

SEMIPACK[®] 4 Fast Diode Modules

SKKE 400 F



Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Precious metal pressure contacts for high reliability
- Small recovered charge
- Soft recovery
- Up to 1800 V reverse voltage
- UL recognized, file no. E 63 532

Typical Applications

- Inverse diodes for GTO and fast thyristors
- Inverters and choppers
- AC motor control
- Inductive heating
- Uninterruptible power supplies (UPS)

V_{RSM} V_{RRM}	I_{FRMS} (maximum value for continuous operation) 660 A
V	I_{FAV} (sin. 180; $T_{case} = 85\text{ °C}$; 50 Hz) 420 A
800	SKKE 400 F 08
1200	SKKE 400 F 12
1400	SKKE 400 F 14
1600	SKKE 400 F 16
1800	SKKE 400 F 18

Symbol	Conditions	SKKE 400 F
I_{FAV}	sin. 180; $T_{case} = 89\text{ °C}$; $f = 2000\text{ Hz}$	400 A
	sin. 180; $R_{thha} = 0,05\text{ °C/W}$; $f = 2000\text{ Hz}$; $T_{amb} = 45\text{ °C}$	400 A
I_{FSM}	$T_{vj} = 25\text{ °C}$; 10 ms	12 000 A
	$T_{vj} = 150\text{ °C}$; 10 ms	11 000 A
i^2t	$T_{vj} = 25\text{ °C}$; 8,3 ... 10 ms	$720\,000\text{ A}^2\text{ s}$
	$T_{vj} = 150\text{ °C}$; 8,3 ... 10 ms	$605\,000\text{ A}^2\text{ s}$
Q_{rr} I_{RM}	$\left\{ \begin{array}{l} T_{vj} = 150\text{ °C}; I_{FM} = 400\text{ A}; \\ -di_F/dt = 100\text{ A}/\mu\text{s}; V_R = 100\text{ V} \end{array} \right.$	200 μC
		160 A
I_{RD}	$T_{vj} = 25\text{ °C}$; $V_{RD} = V_{RRM}$	4 mA
	$T_{vj} = 150\text{ °C}$; $V_{RD} = V_{RRM}$	30 mA
V_F	$T_{vj} = 25\text{ °C}$; $I_{FM} = 1800\text{ A}$; max.	2,05 V
$V_{(TO)}$	$T_{vj} = 150\text{ °C}$	0,95 V
r_T	$T_{vj} = 150\text{ °C}$	0,65 m Ω
R_{thjc}	sin. 180	0,095 °C/W
R_{thch}		0,02 °C/W
T_{vj}		- 40 ... +150 °C
T_{stg}		- 40 ... +130 °C
V_{isol}	a. c. 50 Hz; r.m.s; 1 s/1 min.	3600/3000 V~
M_1 M_2	$\left. \begin{array}{l} \text{Case to heatsink} \\ \text{Busbars to terminals} \end{array} \right\} \text{SI units/US units}$	5 Nm/44 lb. in. $\pm 15\%^{1)}$
		17 Nm/150 lb. in. $\pm 15\%^{2)}$
a		$5 \cdot 9,81\text{ m/s}^2$
w	approx.	950 g
Case		A 42

