

SKKE 600F



SEMIPACK®

Fast Diode Modules

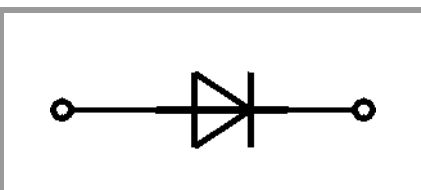
SKKE 600F

Features

- CAL (controlled axial lifetime) technology, patent No. 43 10 44
- Heat transfer through aluminium oxide DCB ceramic isolated metal baseplate
- Small recovered charge
- Fast & soft recovery CAL diodes
- UL recognized, file no. E 63 532

Typical Applications*

- Freewheeling diodes for IGBT
- Freewheeling diode for inductive loads
- Brake choppers
- Inverters and DC choppers
- AC motor control
- Boost choppers
- up to 20 kHz



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Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
Diode				
I_{FAV}	sin. 180 $T_j = 150\text{ °C}$	$T_c = 85\text{ °C}$	360	A
		$T_c = 100\text{ °C}$	305	A
I_{FSM}	10 ms	$T_j = 25\text{ °C}$	7000	A
		$T_j = 150\text{ °C}$	5800	A
i^2t	10 ms	$T_j = 25\text{ °C}$	245000	A ² s
		$T_j = 150\text{ °C}$	168200	A ² s
V_{RSM}			1200	V
V_{RRM}			1200	V
T_j			-40 ... 150	°C
Module				
T_{stg}			-40 ... 125	°C
V_{isol}	a.c.; 50 Hz; r.m.s.	1 min	4000	V
		1 s	4800	V

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
Diode						
V_F	$T_j = 25\text{ °C}$, $I_F = 600\text{ A}$,				2.5	V
$V_{(TO)}$	$T_j = 150\text{ °C}$,				1.2	V
r_T	$T_j = 150\text{ °C}$,				1.9	mΩ
I_R	$V_R = V_{RRM}$	$T_j = 25\text{ °C}$			4	mA
		$T_j = 150\text{ °C}$			30	mA
Q_{rr}	$T_j = 150\text{ °C}$			80		μC
I_{RRM}	$I_F = 600\text{ A}$ $di/dt_{off} = 4000\text{ A}/\mu\text{s}$ $V_R = 600\text{ V}$	$T_j = 150\text{ °C}$		280		A
t_{rr}		$T_j = 150\text{ °C}$		0.78		μs
E_{rr}		$T_j = 150\text{ °C}$		21		mJ
$R_{th(j-c)}$	cont.		per chip		0.062	K/W
			per module			K/W
Module						
$R_{th(c-s)}$	chip		0.038			K/W
	module					K/W
M_s			3		5	Nm
M_t			2.5		5	Nm
a					5 * 9,81	m/s ²
w			330			g

