	Conditions	SKT 351 F	SKT 431 F
I _{TM}	sin. 180; T _{case} = 60 °C; DSC; 50 Hz	1400 A	1800 A
I _{RSM}	T _{vj} = 25 °C T _{vj} = 125 °C	6500 A 5500 A	8000 A 7000 A
i ² t	T _{vj} = 25 °C T _{vj} = 125 °C	210 000 A ² s 150 000 A ² s	320 000 A ² s 245 000 A ² s
t _{gd} t _{gr} (di/dt) _{cr} (dv/dt) _{cr}	T _{vj} = 25 °C; I _G = 1 A; di _G /dt = 1 A/μs V _D = 0,67 · V _{DRM} non-repetitive f = 50 ... 60 Hz T _{vj} = 125 °C	typ. 1 μs typ. 1 μs 1000 A/μs 400 A/μs 500 V/μs	
I _H I _L	T _{vj} = 25 °C; typ./max. T _{vj} = 25 °C; R _G = 33 Ω; typ./max.	200 mA/400 mA 1 A/2 A	
V _T V _{T(RO)} r _T	T _{vj} = 25 °C; I _T = 1200 A; max. T _{vj} = 125 °C T _{vj} = 125 °C	2,4 V 1,9 V 0,4 mΩ	2,0 V 1,4 V 0,5 mΩ
I _{DD} , I _{RD}	T _{vj} = 125 °C; V _{DD} = V _{DRM} ; V _{RD} = V _{RRM}	80 mA	80 mA
V _{GT} I _{GT} V _{GD} I _{GD}	T _{vj} = 25 °C T _{vj} = 25 °C T _{vj} = 125 °C T _{vj} = 125 °C	4 V 250 mA 0,25 V 10 mA	
R _{thjc} R _{thch} T _{vj} T _{stg}	cont.; DSC/SSC DSC/SSC	0,045/0,092 °C/W 0,012/0,024 °C/W -40 ... +125 °C -40 ... +125 °C	
F w	SI units US units	5,2 ... 7,5 kN 1150 ... 1650 lbs. 105 g	
Case	→ page B 4-21	B 11	

Features

- Capsule cases
- Hermetic ceramic to metal sealing
- Gold diffused silicon chips
- 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

