

## SEMIPACK<sup>®</sup> 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	<b>SKKE 400 F 08</b>
1200	<b>SKKE 400 F 12</b>
1400	<b>SKKE 400 F 14</b>
1600	<b>SKKE 400 F 16</b>
1800	<b>SKKE 400 F 18</b>

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 A <sup>2</sup> s
	$T_{vj} = 150\text{ °C}$ ; 8,3 ... 10 ms	605 000 A <sup>2</sup> s
$Q_{rr}$ $I_{RM}$	$\left\{ \begin{array}{l} T_{vj} = 150\text{ °C}; I_{FM} = 400\text{ A}; \\ - diF/dt = 100\text{ A}/\mu\text{s}; V_R = 100\text{ V} \end{array} \right.$	200 $\mu\text{C}$
		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 $\Omega$
$R_{thjc}$	sin. 180	0,095 $\text{°C/W}$
$R_{thch}$		0,02 $\text{°C/W}$
$T_{vj}$		- 40 ... +150 $\text{°C}$
$T_{stg}$		- 40 ... +130 $\text{°C}$
$V_{isol}$	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 · 9,81 m/s <sup>2</sup>
w	approx.	950 g
Case		A 42

1) See the assembly instructions

2) The screws must be lubricated

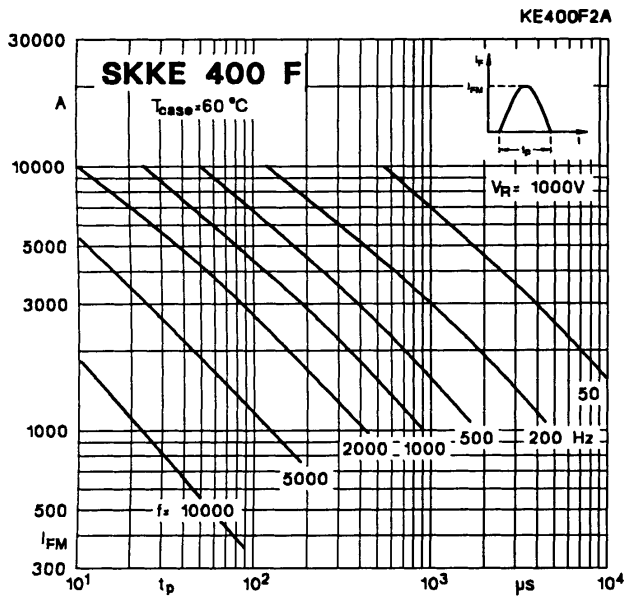


Fig. 12 a Rated sinusoidal peak forward current

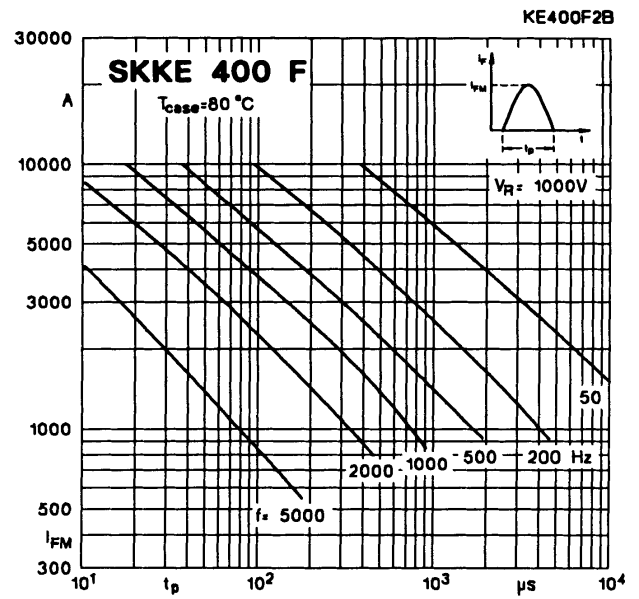


Fig. 12 b Rated sinusoidal peak forward current

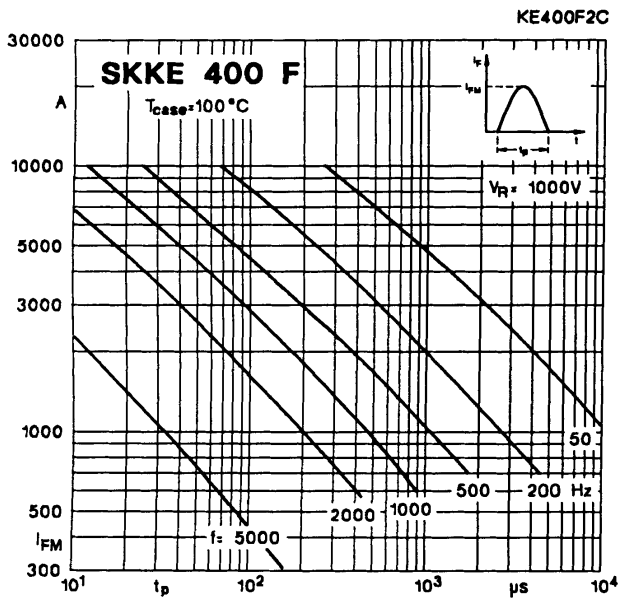


Fig. 12 c Rated sinusoidal peak forward current

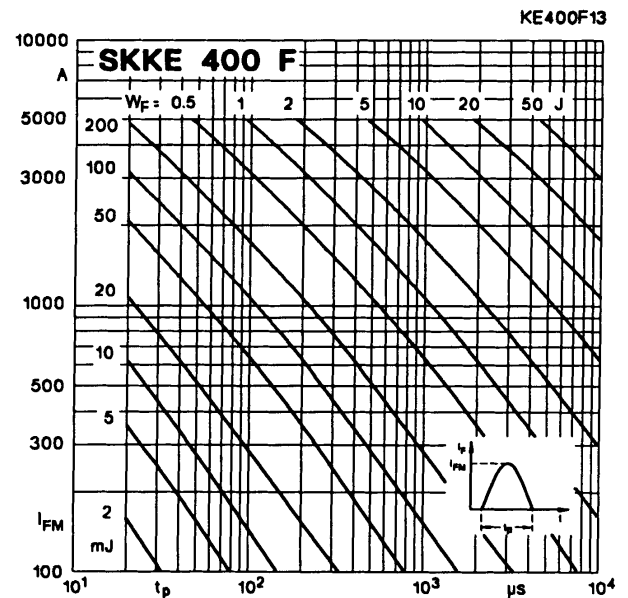


Fig. 13 Forward energy dissipation, sinusoidal

