Fast Thyristor/ Diode Modules

V_{RSM} V_{RRM}	I_{FRMS} (maximum values for continuous operation)			
	130 A	130 A	300 A	300 A
	I_{FAV} (sin. 180; T_{case} = ... °C; 50 Hz)			
V	60 A (94 °C)	60 A (94 °C)	160 A (86 °C)	160 A (86 °C)
400	–	–	**SKFH 110 /04..**	–
800	**SKFH 40/08**	**SKFH 60/08..**	**SKFH 110 /08..**	**SKKD 160 M 08**
1000	**SKFH 40/10**	**SKFH 60/10..**	**SKFH 110 /10..**	**SKKD 160 M 10**
1200	**SKFH 40/12**	**SKFH 60/12..**	**SKFH 110 /12..**	**SKKD 160 M 12**
1400	–	–	–	**SKKD 160 M 14**

Symbol	Conditions	SKFH 40[1] SKFH 60[1]	SKKD 160 M SKFH 110[1]
I_{FAV}	sin. 180; T_{case} = 85 °C	73 A	163 A
I_{FSM}	T_{vj} = 25 °C $T_{vj\,max}$	1800 A 1500 A	7000 A 6000 A
i^2t	T_{vj} = 25 °C $T_{vj\,max}$	16000 A^2s 11000 A^2s	245000 A^2s 180000 A^2s
t_{rr}	T_{vj} = 25 °C; I_F = 1 A; $-di_F/dt$ = 15 A/µs; V_R = 30 V	2 µs	2 µs
Q_{rr}	$T_{vj\,max}$; I_F = 100 A; $-di_F/dt$ = 30 A/µs; V_R = 30 V	65 µC	65 µC
I_{RM}		35 A	45 A
I_R	T_{vj} = 25 °C; V_R = V_{RRM} $T_{vj\,max}$; V_R = V_{RRM}	1 mA 10 mA	2 mA 50 mA
V_F	T_{vj} = 25 °C; I_F = ... A	1,6 V (200 A)	1,5 V (400 A)
$V_{(TO)}$	$T_{vj\,max}$	1,0 V	1,25 V
r_T		2 mΩ	0,5 mΩ
R_{thjc}	per diode/per module	0,4/0,2 °C/W[2]	0,19/0,095°C/W[2]
R_{thch}		0,2/0,1 °C/W	0,06/0,03 °C/W
T_{vj}		–40 ... +125 °C	–40 ... +130 °C
T_{stg}		–40 ... +125 °C	–40 ... +130 °C
V_{isol}	a. c. 50 Hz; r.m.s; 1 s/1 min.	3000 V~ /2500 V~[2]	
M_1	Case to heatsink — SI units/ US units	5 Nm/44 lb. in. ± 15 %	5 Nm/44 lb. in. ± 15 %
M_2	Busbars to terminals — SI units/ US units	3 Nm/26 lb. in. ± 15 %	9 Nm/80 lb. in. ± 15 %
w	approx.	120 g	800 g
Case	→ page B 2 – 12	A 8	
Case	→ page B 2 – 32 SKKD SKFH		A 16 A 14

SEMIPACK® 1

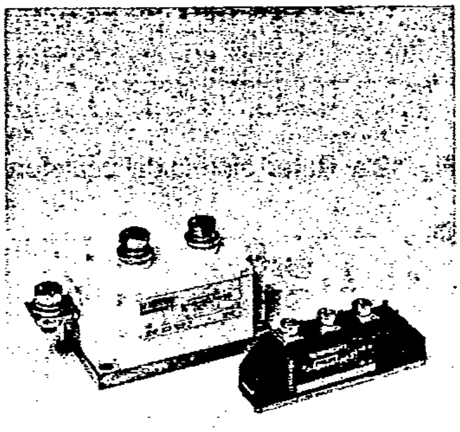
SKFH 40
Diode data[1)]

SKFH 60
Diode data[1)]

SEMIPACK® 3

SKKD 160 M

SKFH 110
Diode data[1)]



SKFH **SKKD**

Features

- Heat transfer through ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- SKKD 160 M: Precious metal pressure contacts
- UL recognized, file no. E 63 532

