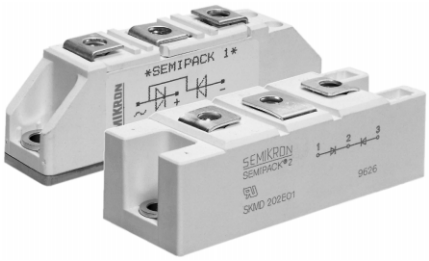
Ultrafast Epitaxial Diode Modules

SEMIPACK® 1
SKKD 50 E SKND 50 E

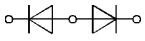
SEMIPACK® 2
SKMD 202 E SKND 202 E

V_{RSM} V_{RRM} V	I_{FRMS} (maximum value for continuous operation) 110 A		325 A	
	I_{FAV} (sin. 180; T_{case} = 85 °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 °C	48,5	207	A
I_{FSM}	T_{vj} = 25 °C T_{vj} = 150 °C	800 700	3200 2800	A A
i^2t	T_{vj} = 25 °C T_{vj} = 150 °C	3200 2450	51 000 39 000	A^2s A^2s
t_{rr}	T_{vj} = 25 °C; I_F = 1 A; – di_F/dt = 15 A/µs; V_R = 30 V; i_{rr} = 0,25 I_{RM}	60	140	ns
Q_{rr}	T_{vj} = 150 °C; I_F = 50 A; – di_F/dt = 100 A/µs; V_R = 100 V	0,7	2	µC
I_{RM}		10	16	A
I_R	T_{vj} = 25 °C; V_R = V_{RRM}	0,2	2	mA
I_R	T_{vj} = 130 °C; V_R = V_{RRM}	40	100	mA
V_F	T_{vj} = 25 °C; (I_F = . . .); max.	1,6 (120 A)	1,65 (500 A)	V
$V_{(TO)}$	T_{vj} = 150 °C	0,8	0,8	V
r_T	T_{vj} = 150 °C	6,5	1,5	mΩ
R_{thjc}	per diode/per module	0,85/0,43	0,2/0,1	°C/W
R_{thch}	per diode/per module	0,2/0,1	0,1/0,05	°C/W
T_{vj}		– 40 ... +150	– 40 ... +150	°C
T_{stg}		– 40 ... +125	– 40 ... +125	°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s 1 min	3000 2500	3000 2500	V~ V~
M_1	Case to heatsink (SI (US) units)	5 (44 lb. in.) ± 15 %	5 (44 lb. in.) ± 15 %	Nm
M_2	Busbars to terminals (SI (US) units)	3 (26 lb. in.) ± 15 %	5 (44 lb. in.) ± 15 %	Nm
w	approx.	120	250	g
Case	→ page B 2 – 20 SKKD SKMD SKND	A 20 – A 19	– A 51 A 52	



SKKD **SKMD**



SKND

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)

