



SEMITRANS® 2

Fast Diode Modules

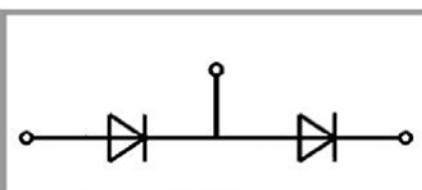
SKKD400F06

Features*

- Soft recovery
- Short recovery times
- Low switching losses
- Heat transfer through aluminum oxide ceramic insulated metal baseplate
- Hard soldered joints for high reliability
- UL recognized, file no. E63532

Typical Applications

- Self-commutated inverters
- DC choppers
- AC motor speed control
- Inductive heating
- Uninterruptible power supplies
- Electronic welders



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Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
Diode				
V _{RRM}	T _j = 25 °C		600	V
I _F	T _j = 175 °C	T _c = 85 °C	402	A
		T _c = 100 °C	355	A
I _{FRM}			800	A
I _{FSM}	10 ms	T _j = 25 °C	3000	A
		T _j = 150 °C	2700	A
i ² t	10 ms	T _j = 25 °C	45000	A²s
		T _j = 150 °C	36450	A²s
T _j			-40 ... 175	°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	I _F = 400 A	T _J = 25 °C	1.34	1.55	V
	chiplevel	T _J = 150 °C	1.26	1.50	V
V _{F0}	chiplevel	T _J = 25 °C	0.90	1.00	V
		T _J = 150 °C	0.70	0.78	V
r _F	chiplevel	T _J = 25 °C	1.10	1.37	mΩ
		T _J = 150 °C	1.40	1.80	mΩ
I _R	V _R = V _{RRM}	T _J = 25 °C	1		mA
		T _J = 150 °C	50		mA
Q _{rr}	I _F = 400 A di/dtoff = 2000 A/μs V _R = 300 V	T _J = 150 °C	35		μC
I _{RRM}		T _J = 150 °C	190		A
t _{rr}		T _J = 150 °C	235		ns
E _{rr}		T _J = 150 °C	7.0		mJ
R _{th(j-c)}	per diode		0.15		K/W
	per module		0.075		K/W
R _{th(c-s)}	per diode (λ _{grease} =0.81 W/(m*K))		0.065		K/W
	per module (λ _{grease} =0.81 W/(m*K))		0.035		K/W
Module					
L _{CE}			30		nH
R _{CC'+EE'}		T _C = 25 °C	0.40		mΩ
		T _C = 125 °C	0.55		mΩ
M _s	to heatsink M6		3.0	5.0	Nm
M _t	to terminals M5		2.5	5.0	Nm
a			5 * 9.81		m/s ²
w			165		g