Typical Applications

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

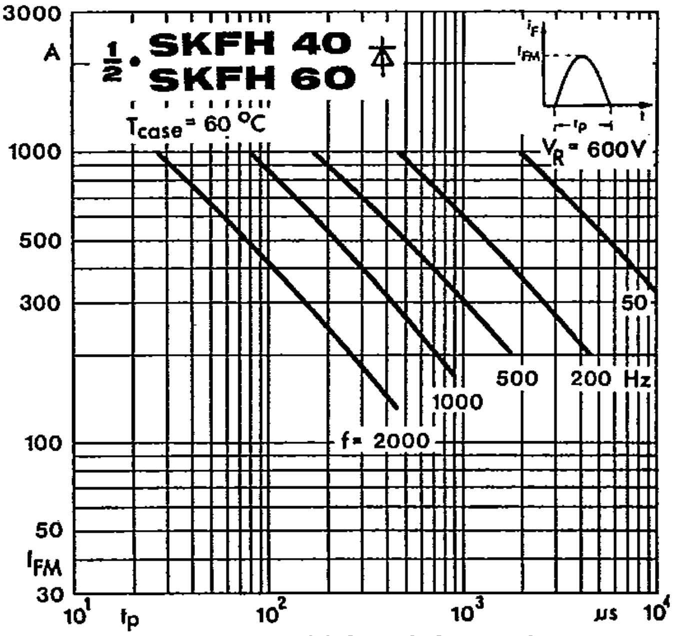


Fig. 12 a Rated sinusoidal peak forward current

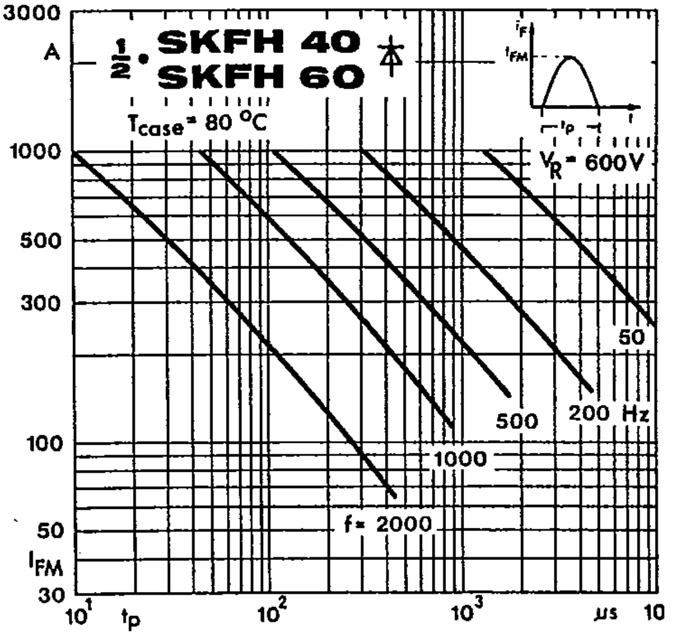


Fig. 12 b Rated sinusoidal peak forward current

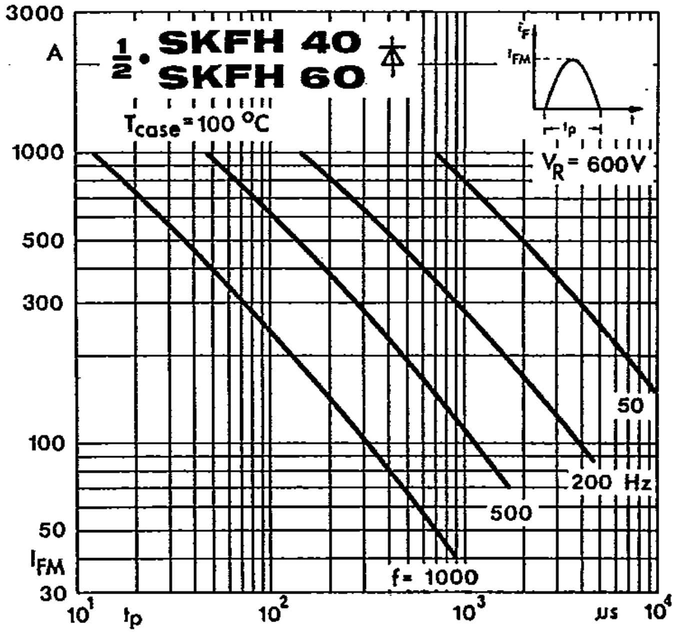


Fig. 12 c Rated sinusoidal peak forward current

