

Ultrafast Epitaxial Diode Modules

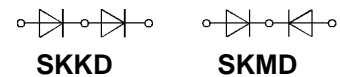
SEMIPACK® 1
SKKD 50 E SKND 50 E

SEMIPACK® 2
SKMD 202 E SKND 202 E



V_{RSM} V_{RRM}	I_{FRMS} (maximum value for continuous operation)			
	110 A		325 A	
V	I_{FAV} (sin. 180; $T_{case} = 85\text{ °C}$; 50 Hz)			
	48,5 A		207 A	
100	SKKD 50 E 01	SKND 50 E 01	SKMD 202 E 01	SKND 202 E 01
200	SKKD 50 E 02	SKND 50 E 02	SKMD 202 E 02	SKND 202 E 02
300	SKKD 50 E 03	SKND 50 E 03	SKMD 202 E 03	SKND 202 E 03
400	SKKD 50 E 04	SKND 50 E 04	–	–

Symbol	Conditions	SKKD 50 E SKND 50 E	SKMD 202 E SKND 202 E	Units		
I_{FAV}	sin. 180; $T_{case} = 85\text{ °C}$	48,5	207	A		
I_{FSM}	$T_{vj} = 25\text{ °C}$ $T_{vj} = 150\text{ °C}$	800 700	3200 2800	A A		
i^2t	$T_{vj} = 25\text{ °C}$ $T_{vj} = 150\text{ °C}$	3200 2450	51 000 39 000	A^2s A^2s		
t_{rr}	$T_{vj} = 25\text{ °C}$; $I_F = 1\text{ A}$; – $di_F/dt = 15\text{ A}/\mu s$; $V_R = 30\text{ V}$; $i_{rr} = 0,25 I_{RM}$	60	140	ns		
Q_{rr}	$T_{vj} = 150\text{ °C}$; $I_F = 50\text{ A}$; – $di_F/dt = 100\text{ A}/\mu s$; $V_R = 100\text{ V}$	0,7	2	μC		
I_{RM}		10	16	A		
I_R	$T_{vj} = 25\text{ °C}$; $V_R = V_{RRM}$	0,2	2	mA		
I_R	$T_{vj} = 130\text{ °C}$; $V_R = V_{RRM}$	40	100	mA		
V_F	$T_{vj} = 25\text{ °C}$; ($I_F = \dots$); max.	1,6 (120 A)	1,65 (500 A)	V		
$V_{(TO)}$	$T_{vj} = 150\text{ °C}$	0,8	0,8	V		
r_T	$T_{vj} = 150\text{ °C}$	6,5	1,5	$m\Omega$		
R_{thjc}	per diode/per module	0,85/0,43	0,2/0,1	$^{\circ}C/W$		
R_{thch}	per diode/per module	0,2/0,1	0,1/0,05	$^{\circ}C/W$		
T_{vj}		– 40 ... +150	– 40 ... +150	$^{\circ}C$		
T_{stg}		– 40 ... +125	– 40 ... +125	$^{\circ}C$		
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s 1 min	3000 2500	3000 2500	V_{\sim} V_{\sim}		
M_1	Case to heatsink Busbars to terminals approx.	SI (US) units 5 (44 lb. in.) $\pm 15\%$	5 (44 lb. in.) $\pm 15\%$	Nm		
M_2				3 (26 lb. in.) $\pm 15\%$	5 (44 lb. in.) $\pm 15\%$	Nm
w				120	250	g
Case	→ page B 2 – 20	SKKD A 20 SKMD – SKND A 19	– A 51 A 52			



Features

- Isolated baseplate
- Very short recovery times
- Low switching losses
- Up to 400 V peak inverse voltage
- **SKKD** halfbridge or center tap connections
- **SKMD** common cathode
- **SKND** common anode
- UL recognized, file no. E63 532

Typical Applications

- Switched mode power converters
- Invers diode for transistors in AC and DC motor controls
- Uninterruptible power supplies (UPS)