* Available in limited quantities

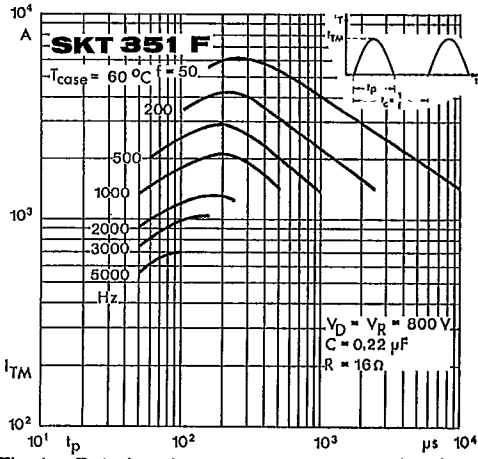


Fig. 1 a Rated peak on-state current vs. pulse duration

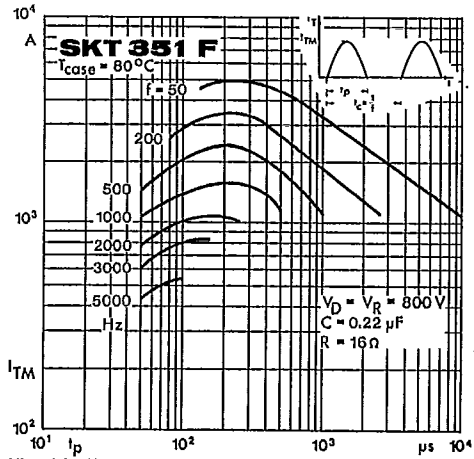


Fig. 1 b Rated peak on-state current vs. pulse duration

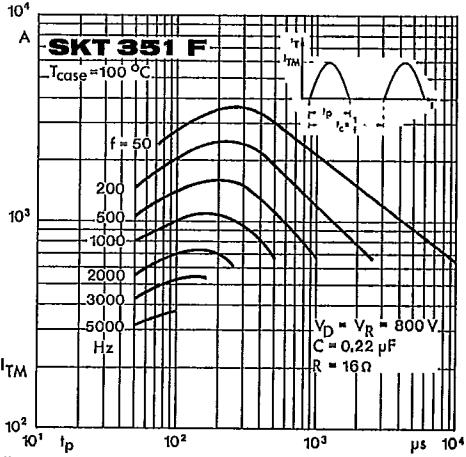


Fig. 1 c Rated peak on-state current vs. pulse duration

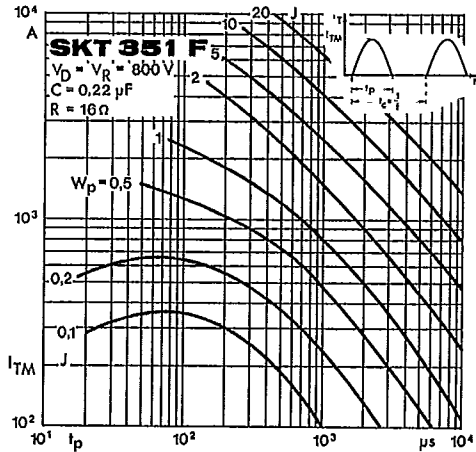


Fig. 2 Energy dissipation per pulse

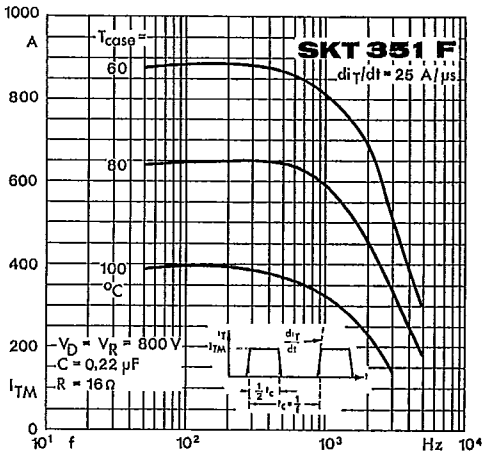


Fig. 3 a Rated peak on-state current vs. pulse duration