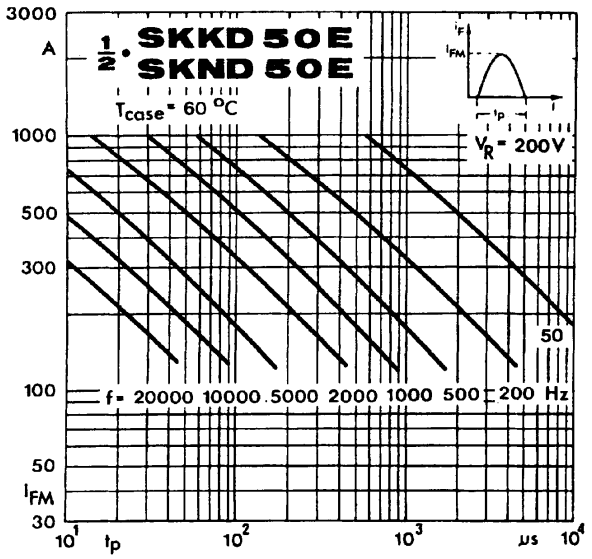


Fig. 12 a Rated sinusoidal peak forward current

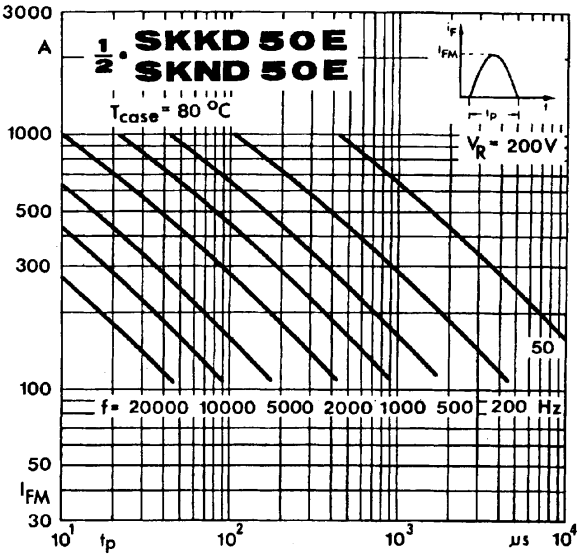


Fig. 12 b Rated sinusoidal peak forward current

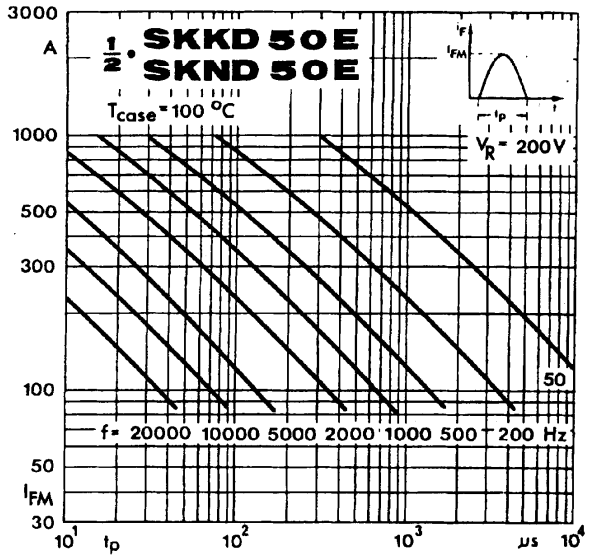


Fig. 12 c Rated sinusoidal peak forward current

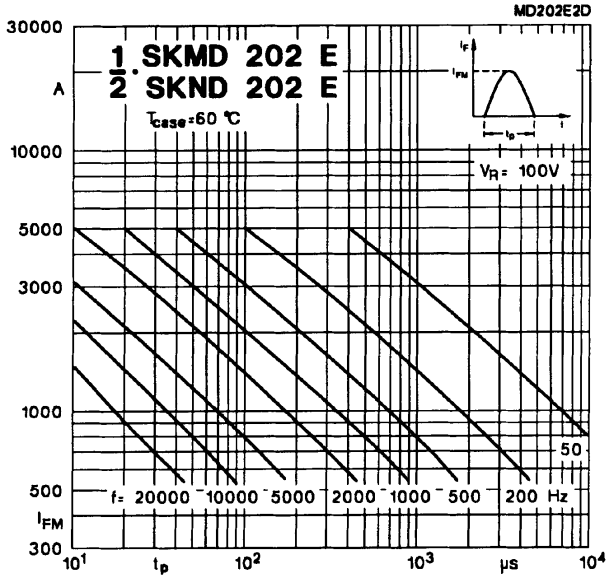


Fig. 12 d Rated sinusoidal peak forward current