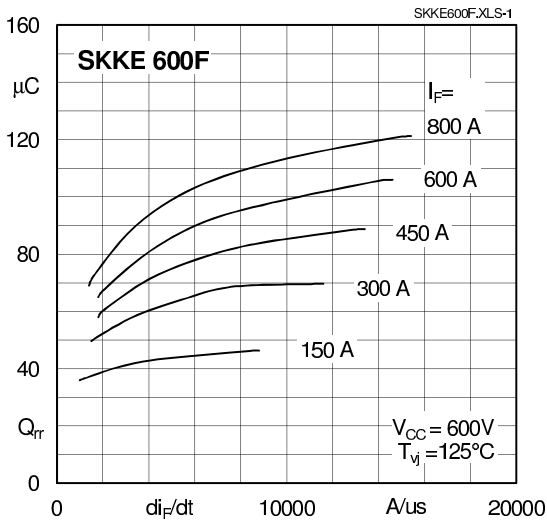


Fig. 1: Typ. recovery charge vs. current decrease

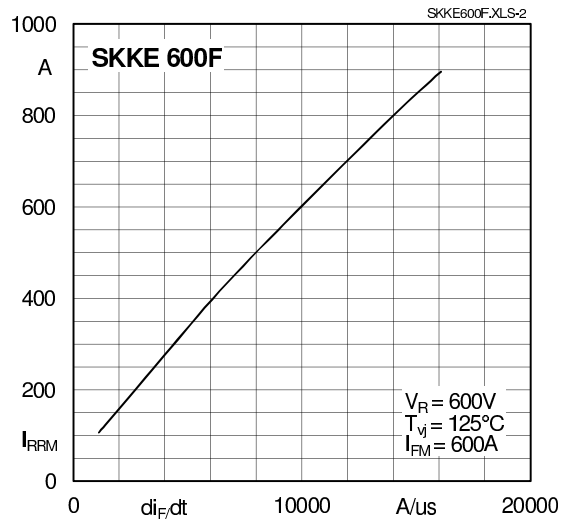


Fig. 2: Peak recovery current vs. current decrease

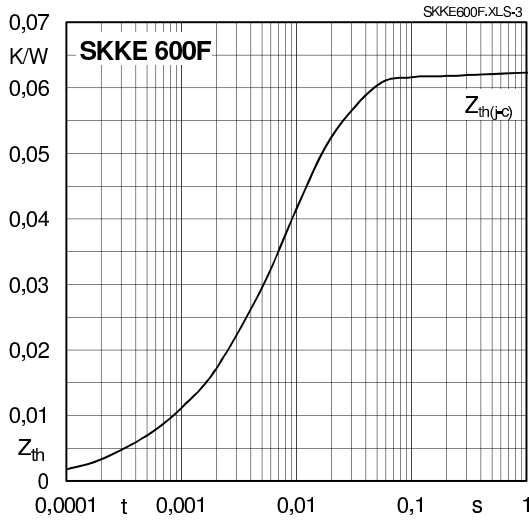


Fig. 3: Transient thermal impedance vs. time

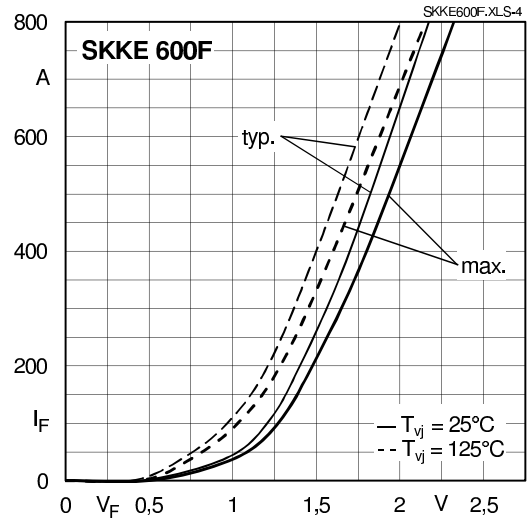


Fig. 4: Forward characteristics

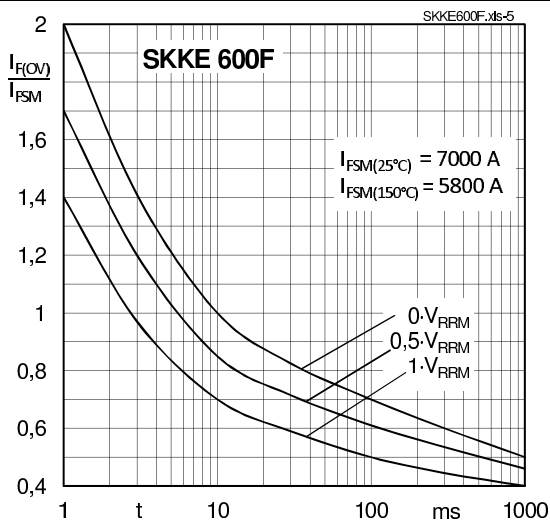