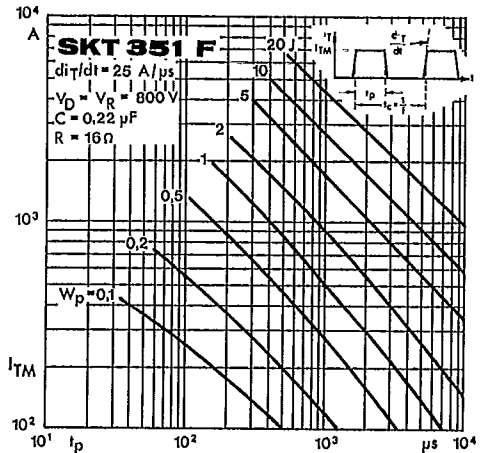


Fig. 4 a Energy dissipation per pulse

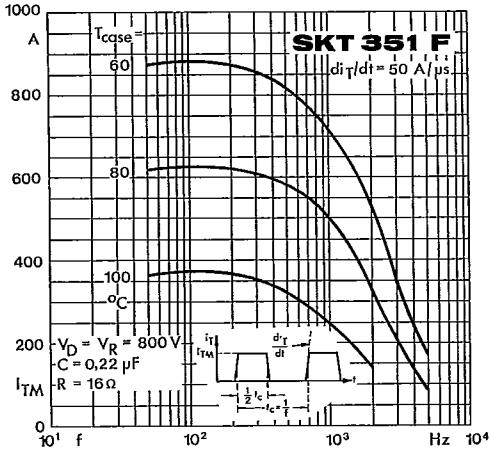


Fig. 3 c Rated peak on-state current vs. pulse duration

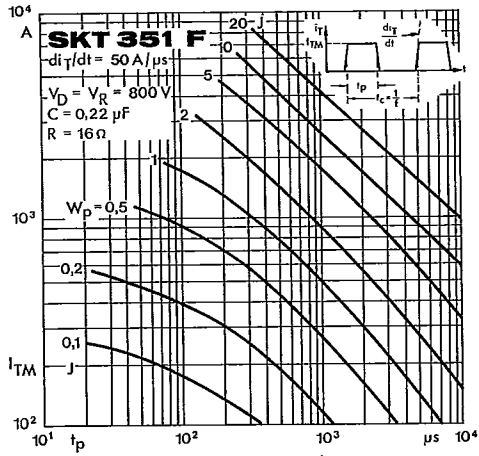


Fig. 4 c Energy dissipation per pulse

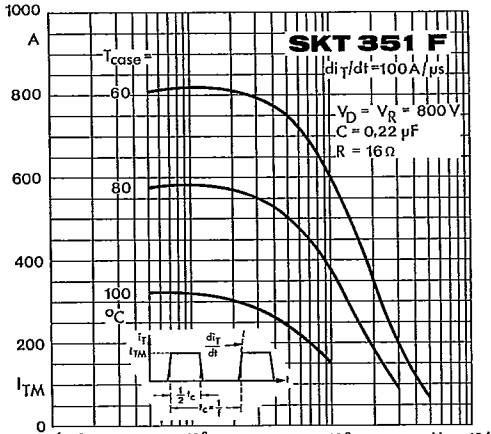


Fig. 3 b Rated peak on-state current vs. pulse duration

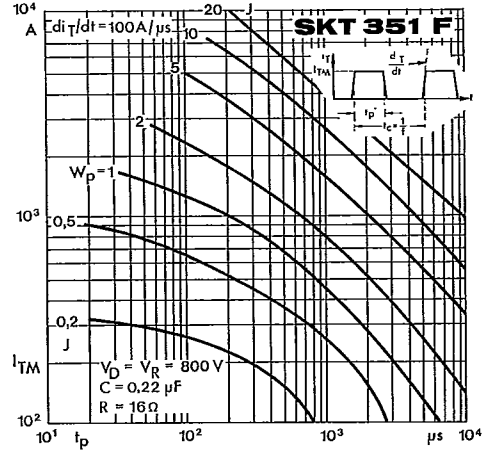


Fig. 4 b Energy dissipation per pulse

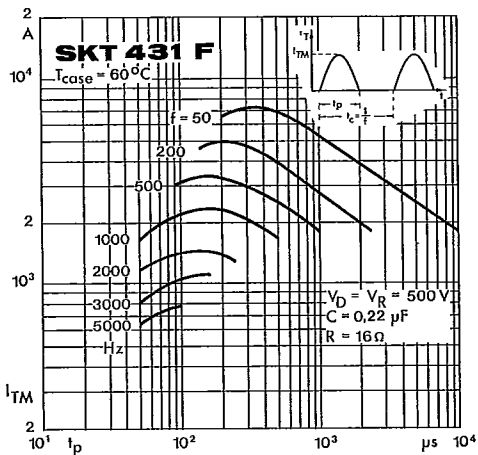