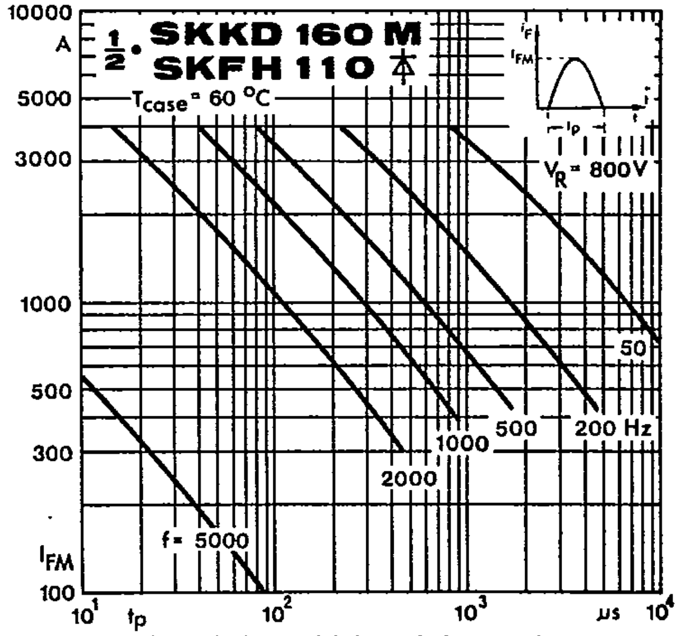


Fig. 12 d Rated sinusoidal peak forward current

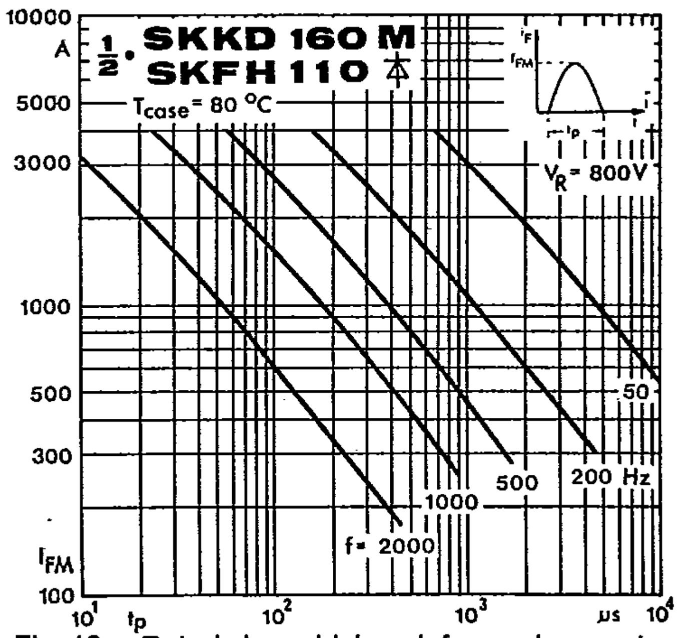


Fig. 12 e Rated sinusoidal peak forward current

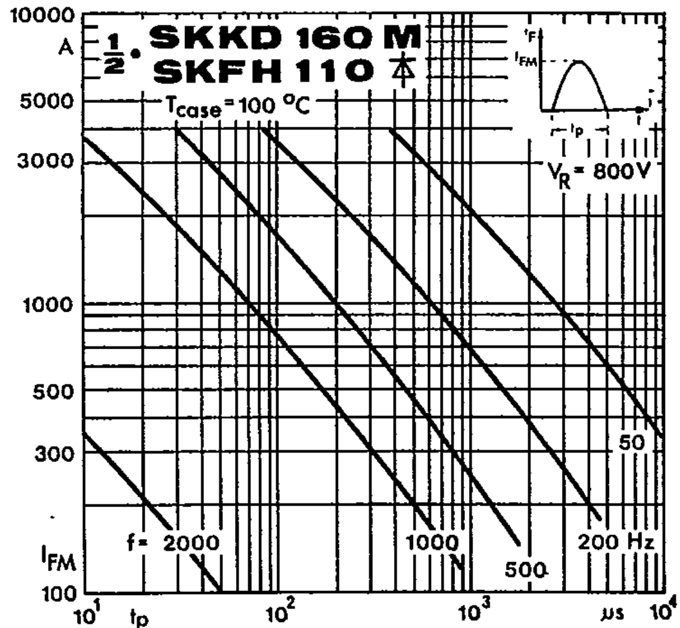


Fig. 12 f Rated sinusoidal peak forward current

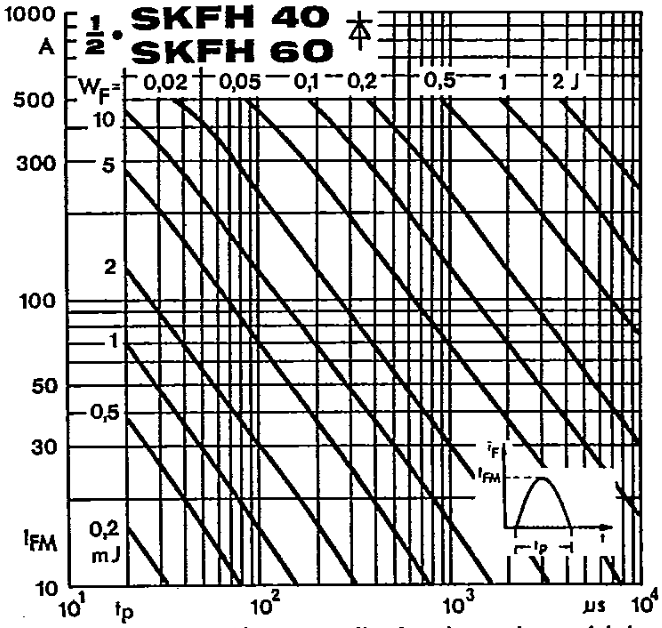


Fig. 13 a Forward energy dissipation, sinusoidal