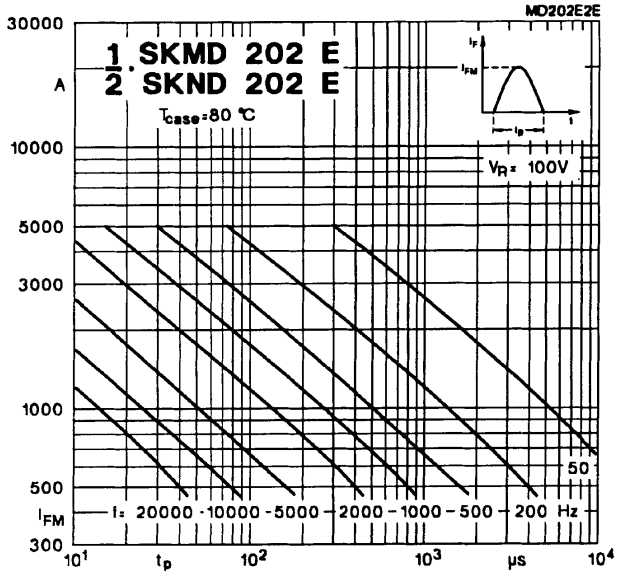


Fig. 12 e Rated sinusoidal peak forward current

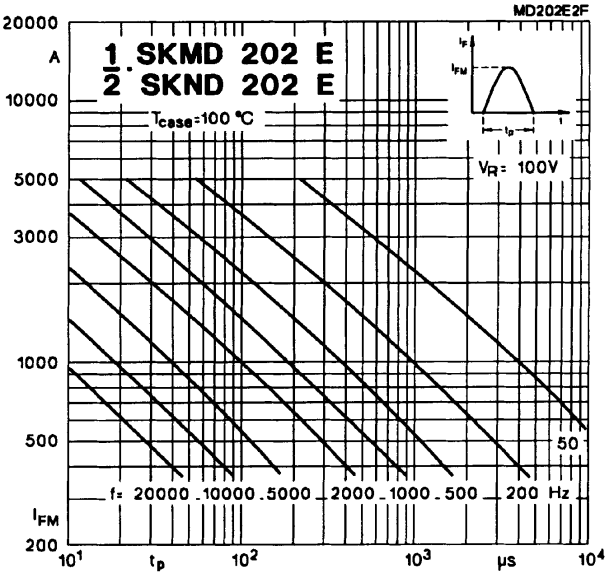


Fig. 12 f Rated sinusoidal peak forward current

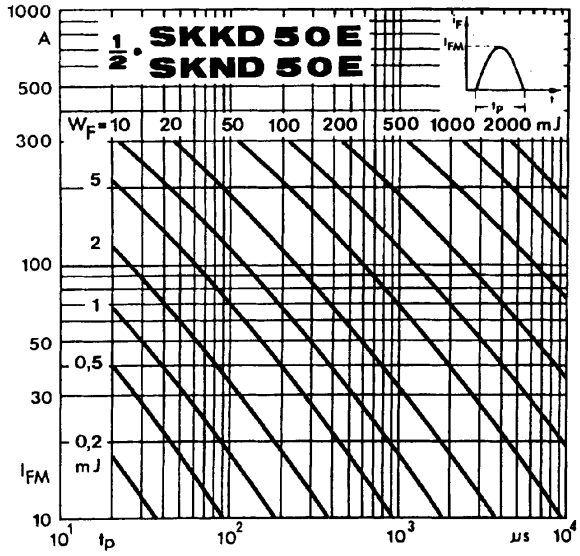


Fig. 13 a Forward energy dissipation, sinusoidal

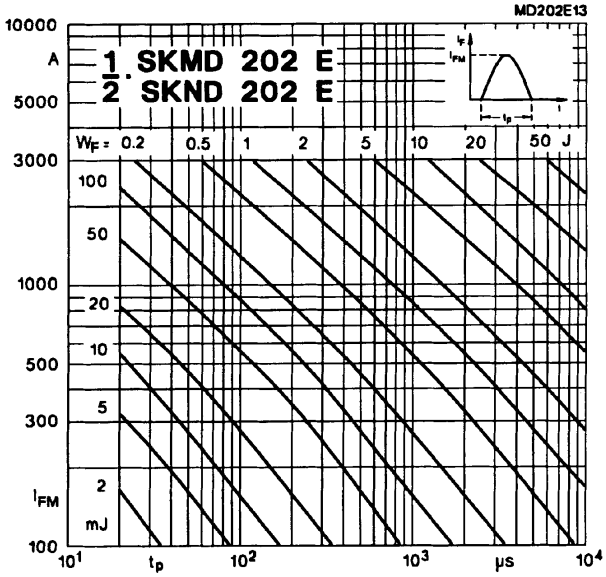


Fig. 13 b Forward energy dissipation, sinusoidal

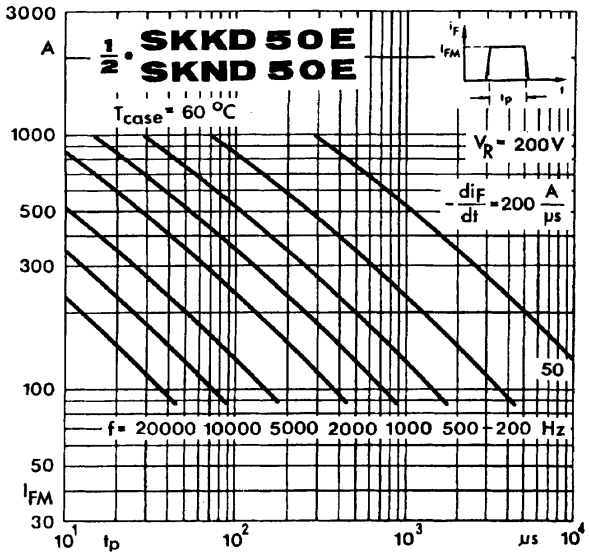