Fig. 1 a Rated peak on-state current vs. pulse duration

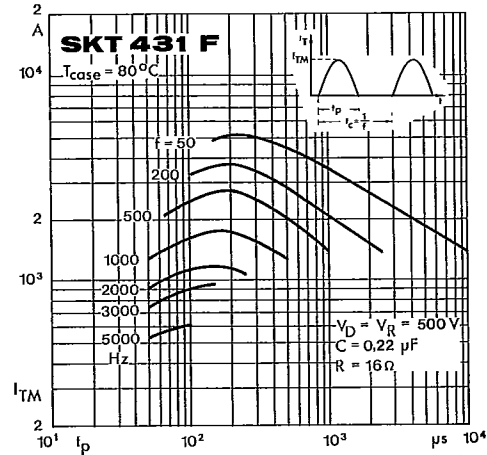


Fig. 1 b Rated peak on-state current vs. pulse duration

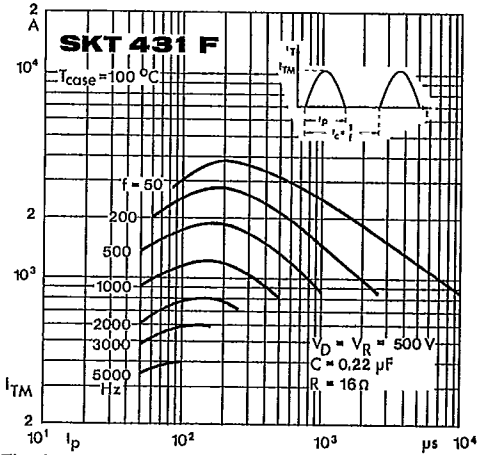


Fig. 1 c Rated peak on-state current vs. pulse duration

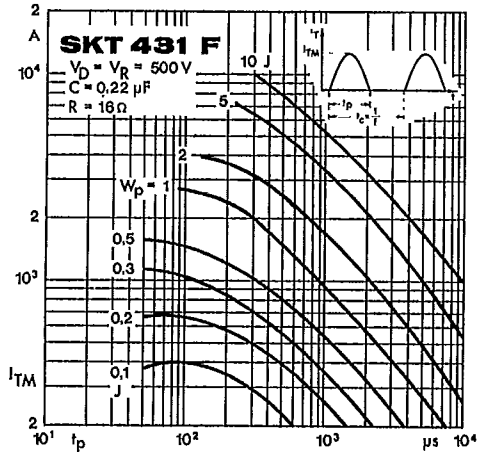


Fig. 2 Energy dissipation per pulse

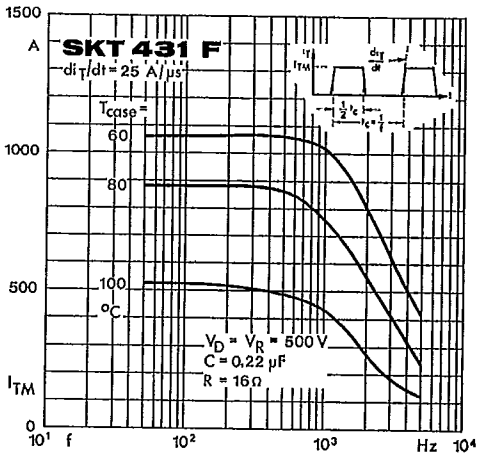


Fig. 3 a Rated peak on-state current vs. pulse duration

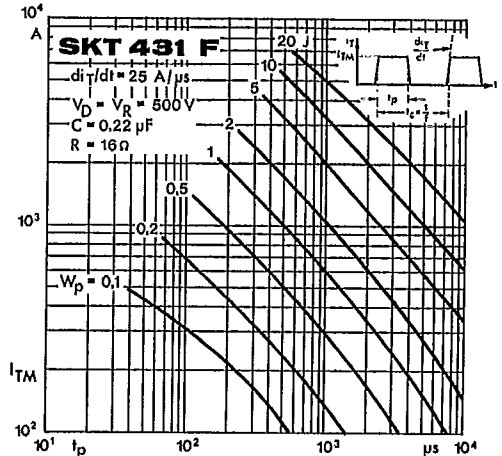


Fig. 4 a Energy dissipation per pulse