Fig. 5: Surge overload current vs. time

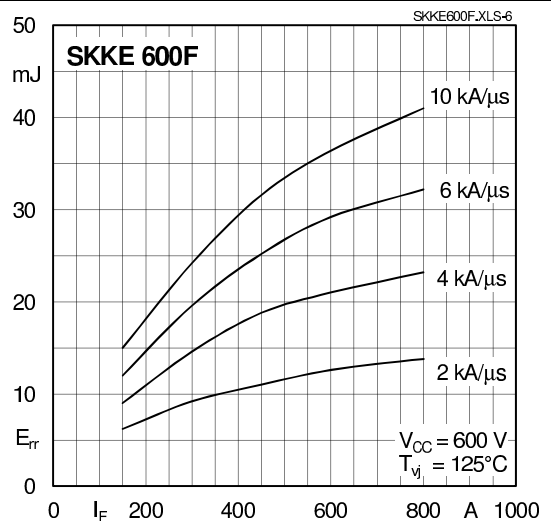
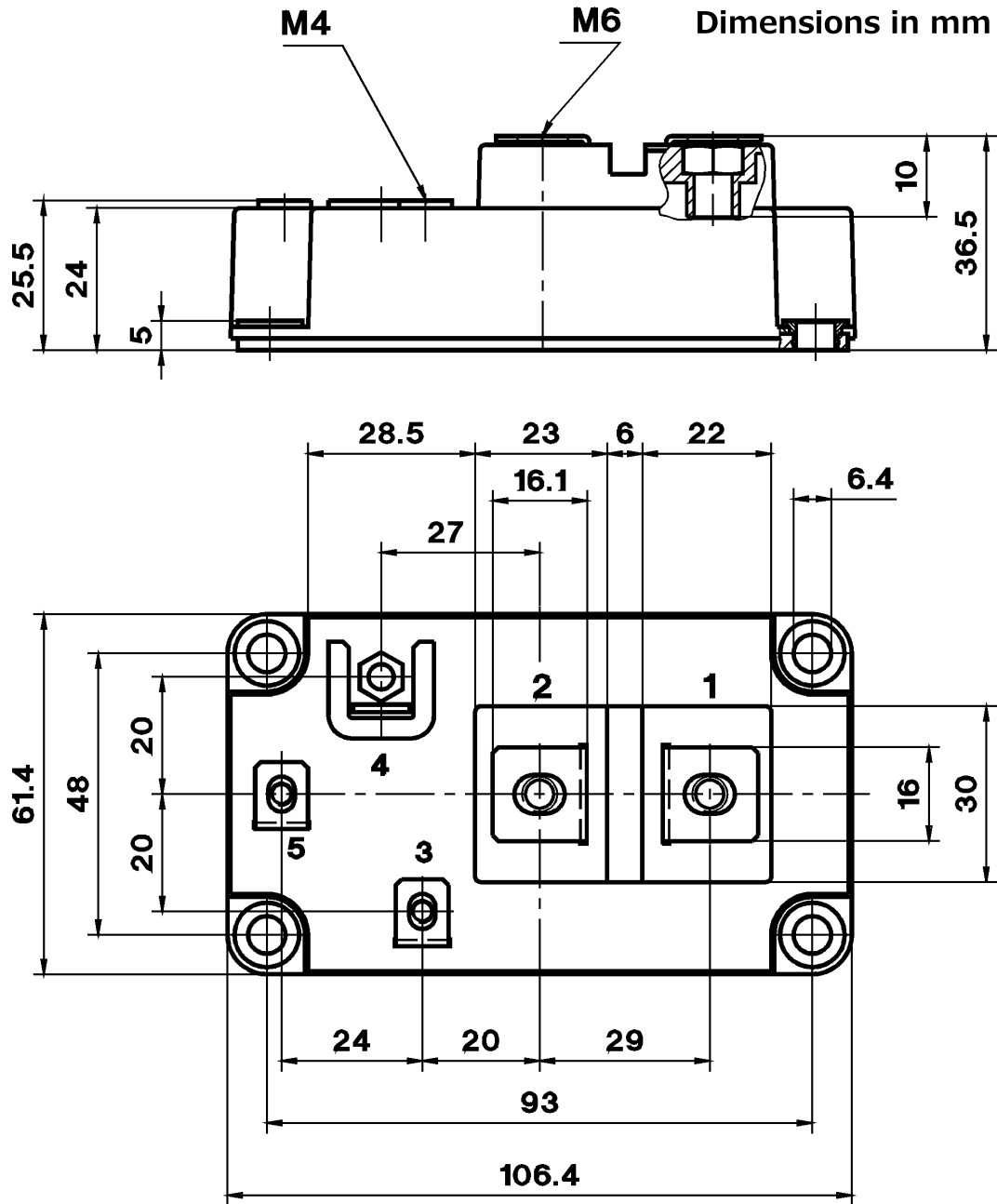


Fig. 6: Typ. turn-off energy dissipation per pulse



General tolerance ± 0.5 mm

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This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX

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