Fig. 14 a Rated rectangular peak forward current

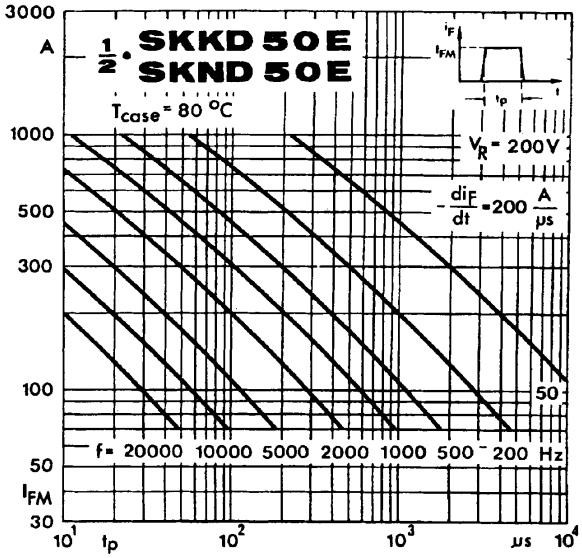


Fig. 14 b Rated rectangular peak forward current

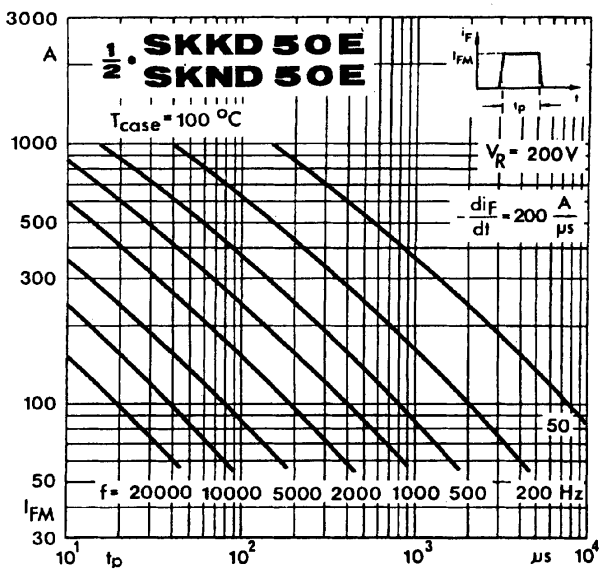


Fig. 14 c Rated rectangular peak forward current

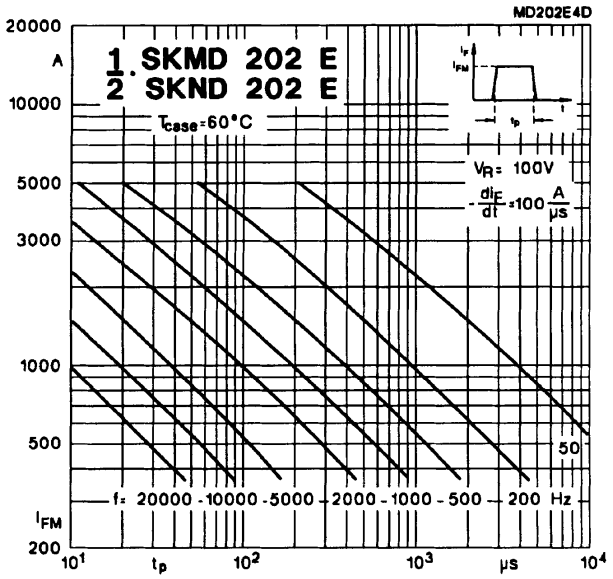


Fig. 14 d Rated rectangular peak forward current

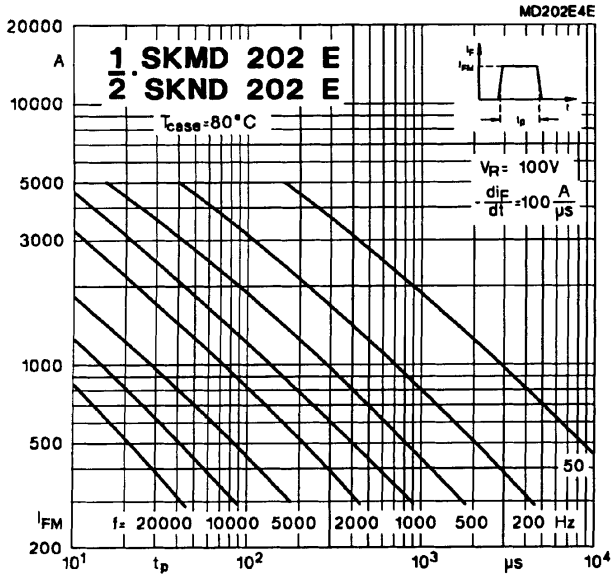