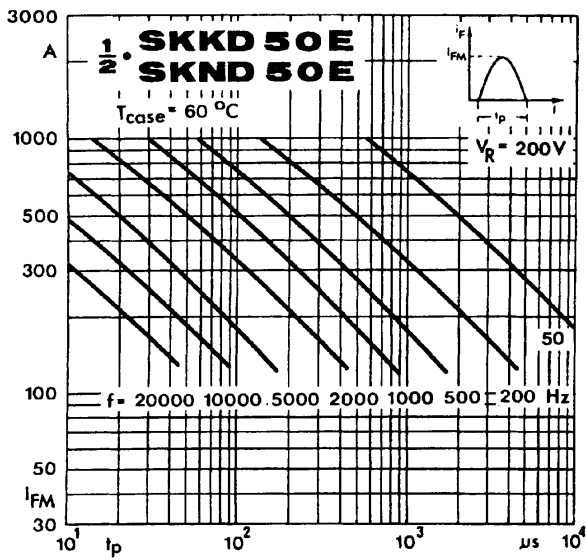


Fig. 12 a Rated sinusoidal peak forward current

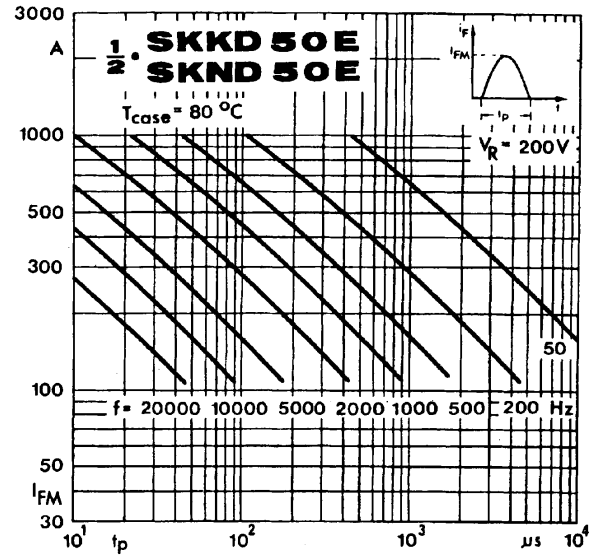


Fig. 12 b Rated sinusoidal peak forward current

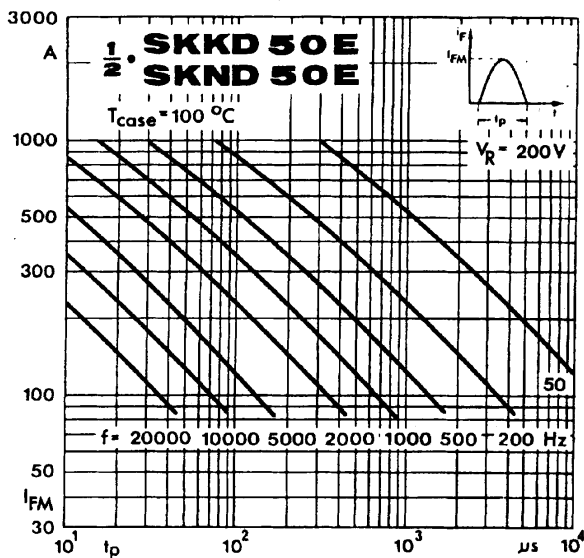


Fig. 12 c Rated sinusoidal peak forward current

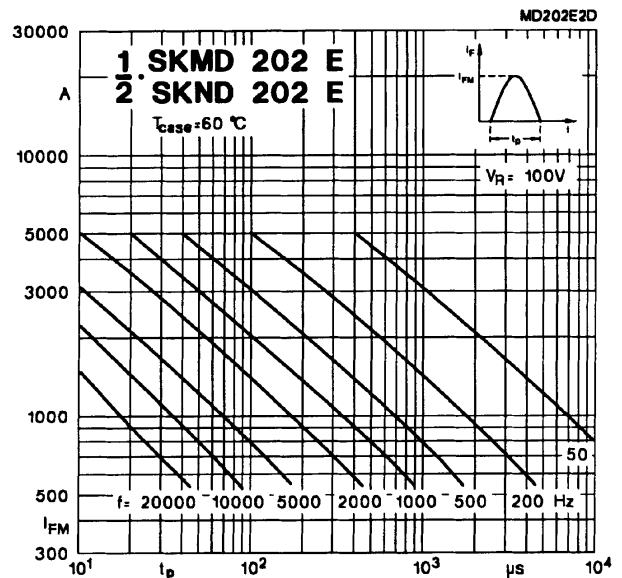


Fig. 12 d Rated sinusoidal peak forward current