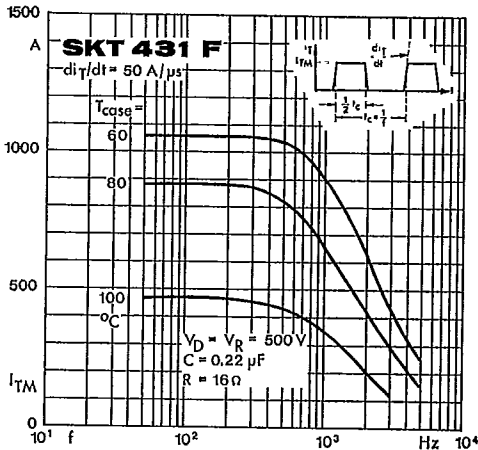


Fig. 3 b Rated peak on-state current vs. pulse duration

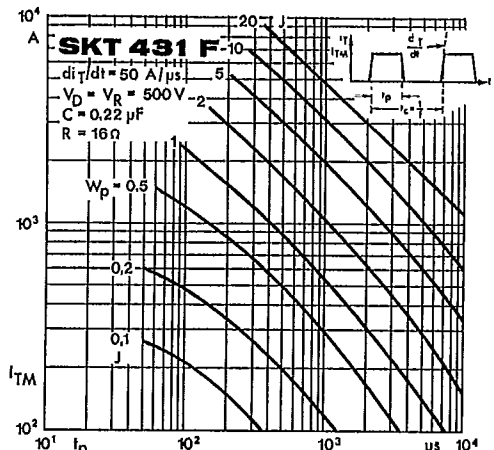


Fig. 4 b Energy dissipation per pulse

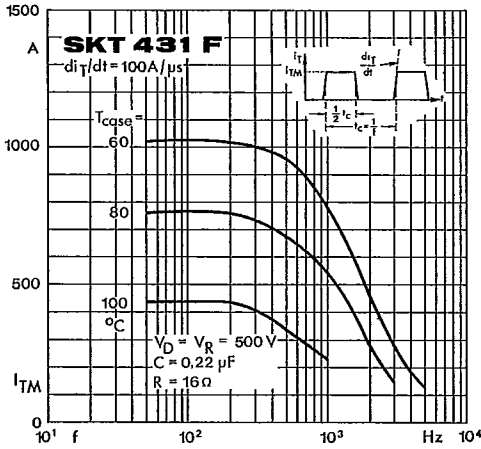


Fig. 3 c Rated peak on-state current vs. pulse duration

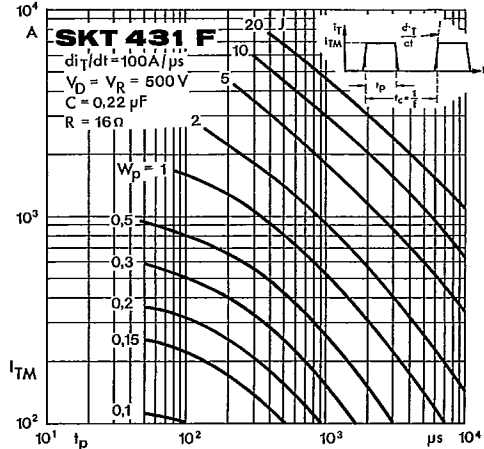


Fig. 4 c Energy dissipation per pulse

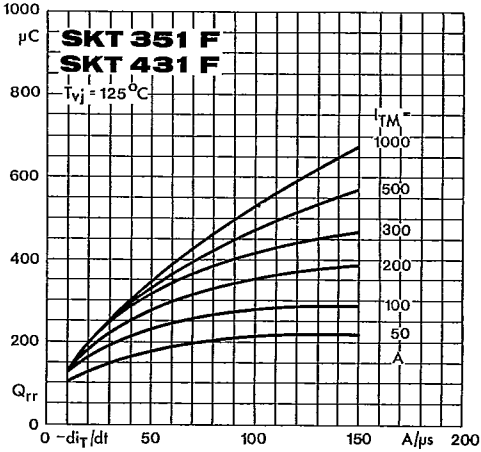


Fig. 5 Recovered charge vs. current decrease

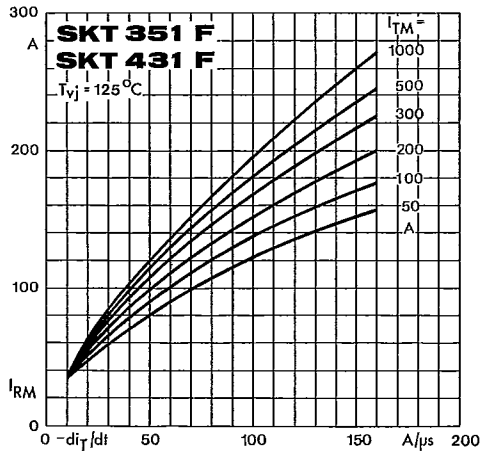


Fig. 6 Peak recovery current vs. current decrease