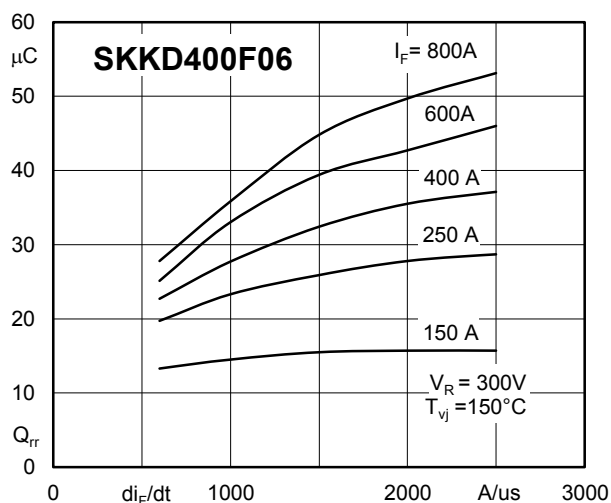


Fig. 1: Typ. recovery charge vs. current decrease

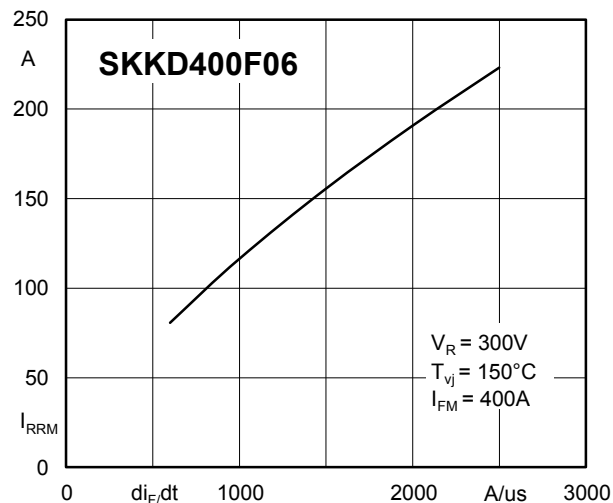


Fig. 2: Peak recovery current vs. current decrease

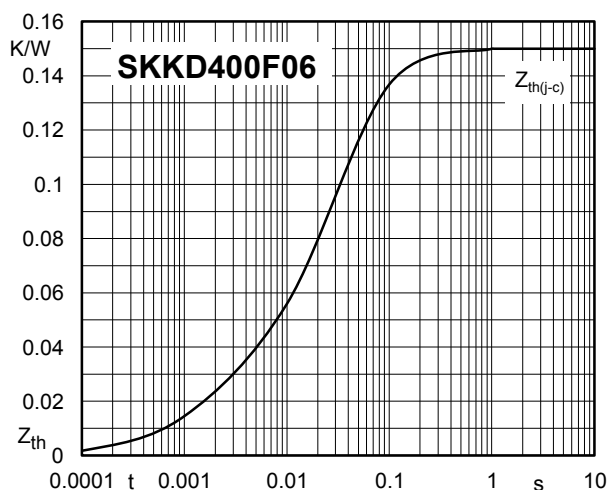


Fig. 3: Transient thermal impedance vs. time

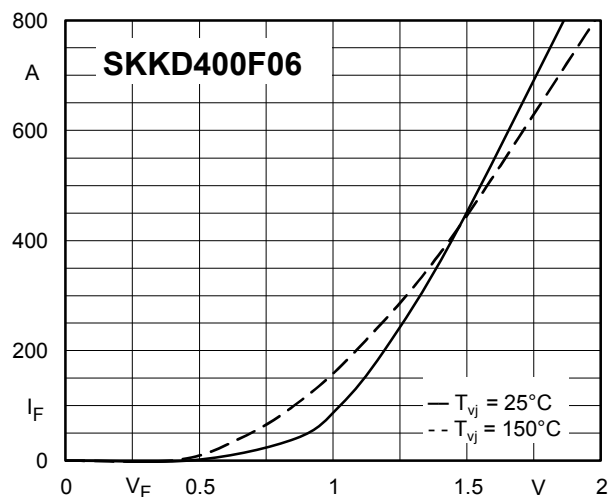


Fig. 4: Typ. forward charecteristics (terminal level)

