

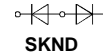
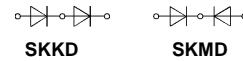
$V_{RSM}$ $V_{RRM}$	$I_{RMS}$ (maximum value for continuous operation) 120 A		
V	$I_{FAV}$ (sin. 180; $T_{case} = 85\text{ °C}$ ; 50 Hz) 42 A		
1000	<b>SKKD 42 F 10</b>	<b>SKMD 42 F 10</b>	<b>SKND 42 F 10</b>
1200	<b>SKKD 42 F 12</b>	<b>SKMD 42 F 12</b>	<b>SKND 42 F 12</b>
1400	<b>SKKD 42 F 14</b>	<b>SKMD 42 F 14</b>	<b>SKND 42 F 14</b>
1500	<b>SKKD 42 F 15</b>	<b>SKMD 42 F 15</b>	<b>SKND 42 F 15</b>

## SEMPACK® 1 Fast Diode Modules

**SKKD 42 F**  
**SKMD 42 F**  
**SKND 42 F**



Symbol	Conditions	SKKD 42 F SKMD 42 F SKND 42 F
$I_{FAV}$	sin. 180; $T_{case} = 85\text{ °C}$	42 A
$I_{FSM}$	$T_{vj} = 25\text{ °C}$ ; 10 ms $T_{vj} = 130\text{ °C}$ ; 10 ms	1 200 A 1 100 A
$i^2t$	$T_{vj} = 25\text{ °C}$ ; 8,3 ... 10 ms $T_{vj} = 130\text{ °C}$ ; 8,3 ... 10 ms	7 200 A <sup>2</sup> s 6 000 A <sup>2</sup> s
$t_{rr}$	$T_{vj} = 25\text{ °C}$ ; $I_F = 1\text{ A}$ ; $di_F/dt = 15\text{ A}/\mu\text{s}$ ; $V_R = 30\text{ V}$ ;	0,7 $\mu\text{s}$
$Q_{rr}$	} $T_{vj} = 130\text{ °C}$ ; $I_F = 50\text{ A}$ ; - $di_F/dt = 50\text{ A}/\mu\text{s}$ ; $V_R = 30\text{ V}$	75 $\mu\text{C}$
$I_{RM}$		70 A
$I_R$	$T_{vj} = 25\text{ °C}$ ; $V_R = V_{RRM}$	0,4 mA
$I_R$	$T_{vj} = 130\text{ °C}$ ; $\zeta_R = V_{RRM}$	30 mA
$V_F$	$T_{vj} = 25\text{ °C}$ ; $I_F = 150\text{ A}$ ; max.	1,85 V
$V_{(TO)}$	$T_{vj} = 130\text{ °C}$	1,0 V
$r_T$	$T_{vj} = 130\text{ °C}$	5 mW
$R_{thjc}$	per diode/per module	0,7/0,35 $^{\circ}\text{C}/\text{W}$
$R_{thch}$	per diode/per module	0,2/0,1 $^{\circ}\text{C}/\text{W}$
$T_{vj}$		- 40 ... +130 $^{\circ}\text{C}$
$T_{stg}$		- 40 ... +125 $^{\circ}\text{C}$
$V_{isol}$	a. c. 50 Hz; r.m.s.; 1 s/1 min.	3600 V-/3000 V-
$M_1$	Case to heatsink } SI units/ Busbars to terminals } US units	5 Nm/44 lb. in. $\pm 15\%$
$M_2$		3 Nm/26 lb. in. $\pm 15\%$
w	approx.	120 g
Case	→ page B 2 – 6	SKKD A 10 SKMD A 33 SKND A 37



### Features

- Heat transfer through ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- **SKKD** half bridge connection  
centre tap connections:  
**SKMD** common cathode  
**SKND** common anode
- UL recognized, file no E 63532