1) See the assembly instructions

2) The screws must be lubricated

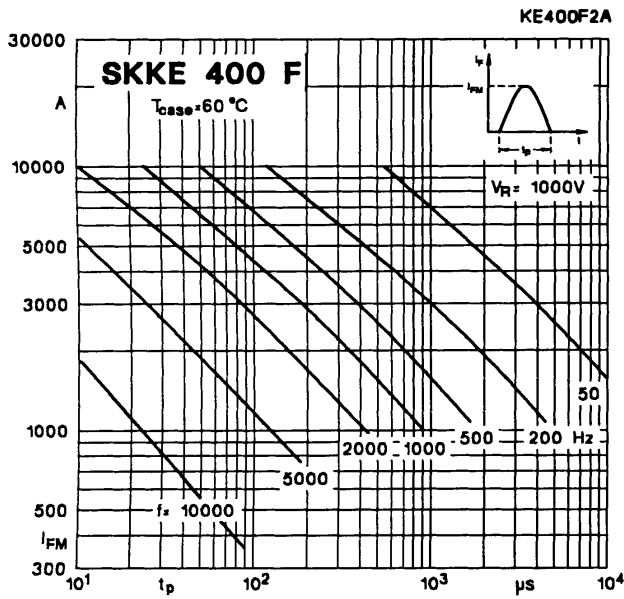


Fig. 12 a Rated sinusoidal peak forward current

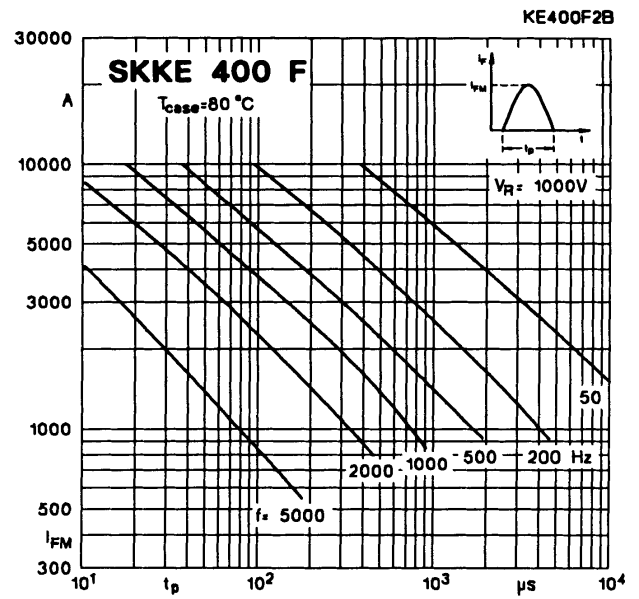


Fig. 12 b Rated sinusoidal peak forward current

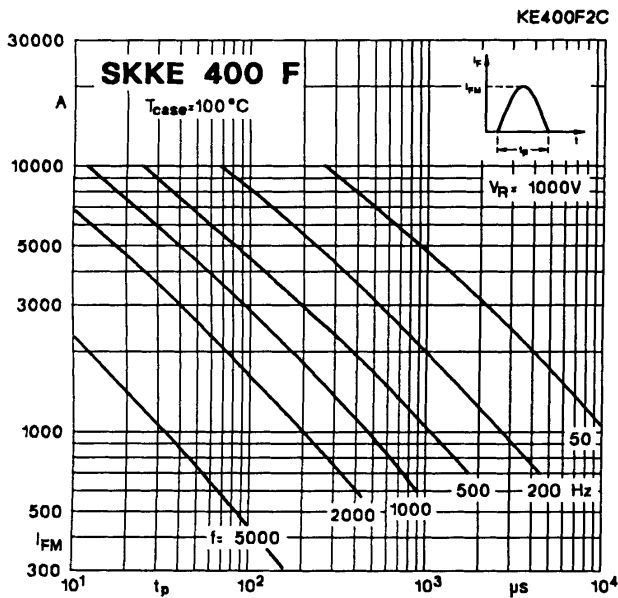


Fig. 12 c Rated sinusoidal peak forward current