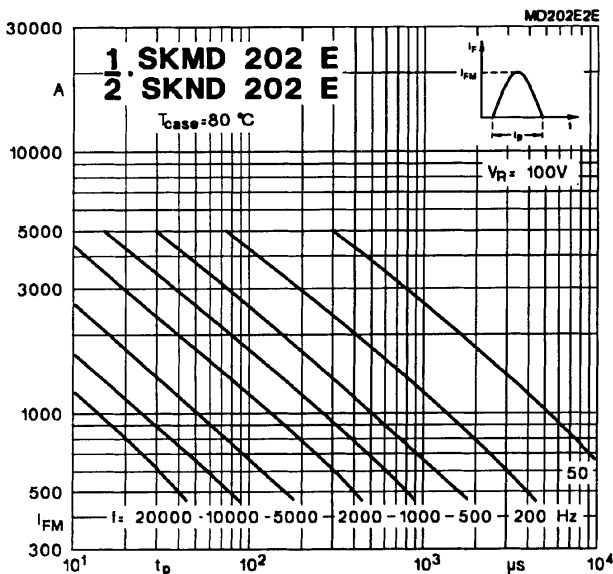


Fig. 12 e Rated sinusoidal peak forward current

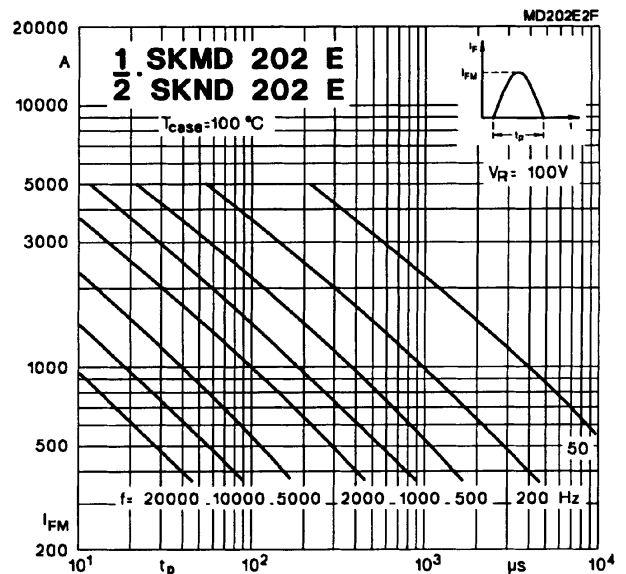


Fig. 12 f Rated sinusoidal peak forward current

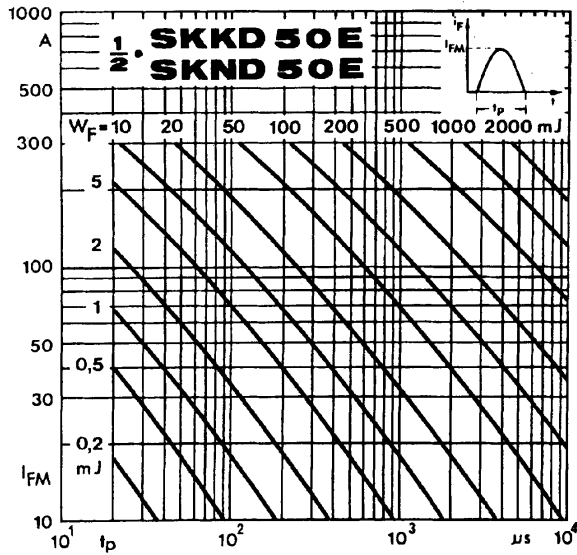


Fig. 13 a Forward energy dissipation, sinusoidal

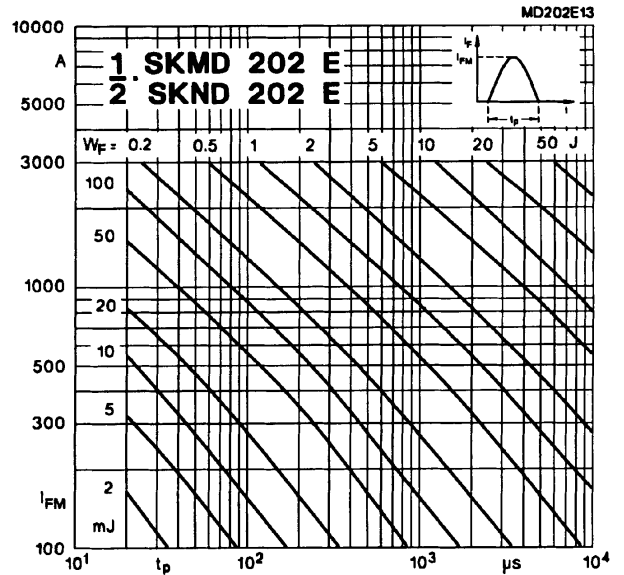


Fig. 13 b Forward energy dissipation, sinusoidal