Fig. 14 e Rated rectangular peak forward current

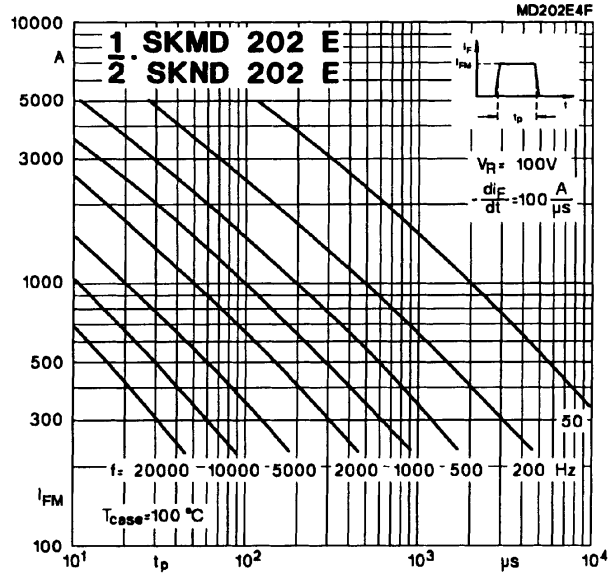


Fig. 14 f Rated rectangular peak forward current

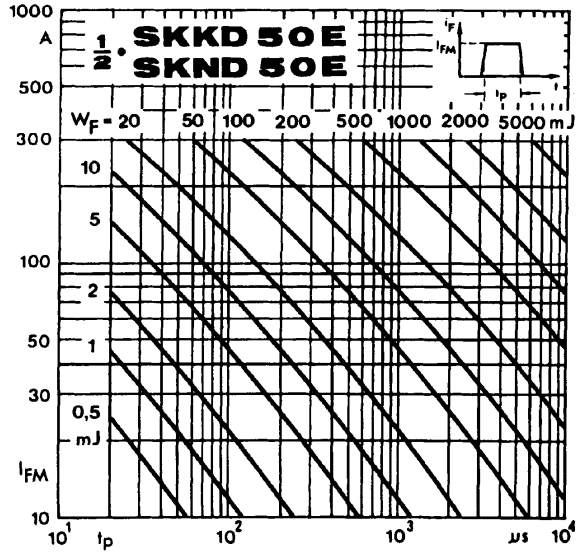


Fig. 15 a Forward energy dissipation, rectangular

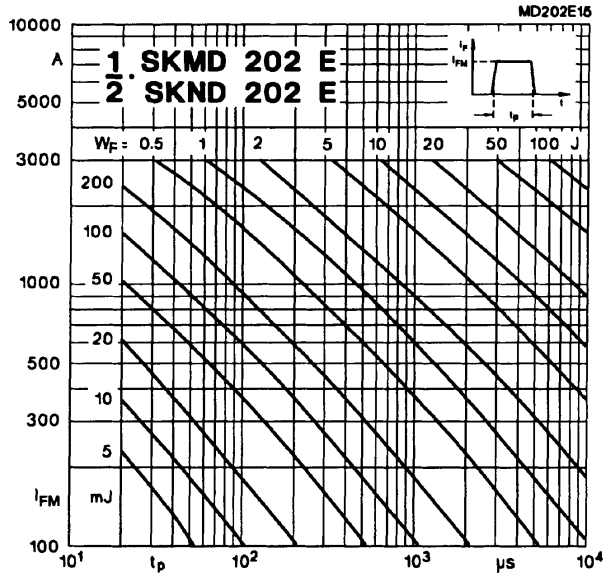


Fig. 15 b Forward energy dissipation, rectangular

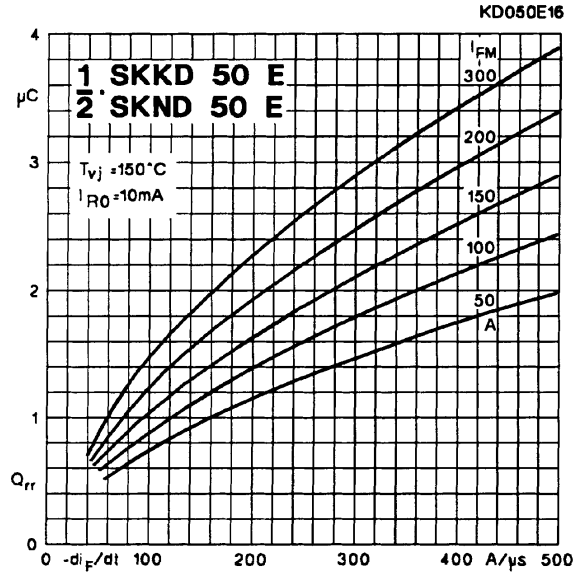