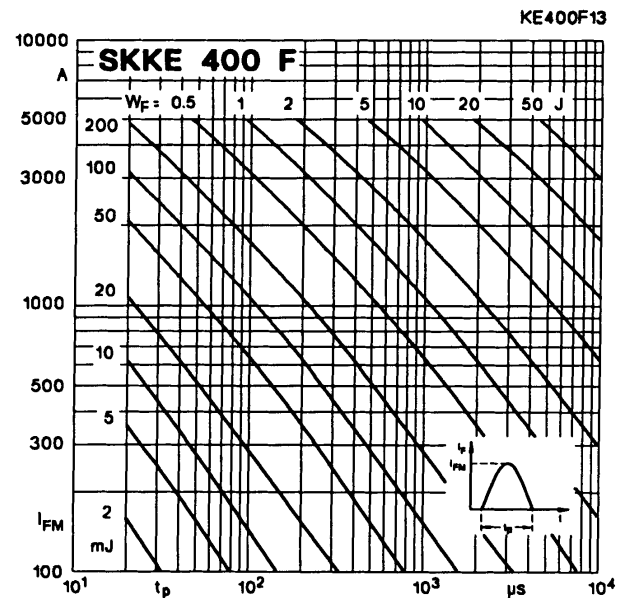


Fig. 13 Forward energy dissipation, sinusoidal

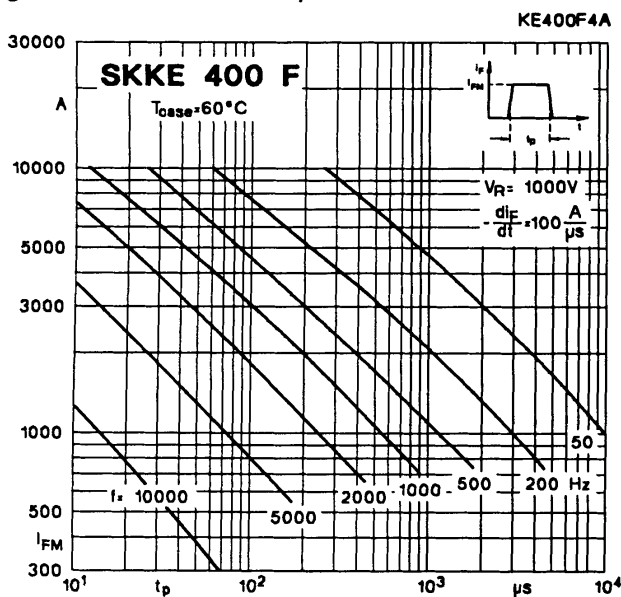


Fig. 14 a Rated rectangular peak forward current

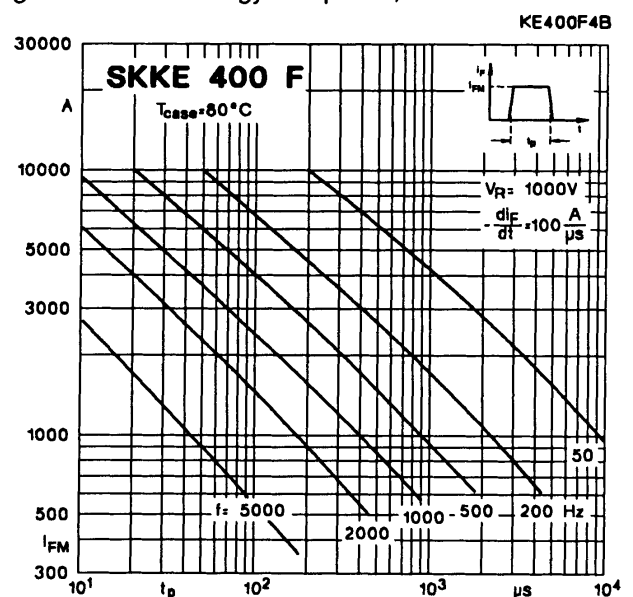


Fig. 14 b Rated rectangular peak forward current

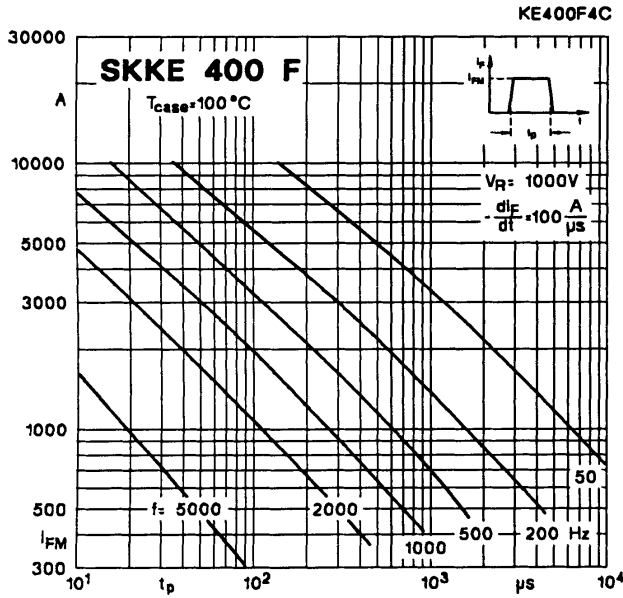