### Typical Applications

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

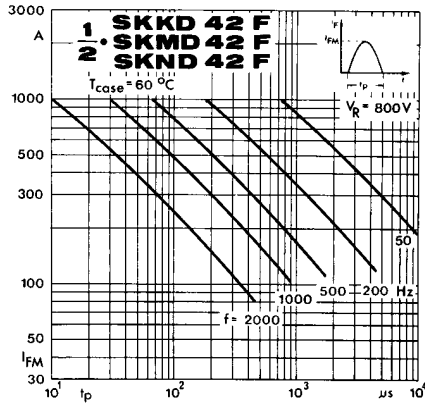


Fig. 12 a Rated sinusoidal peak forward current

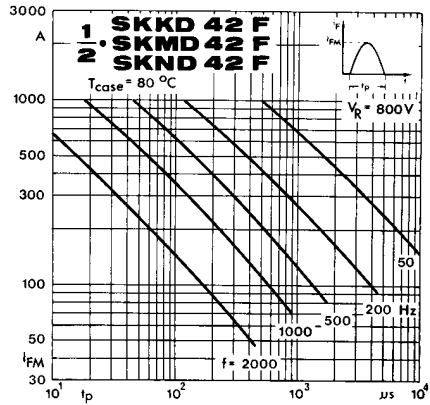


Fig. 12 b Rated sinusoidal peak forward current

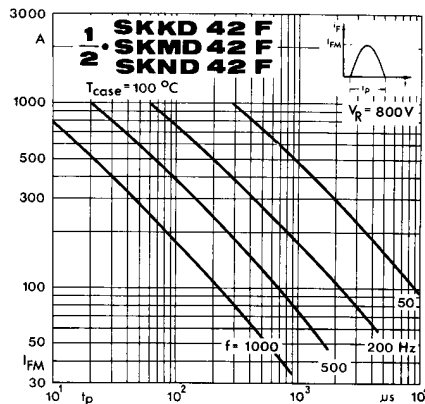


Fig. 12 c Rated sinusoidal peak forward current

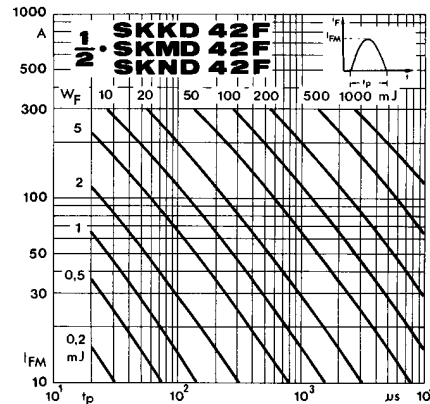


Fig. 13 Forward energy dissipation, sinusoidal

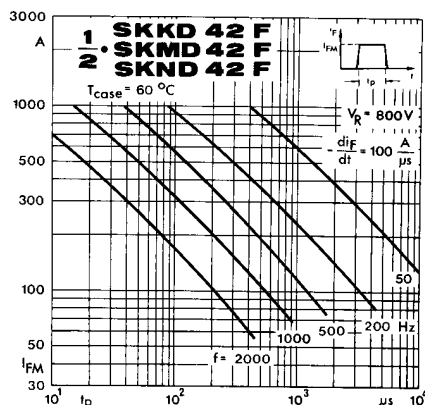


Fig. 14 a Rated rectangular peak forward current

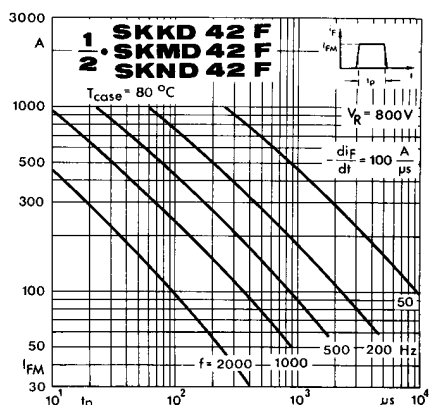


Fig. 14 b Rated rectangular peak forward current