Fig. 16 a Recovered charge vs. current decrease

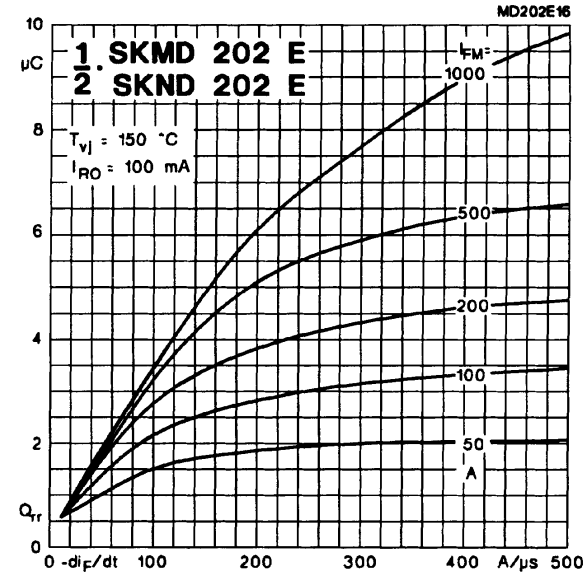


Fig. 16 b Recovered charge vs. current decrease

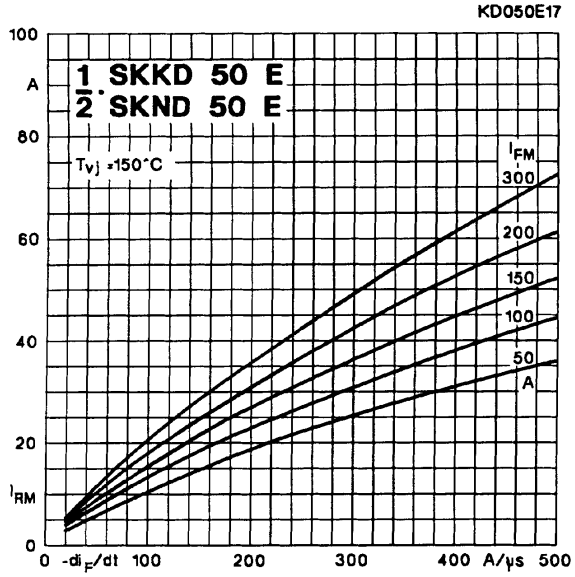


Fig. 17 a Peak recovery current vs. current decrease

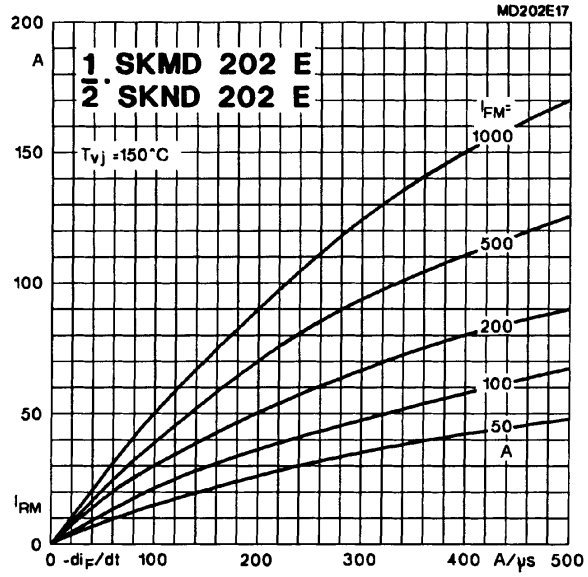


Fig. 17 b Peak recovery current vs. current decrease

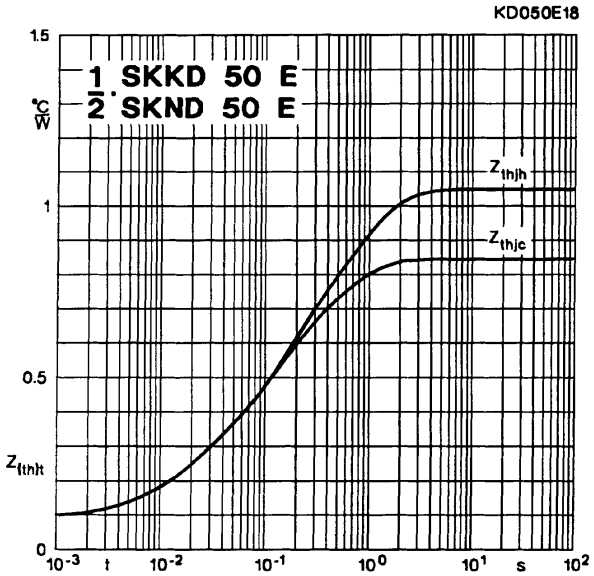