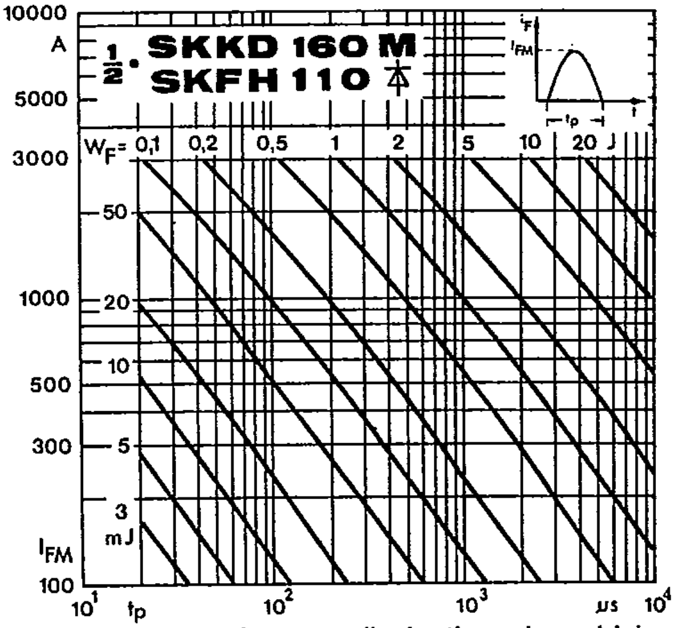


Fig. 13 b Forward energy dissipation, sinusoidal

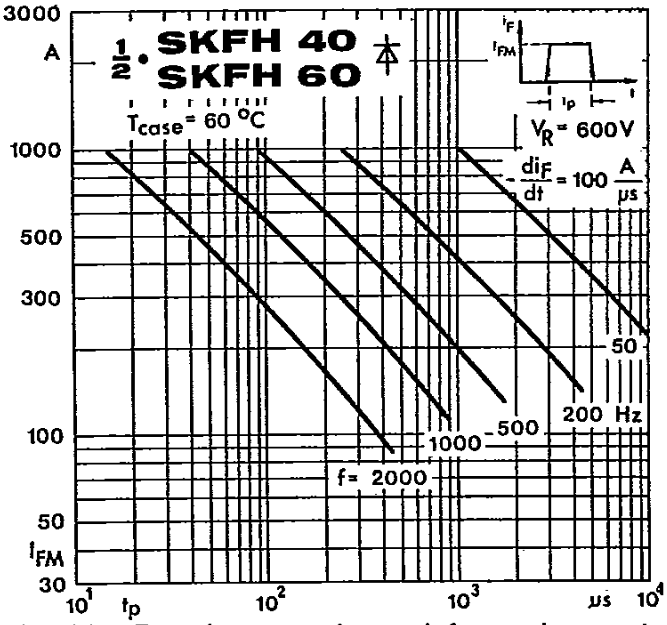


Fig. 14 a Rated rectangular peak forward current

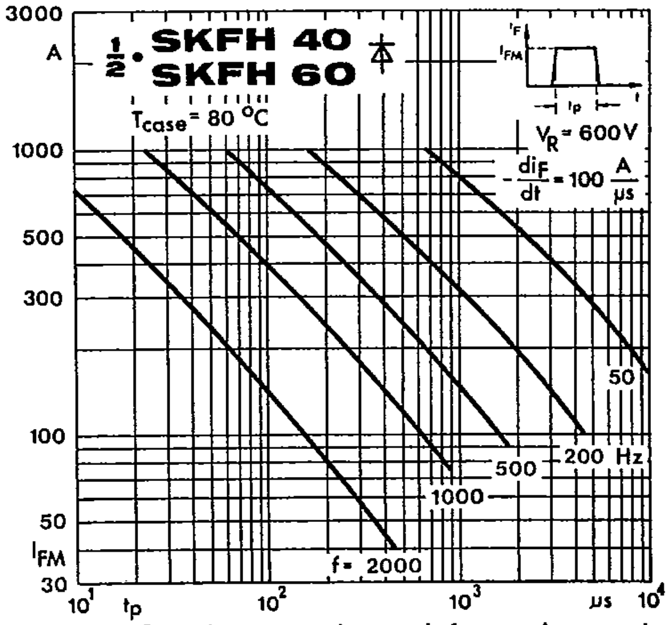


Fig. 14 b Rated rectangular peak forward current

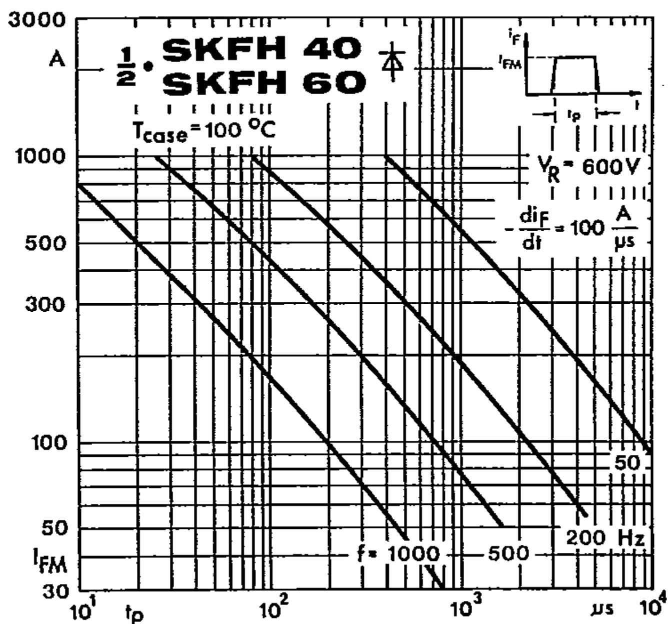