Fig. 14 c Rated rectangular peak forward current

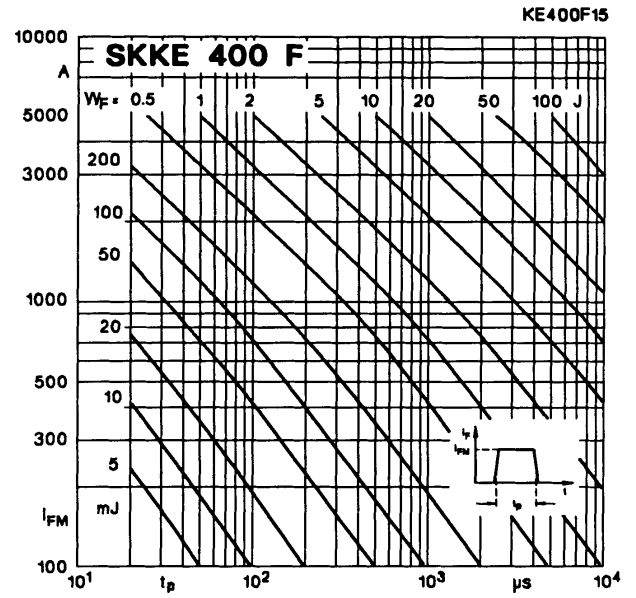


Fig. 15 Forward energy dissipation, rectangular

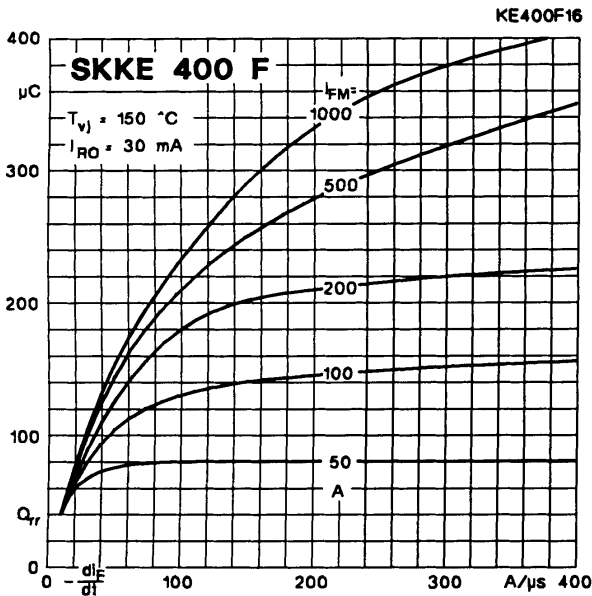


Fig. 16 Recovered charge vs. current decrease

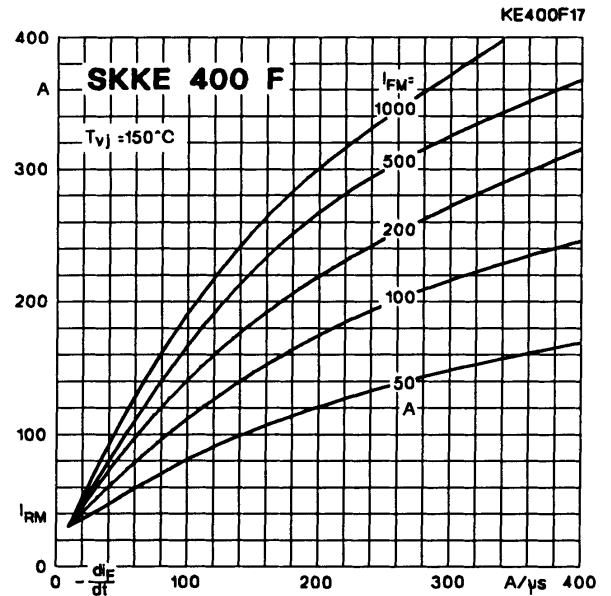


Fig. 17 Peak recovery current vs. current decrease