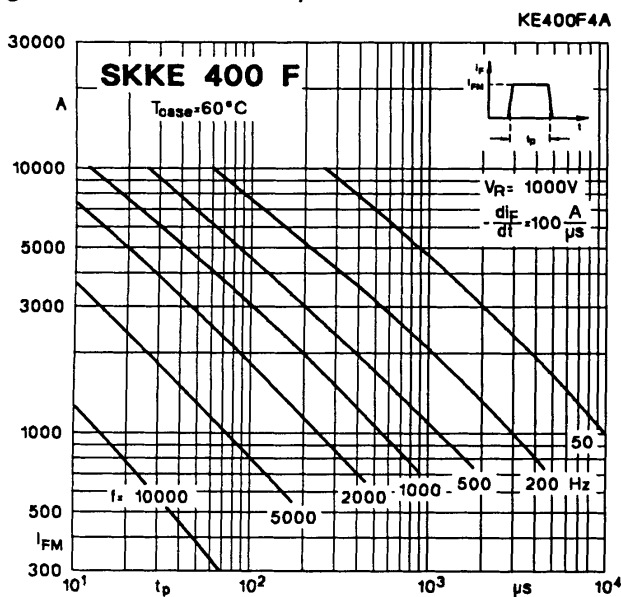


Fig. 14 a Rated rectangular peak forward current

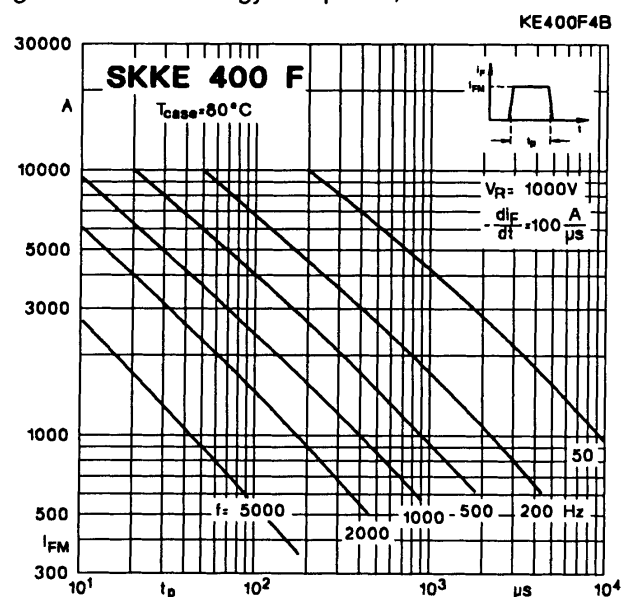


Fig. 14 b Rated rectangular peak forward current

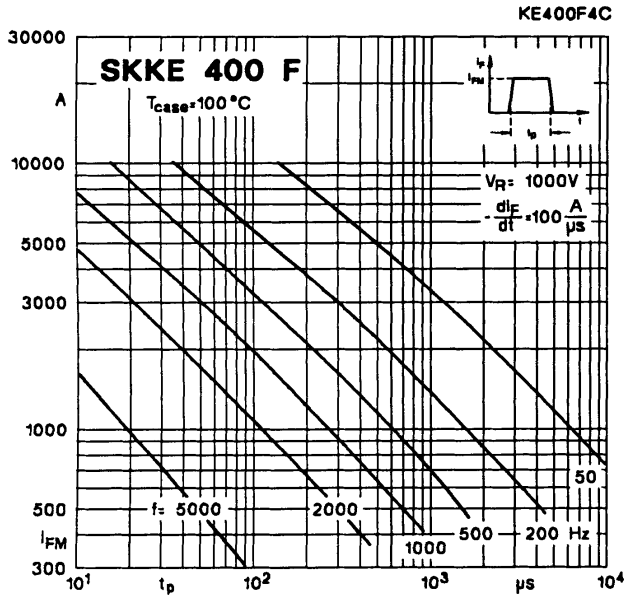


Fig. 14 c Rated rectangular peak forward current

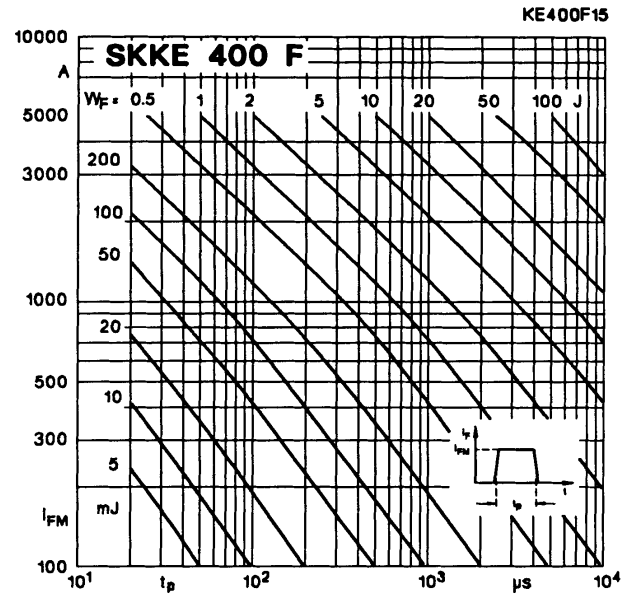


Fig. 15 Forward energy dissipation, rectangular

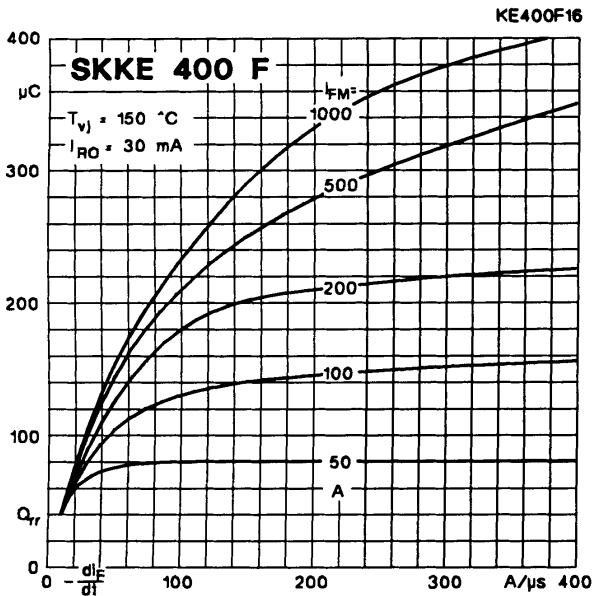


Fig. 16 Recovered charge vs. current decrease