Fig. 14 c Rated rectangular peak forward current

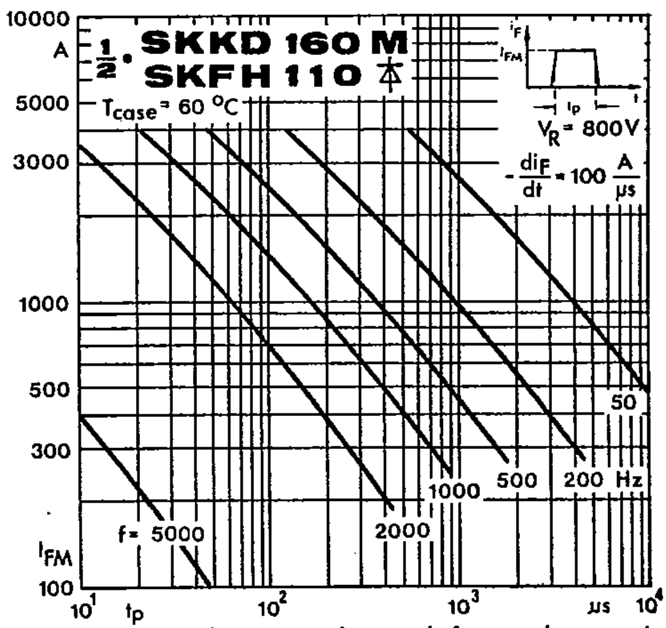


Fig. 14 d Rated rectangular peak forward current

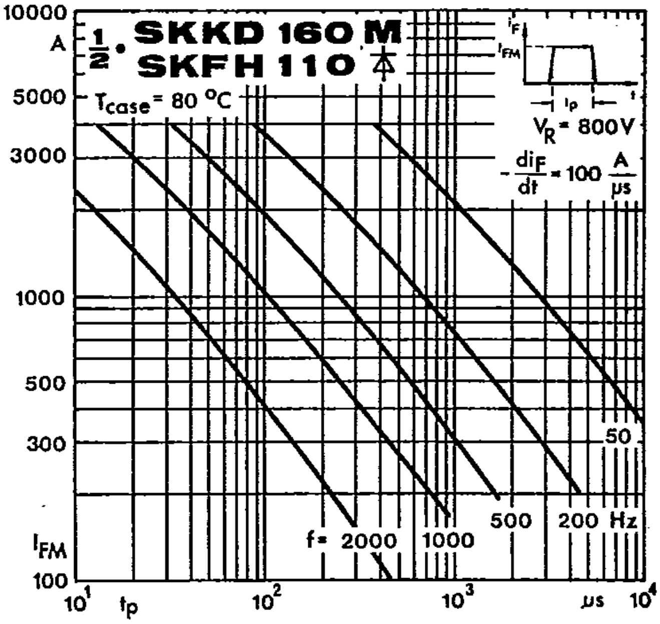


Fig. 14 e Rated rectangular peak forward current

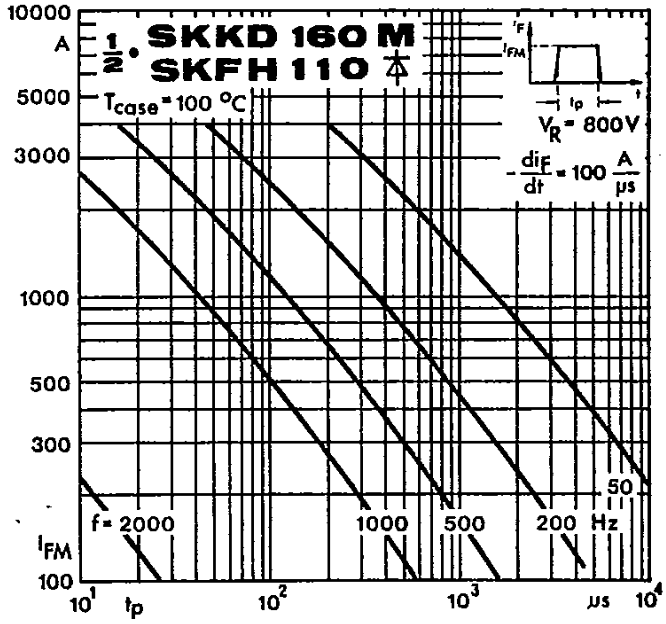


Fig. 14 f Rated rectangular peak forward current

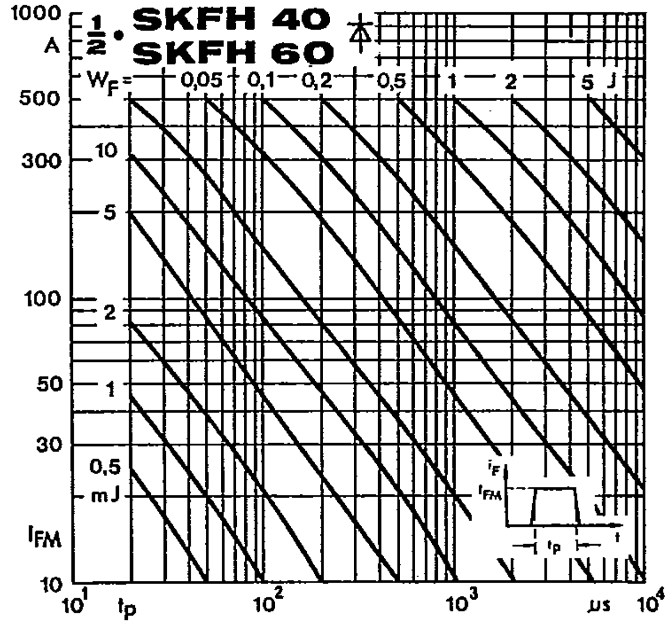