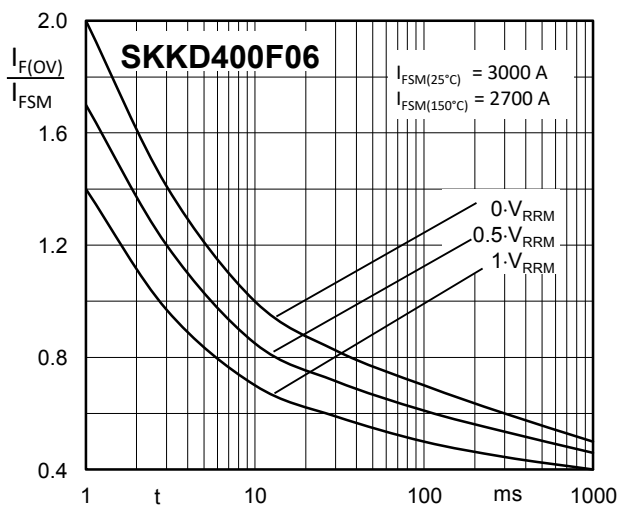


Fig. 5: Surge overload current vs. time

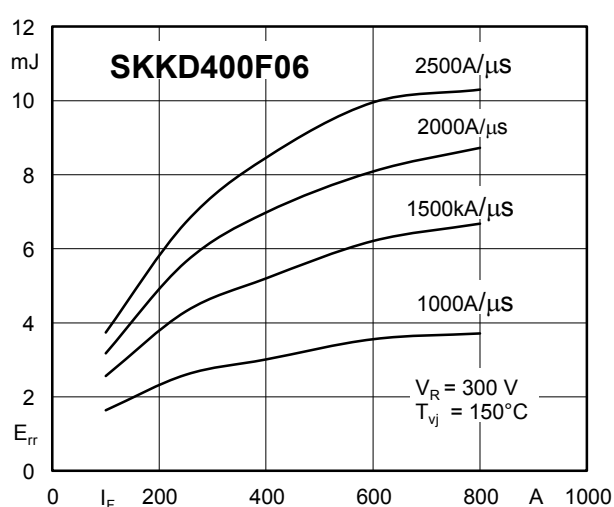
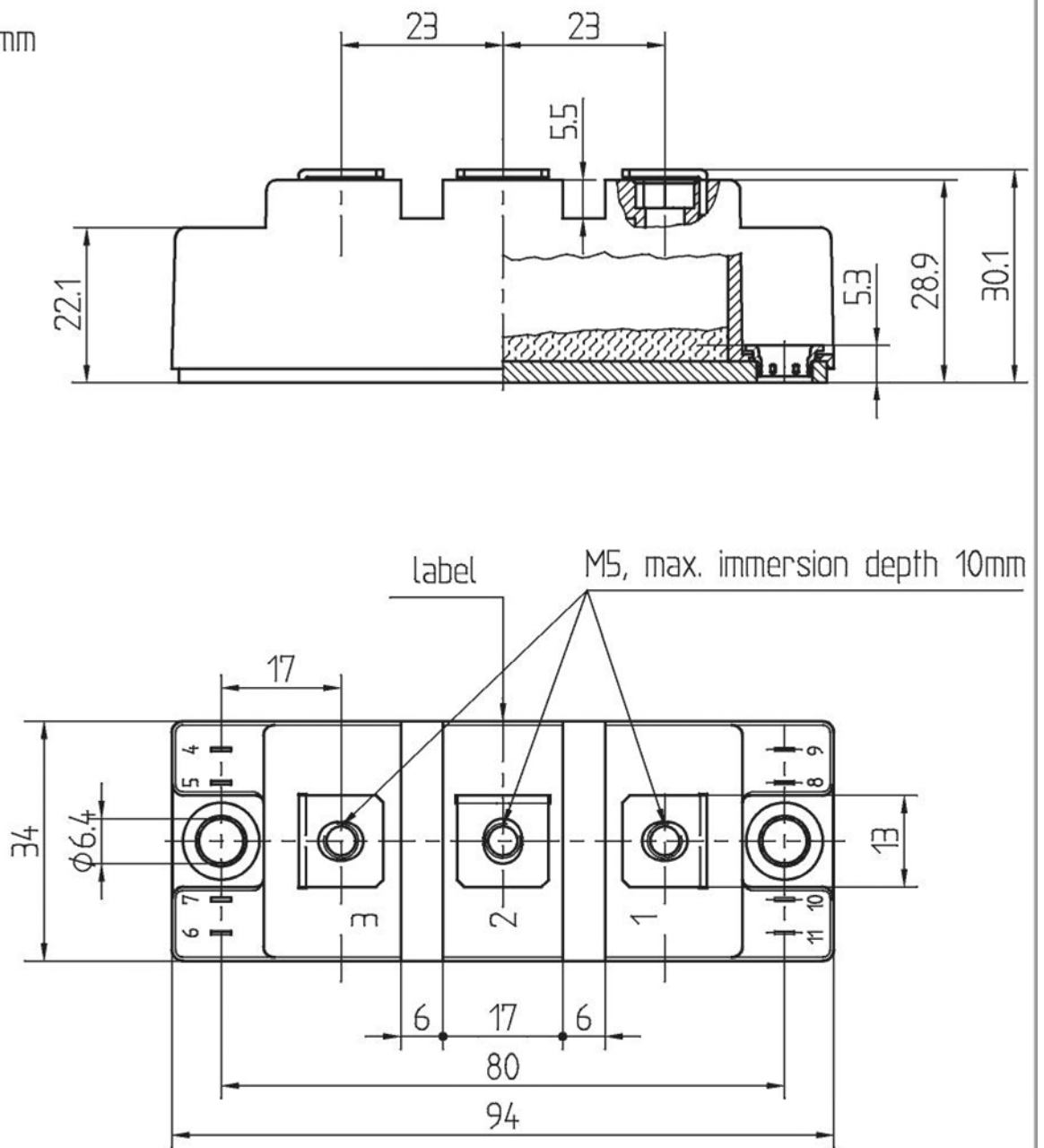


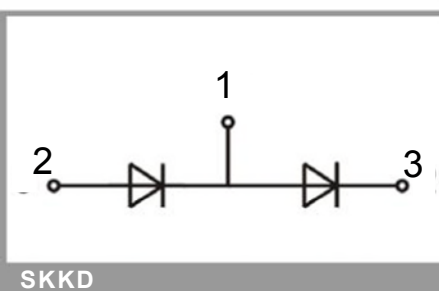
Fig. 6: Typ. turn-off energy dissipation per pulse

Dimensions in mm



General tolerance ± 0.5 mm

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This is an electrostatic discharge sensitive device (ESDS) due to international standard IEC 61340.

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