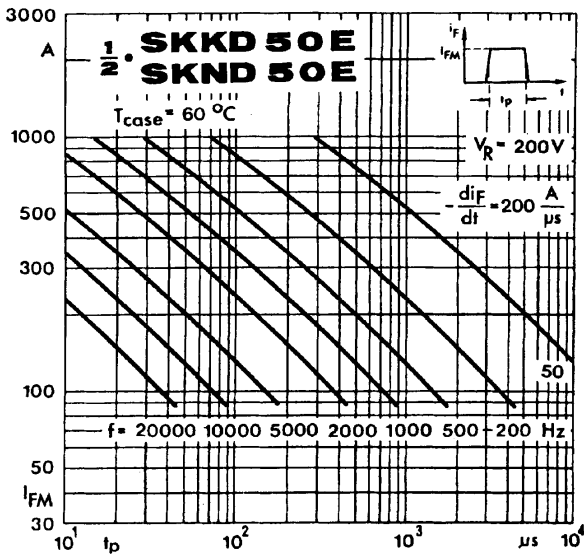


Fig. 14 a Rated rectangular peak forward current

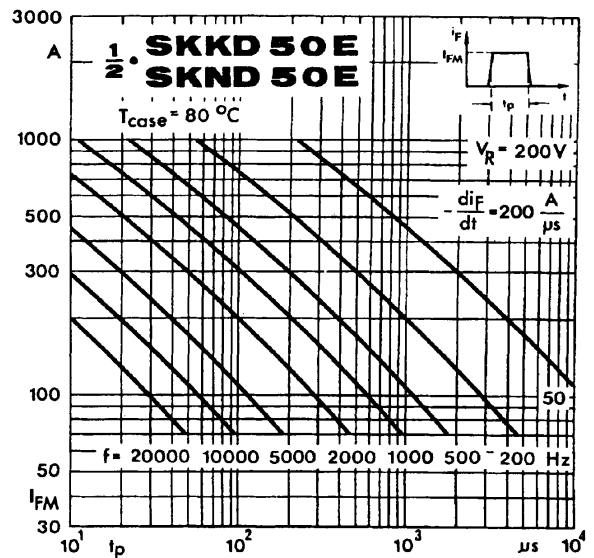


Fig. 14 b Rated rectangular peak forward current

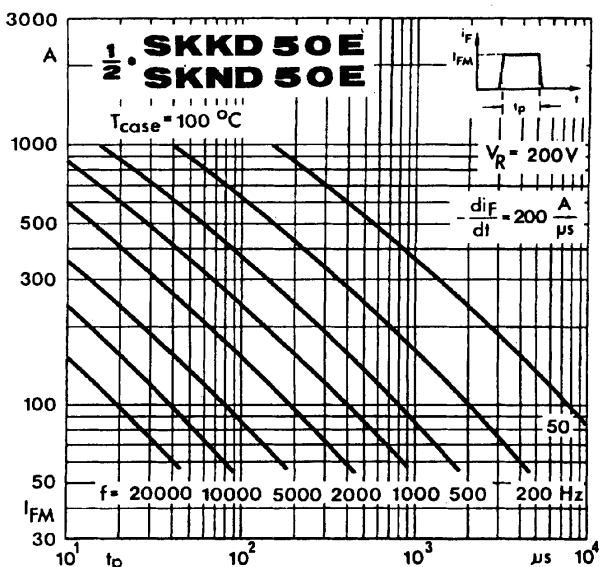


Fig. 14 c Rated rectangular peak forward current

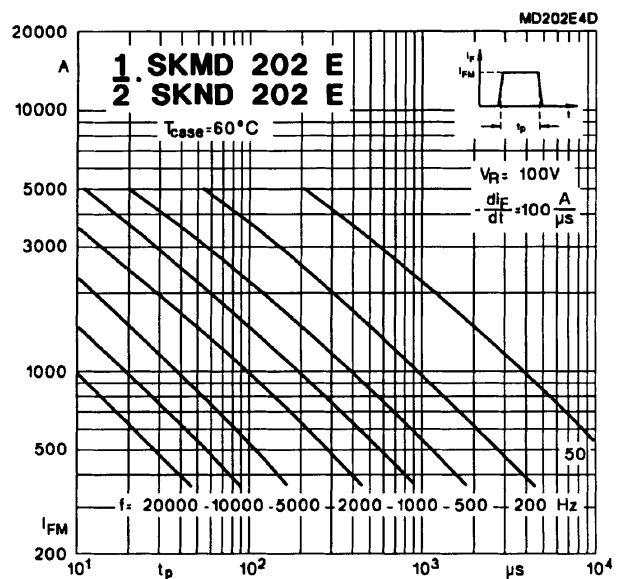


Fig. 14 d Rated rectangular peak forward current