Fig. 15 a Forward energy dissipation, rectangular

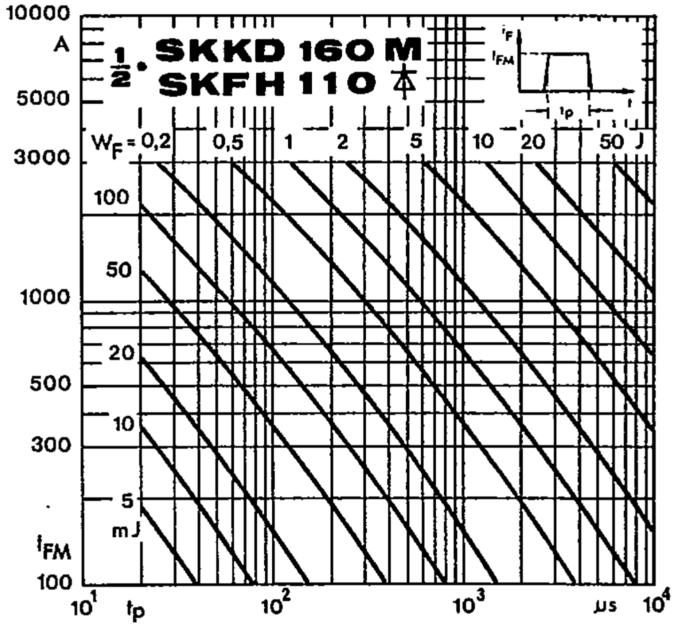


Fig. 15 b Forward energy dissipation, rectangular

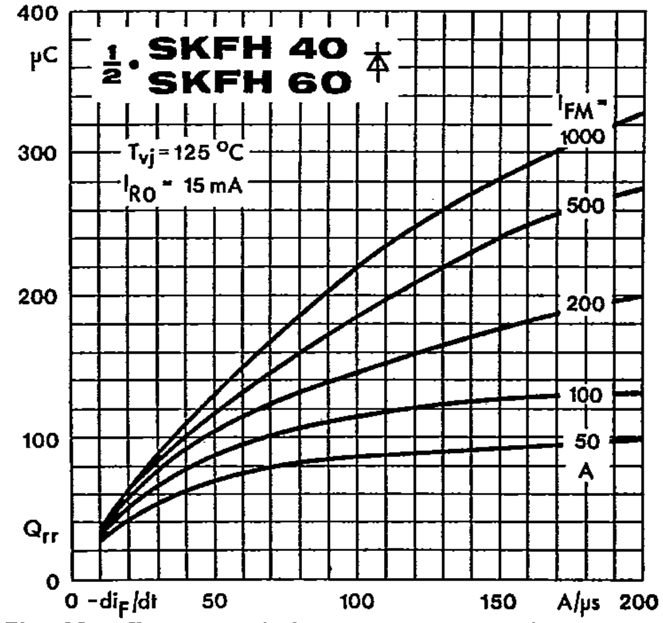


Fig. 16 a Recovered charge vs. current decrease

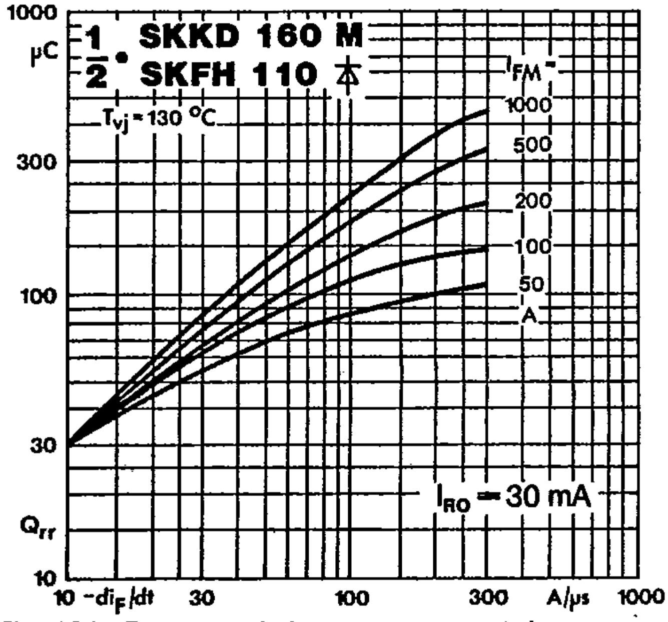


Fig. 16 b Recovered charge vs. current decrease