Fig. 18 a Transient thermal impedance vs. time

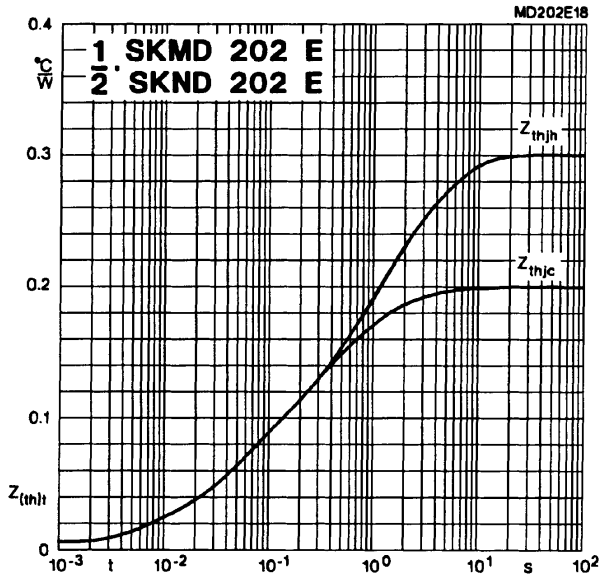


Fig. 18 b Transient thermal impedance vs. time

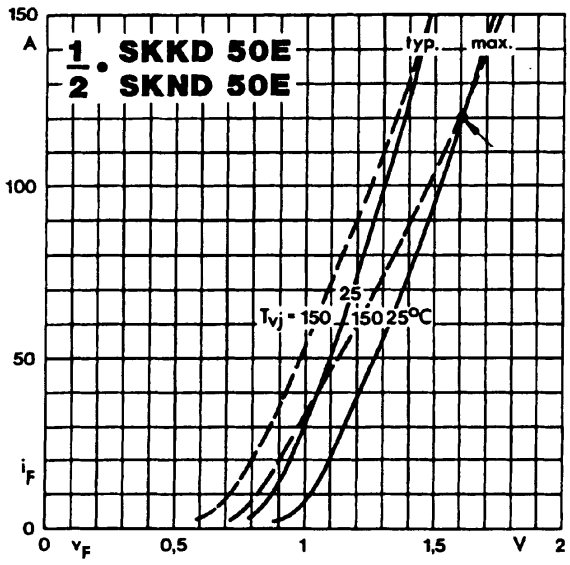


Fig. 19 a Forward characteristics

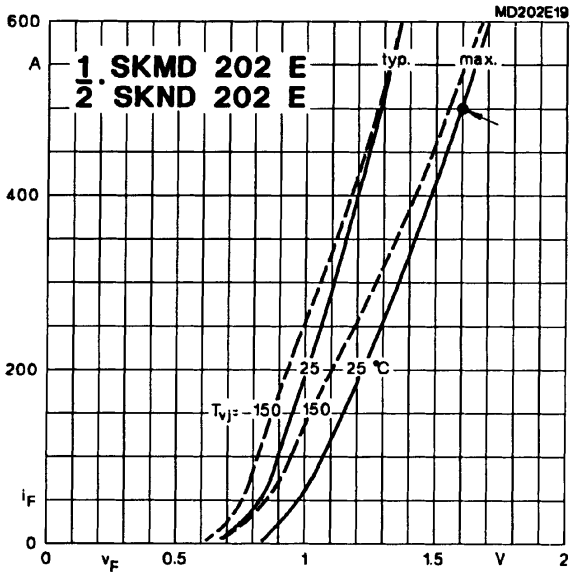


Fig. 19 b Forward characteristics

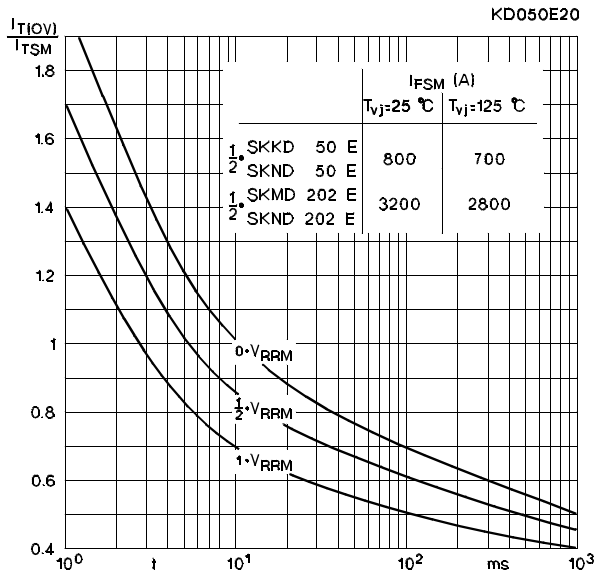
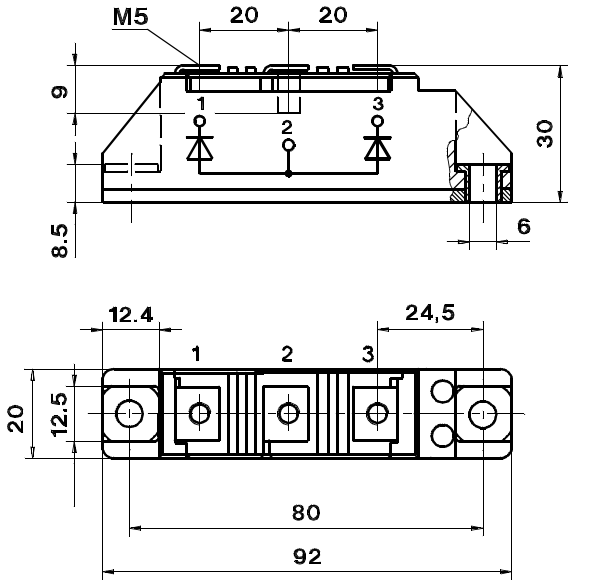