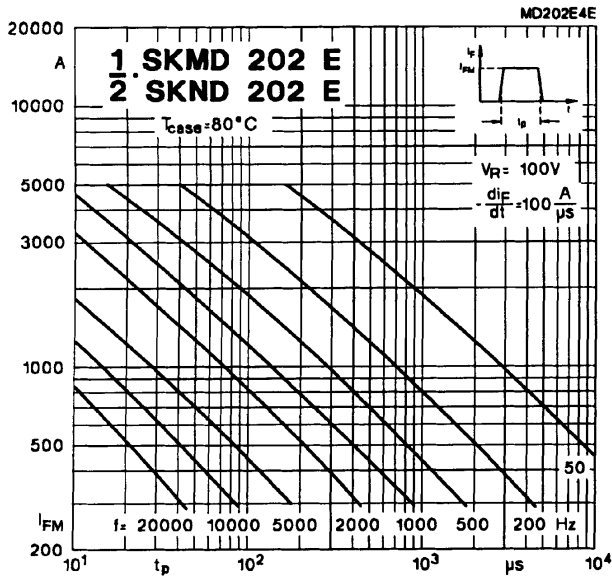


Fig. 14 e Rated rectangular peak forward current

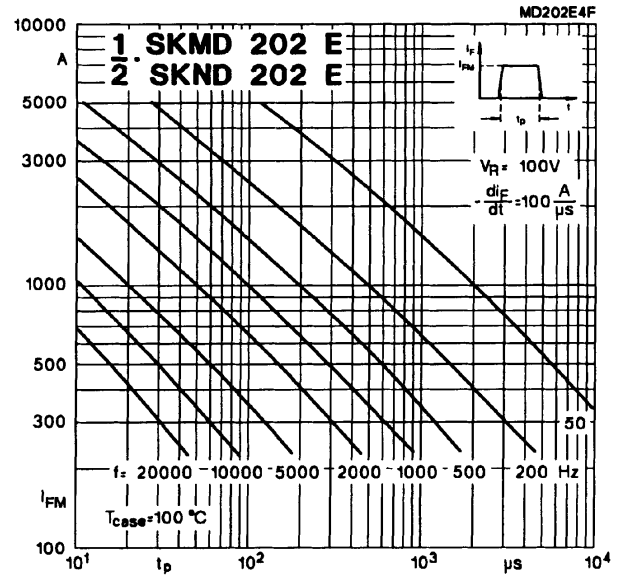


Fig. 14 f Rated rectangular peak forward current

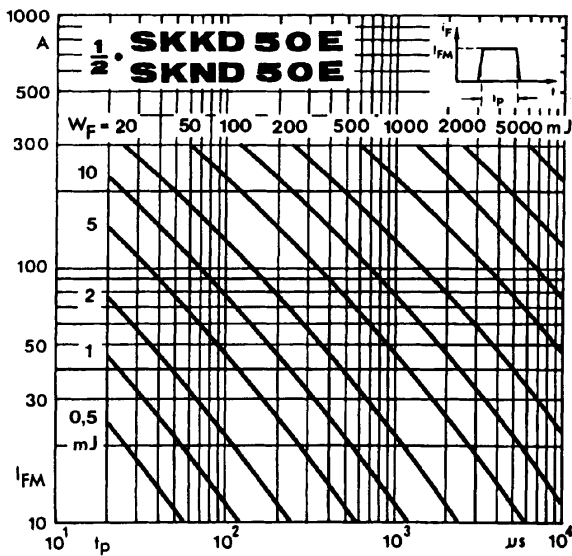


Fig. 15 a Forward energy dissipation, rectangular

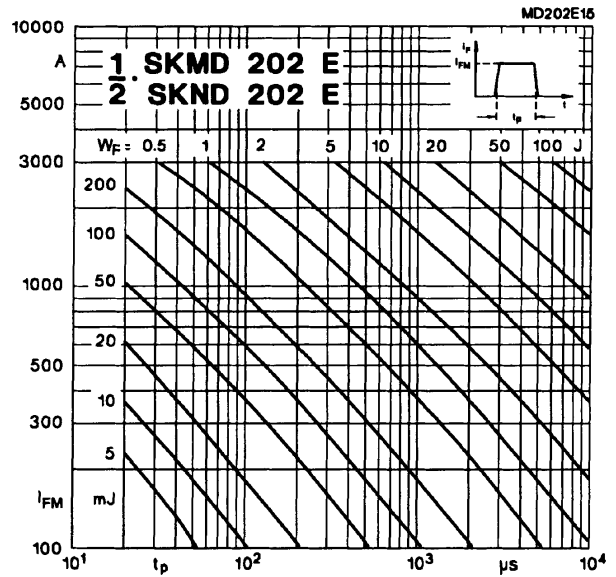