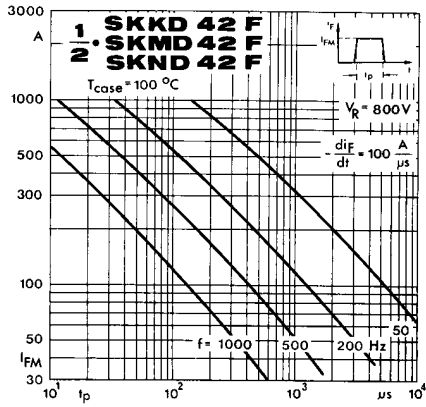


Fig. 14 c Rated rectangular peak forward current

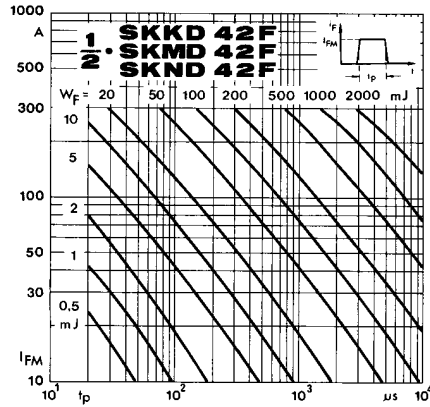


Fig. 15 Forward energy dissipation, rectangular

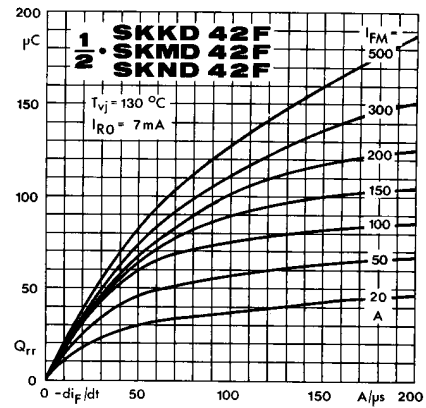


Fig. 16 Recovered charge vs. current decrease

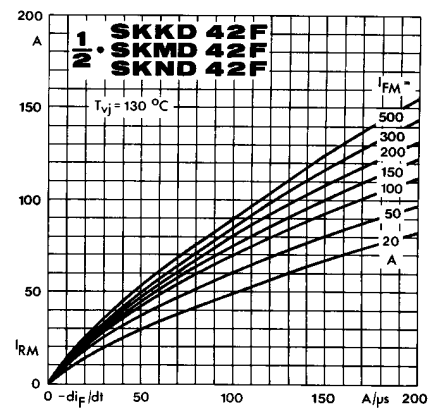


Fig. 17 Peak recovery current vs. current decrease

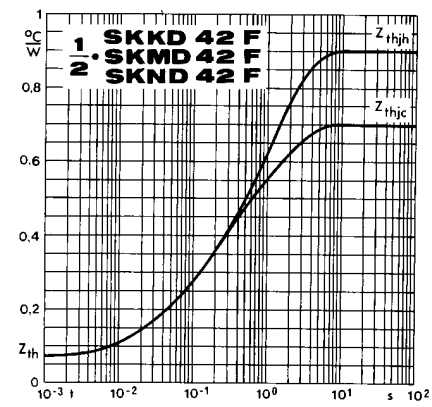


Fig. 18 Transient thermal impedance vs. time

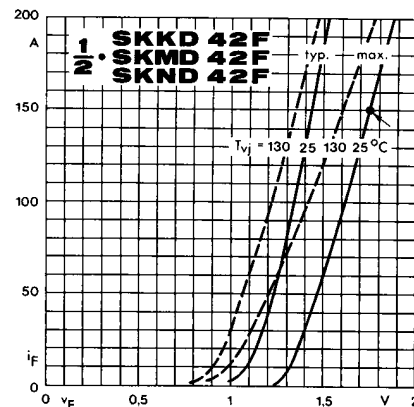


Fig. 19 Forward characteristics

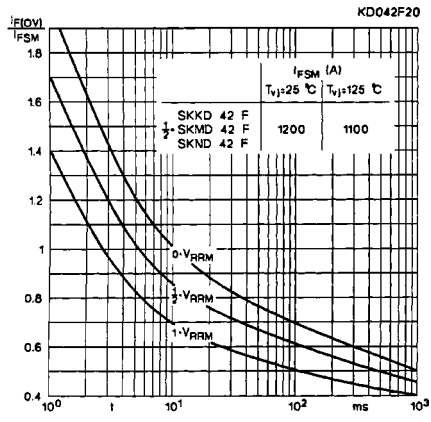


Fig. 20 Surge overload current vs. time