Fig. 20 Surge overload current vs. time

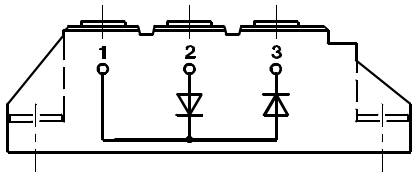
SKND 50 E IEC 192-2: A 77 A
Case A 19 JEDEC: TO-240 AA
SEMIPACK® 1 UL recognized, file no. E 63 532



Dimensions in mm

SKKD 50 E

Case A 20



SKKD 90 F IEC 192-2: A 77 A
Case A 20 JEDEC: TO-240 AA
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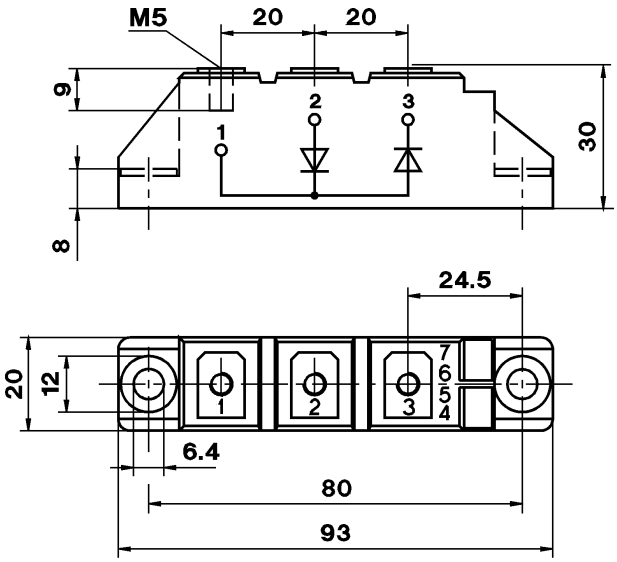

Dimensions in mm