Fig. 15 b Forward energy dissipation, rectangular

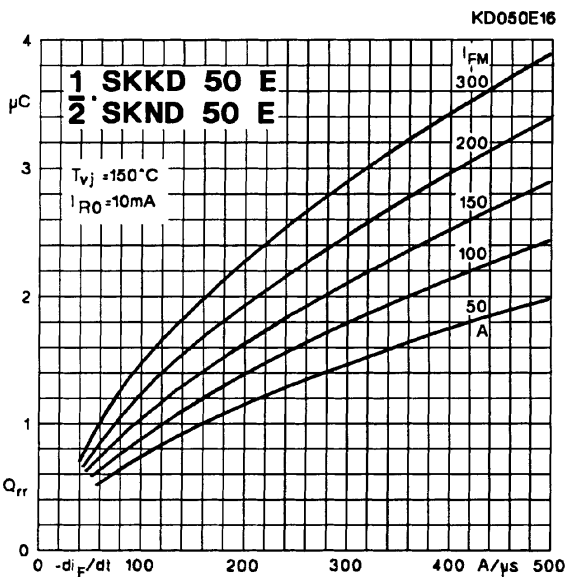


Fig. 16 a Recovered charge vs. current decrease

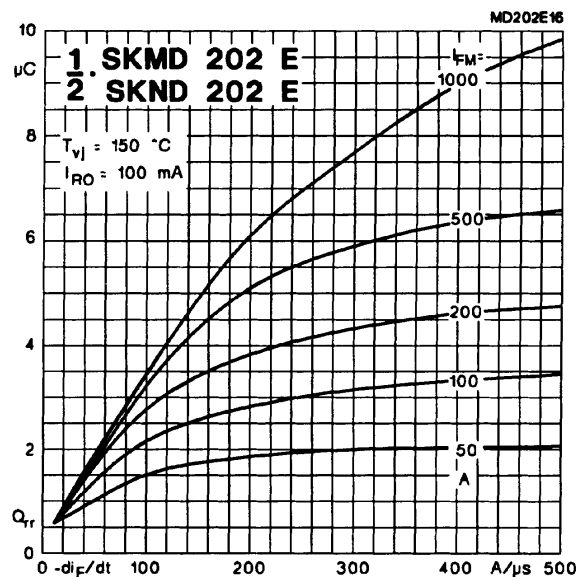


Fig. 16 b Recovered charge vs. current decrease

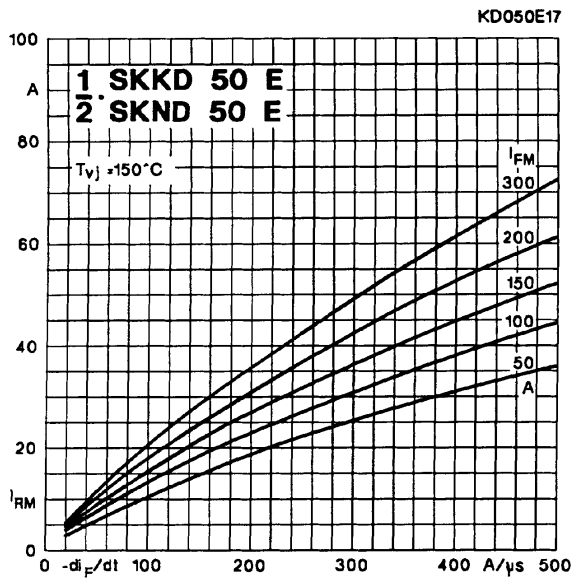


Fig. 17 a Peak recovery current vs. current decrease

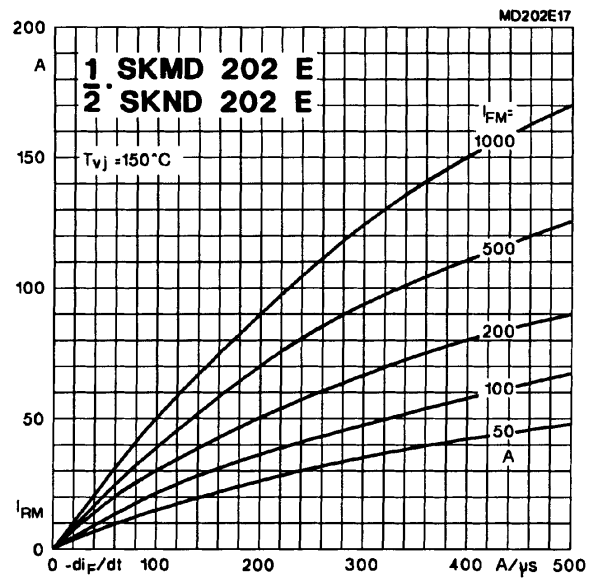