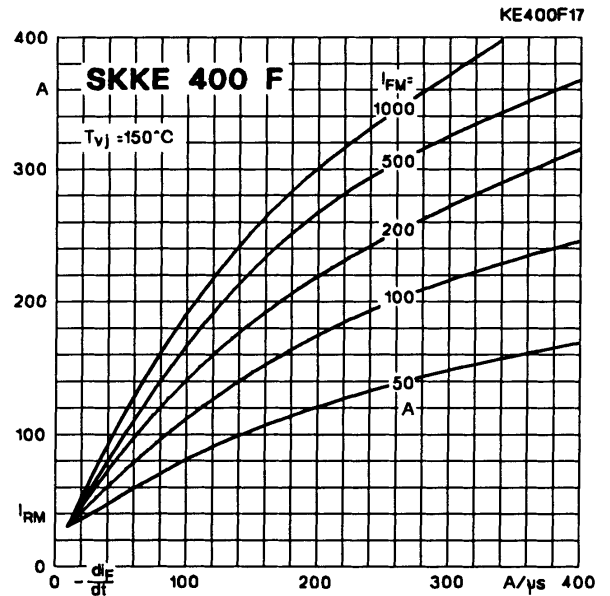


Fig. 17 Peak recovery current vs. current decrease

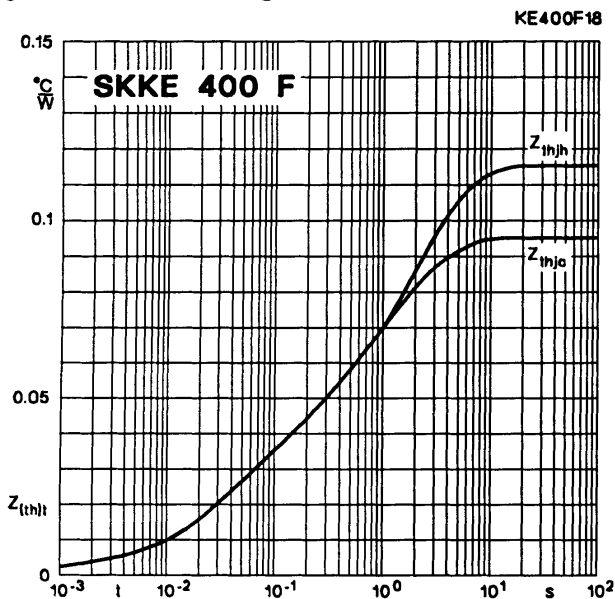


Fig. 18 Transient thermal impedance vs. time

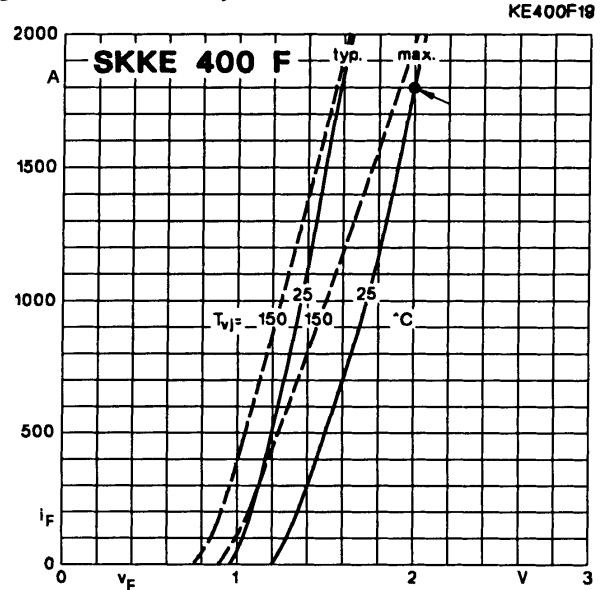


Fig. 19 Forward characteristics

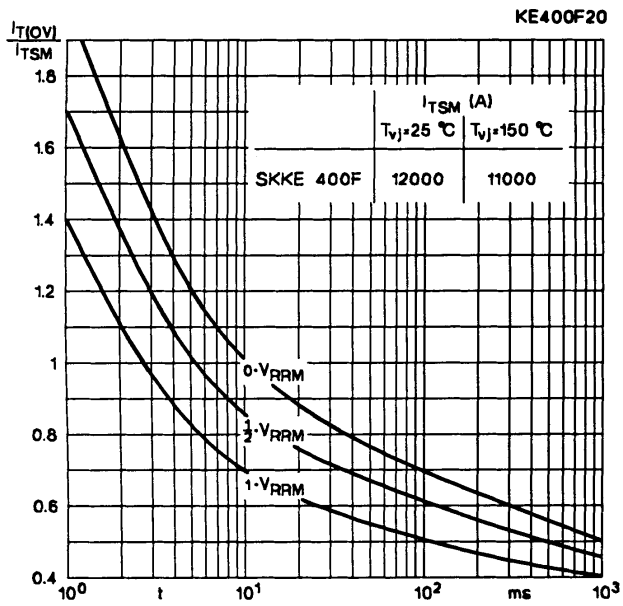
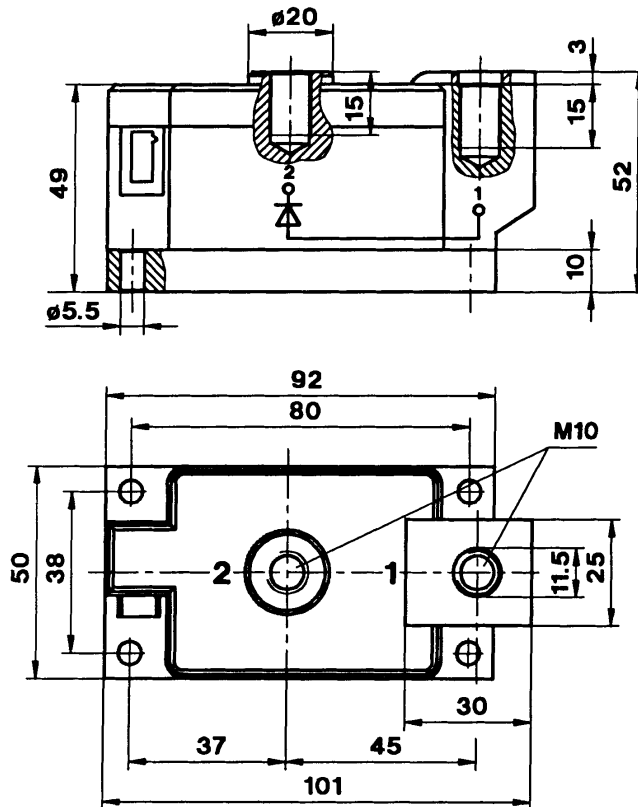


Fig. 20 Surge overload current vs. time

**SKKE 400 F**

Case A 42



Dimensions in mm