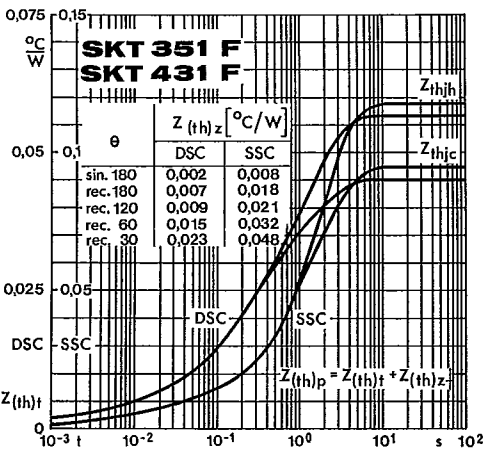


Fig. 7 Transient thermal impedance vs. time

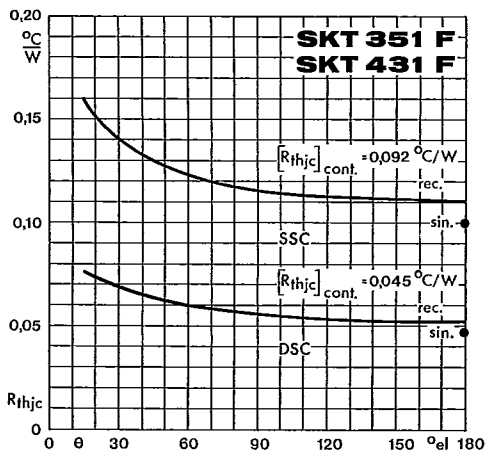


Fig. 8 Thermal resistance vs. conduction angle

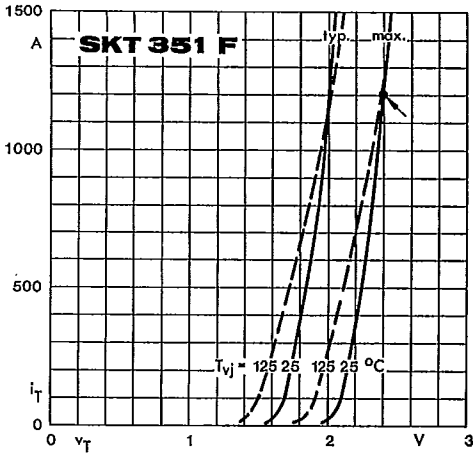


Fig. 9 a On-state characteristics

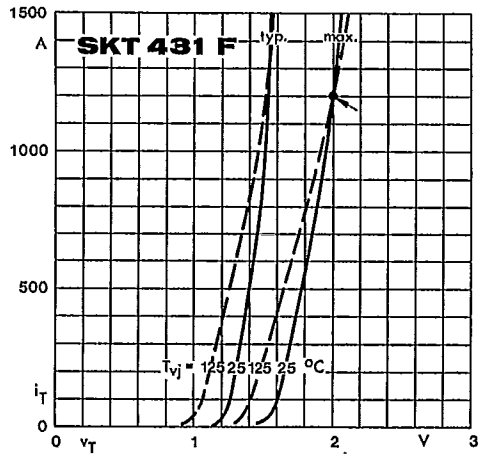


Fig. 9 b On-state characteristics

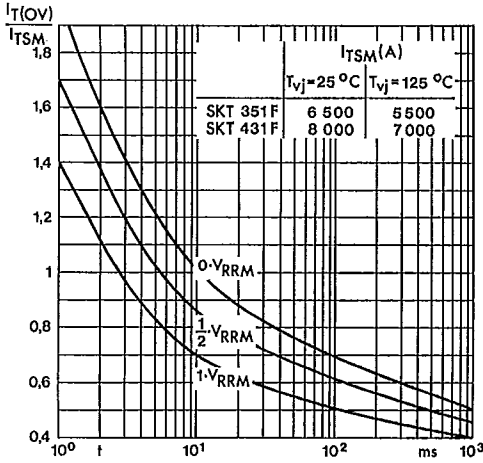


Fig. 10 Surge overload current vs. time

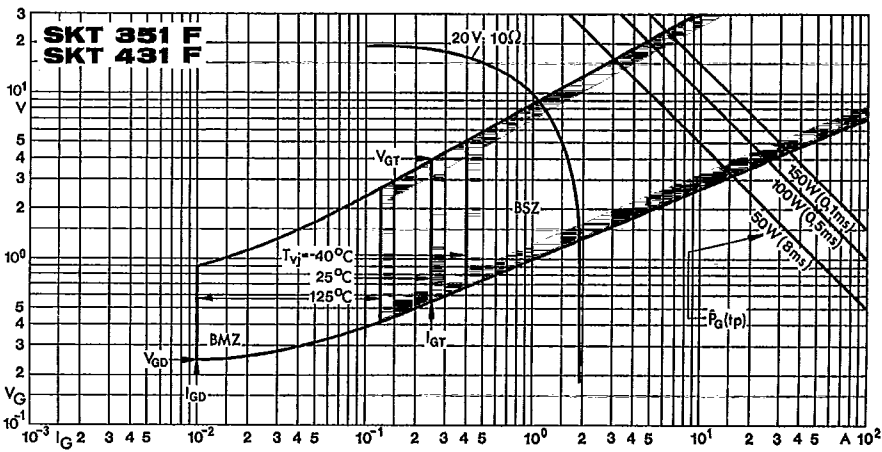


Fig. 11 Gate trigger characteristics