Fig. 17 b Peak recovery current vs. current decrease

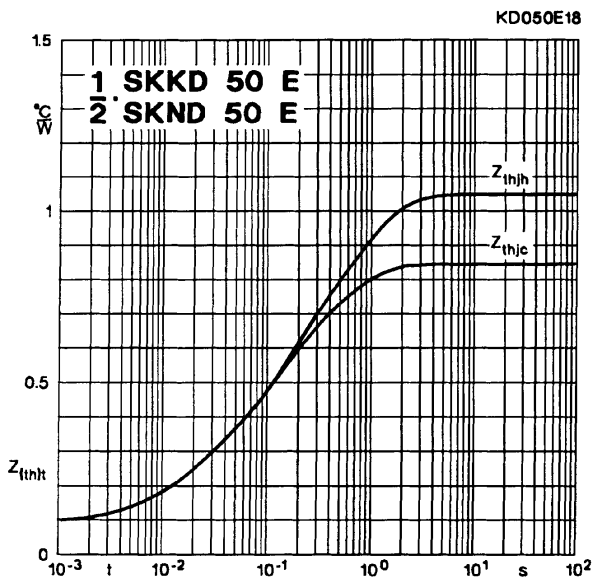


Fig. 18 a Transient thermal impedance vs. time

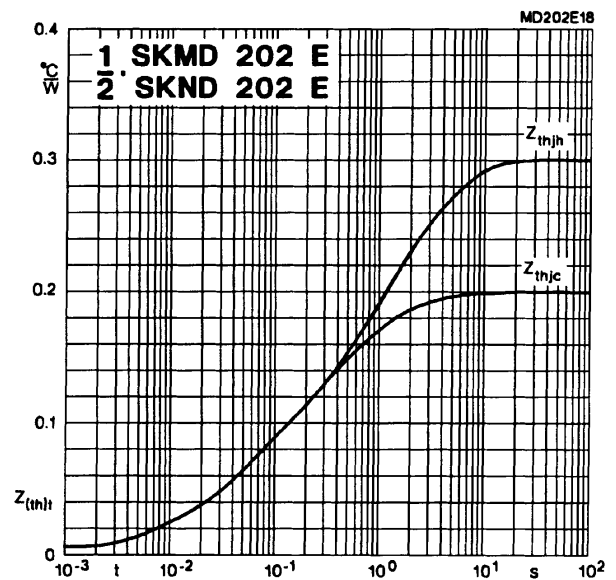


Fig. 18 b Transient thermal impedance vs. time

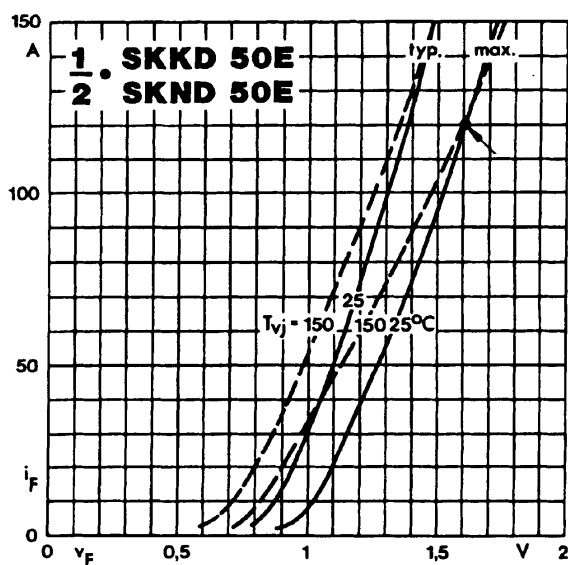


Fig. 19 a Forward characteristics

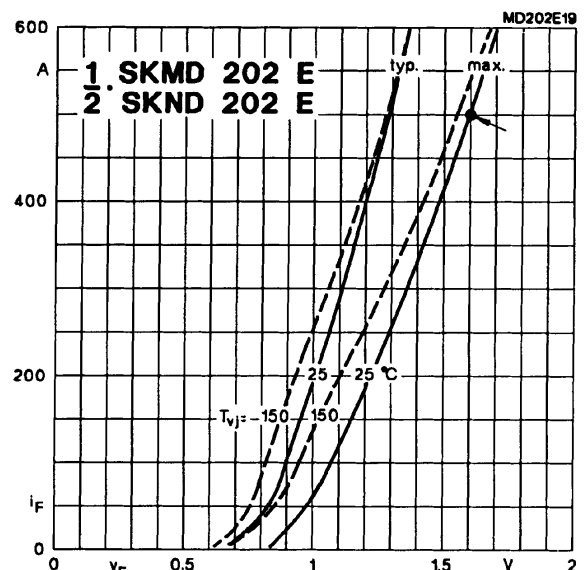