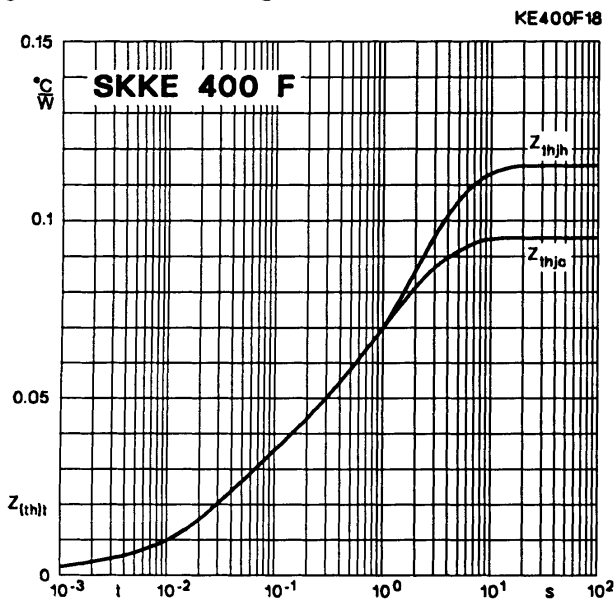


Fig. 18 Transient thermal impedance vs. time

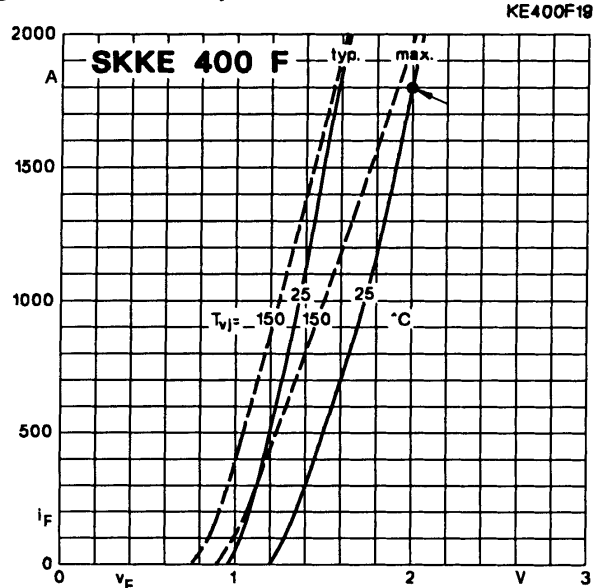


Fig. 19 Forward characteristics

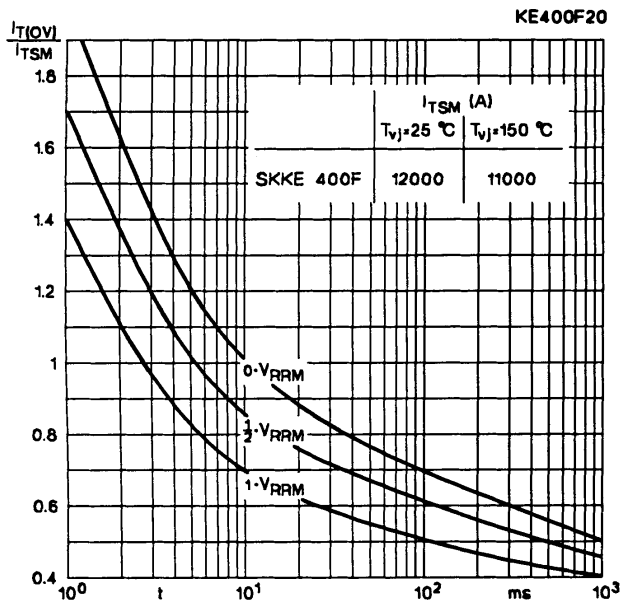
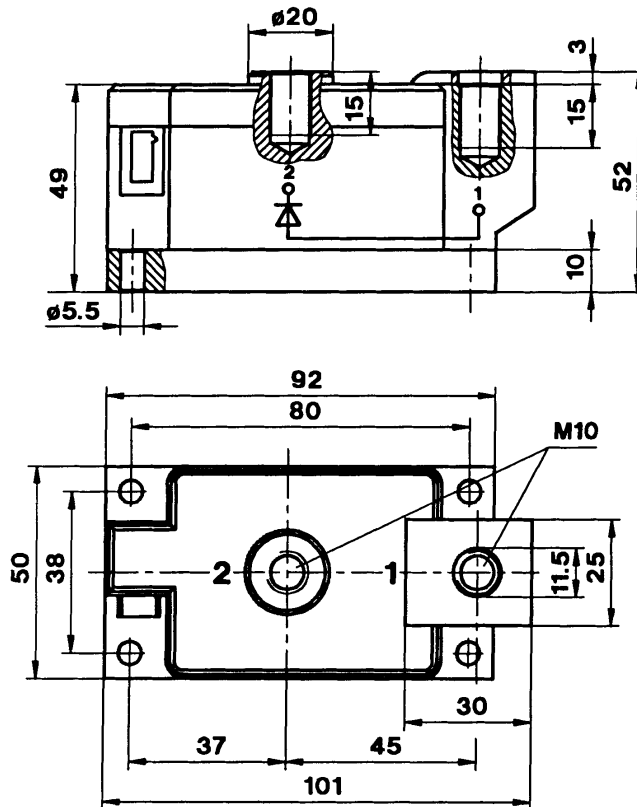


Fig. 20 Surge overload current vs. time

SKKE 400 F

Case A 42



Dimensions in mm