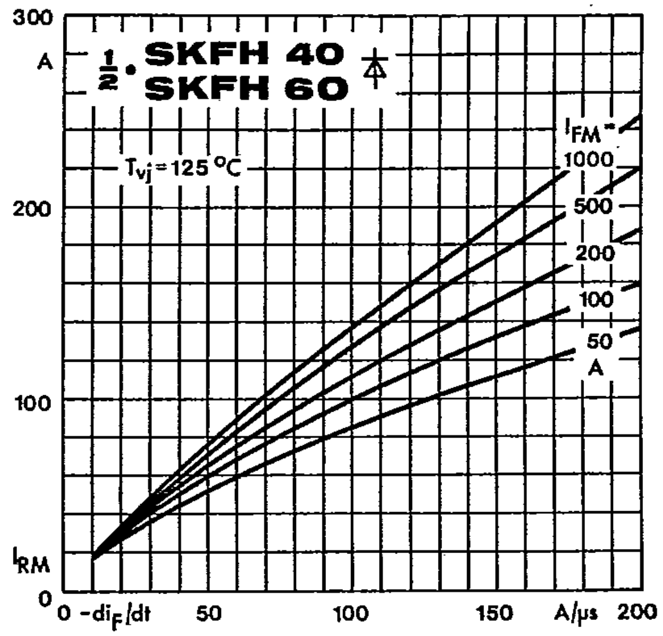


Fig. 17 a Peak recovery current vs. current decrease

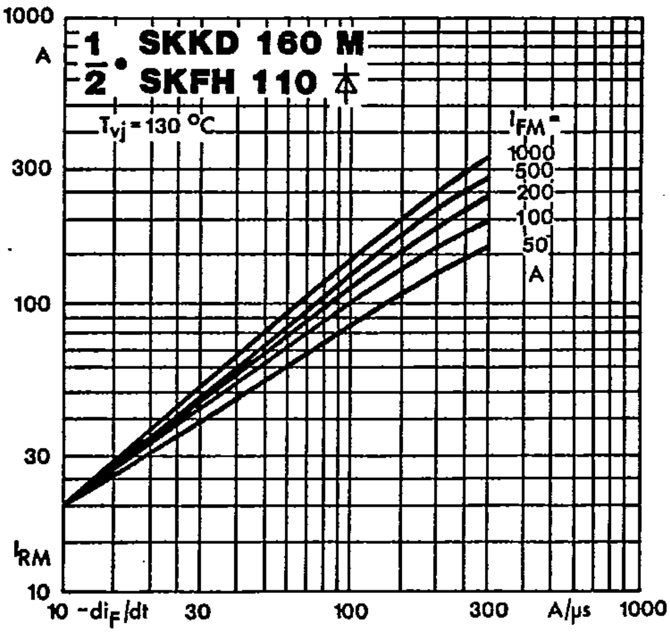


Fig. 17 b Peak recovery current vs. current decrease

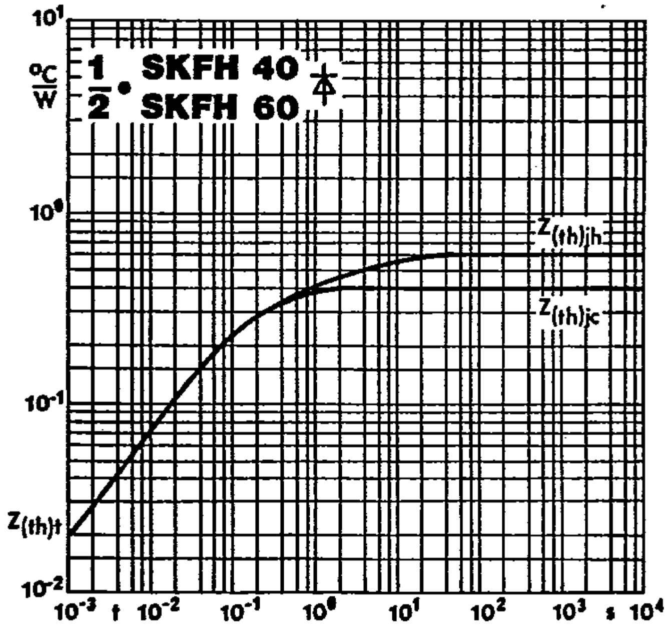


Fig. 18 a Transient thermal impedance vs. time

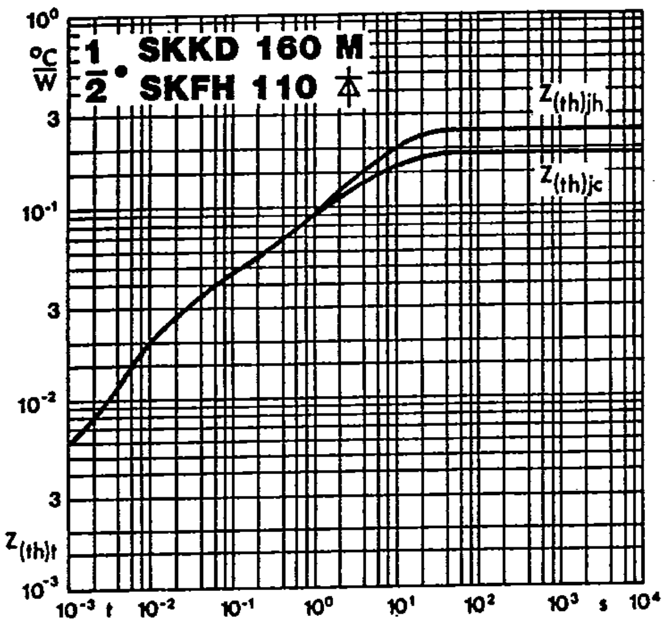


Fig. 18 b Transient thermal impedance vs. time