Fig. 19 b Forward characteristics

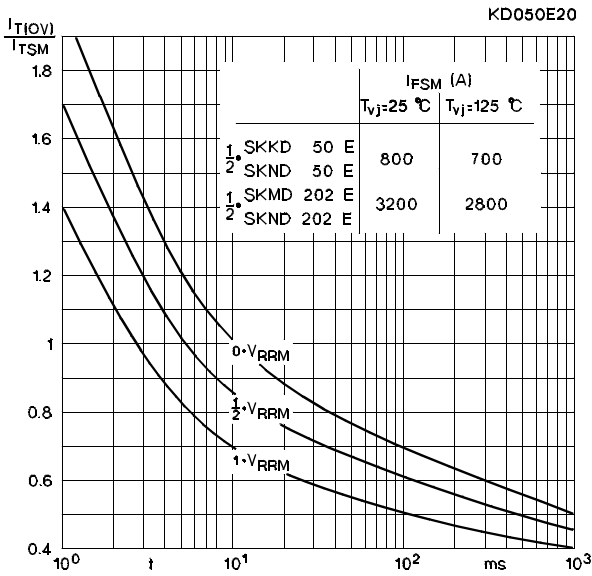


Fig. 20 Surge overload current vs. time

SKND 50 E
Case A 19
SEMIPACK® 1

IEC 192-2: A 77 A
JEDEC: TO-240 AA
UL recognized, file no. E 63 532

Dimensions in mm

SKKD 50 E
Case A 20

SKKD 90 F
Case A 20
SEMIPACK® 1

IEC 192-2: A 77 A
JEDEC: TO-240 AA
UL recognized, file no. E 63 532

Dimensions in mm