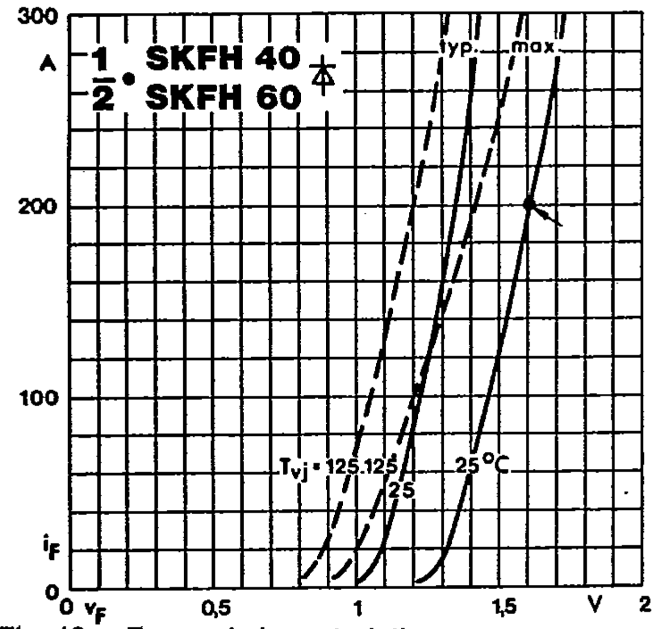


Fig. 19 a Forward characteristics

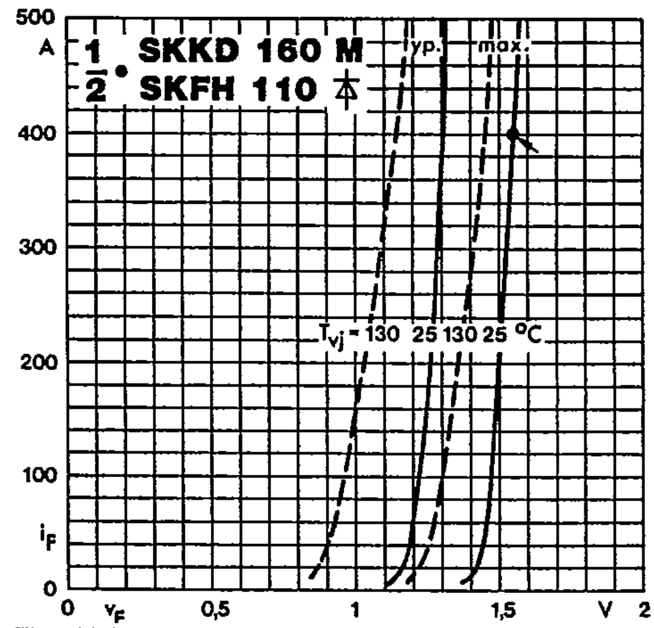


Fig. 19 b Forward characteristics

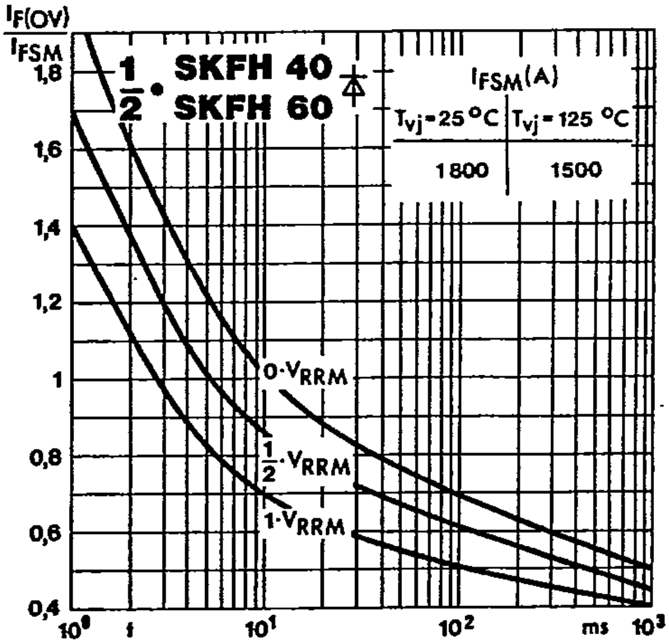


Fig. 20 a Surge overload current vs. time

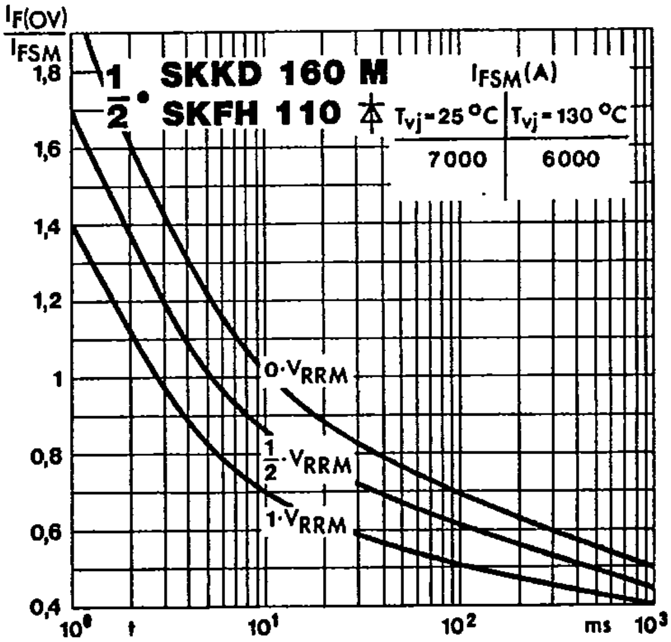


Fig. 20 b Surge overload current vs. time