

Rectifier Diode Modules

SEMPACK® 1

SKKD 100 SKMD 100¹⁾

SEMPACK® 2

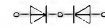
SKKD 162 SKND 162¹⁾
SKKE 162



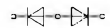
SKKD



SKKE



SKMD



SKND

Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- SKKD half bridge connection center-tap connections:
SKMD common cathode
SKND common anode
- UL recognized, file no. E 63 532

Typical Applications

- Non-controllable rectifiers for AC/AC converters
- Line rectifiers for transistorized AC motor controllers
- Field supply for DC motors
- SKKE: Free-wheeling diodes

V _{RSM}	V _{RRM}	I _{FMS} (maximum values for continuous operation)		
		175 A	250 A	250 A
		I _{FAV} (sin. 180; T _{case} = ...)		
V	V	100 A (85 °C)	160 A (95 °C)	160 A (95 °C)
500	400	SKKD 100/04	–	–
900	800	SKKD 100/08	SKKD 162/08	SKKE 162/08
1300	1200	SKKD 100/12	SKKD 162/12	SKKE 162/12
1500	1400	SKKD 100/14	SKKD 162/14	SKKE 162/14
1700	1600	SKKD 100/16	SKKD 162/16	SKKE 162/16
1900	1800	SKKD 100/18	SKKD 162/18	SKKE 162/18
2100	2000	–	SKKD 162/20	SKKE 162/20
2300	2200	–	SKKD 162/22	SKKE 162/22

Symbol	Conditions	SKKD 100	SKKD 162 SKKE 162	Units
I _{FAV} I _O ¹⁾	sin. 180; (T _{case} = ...) B2/B6 T _{amb} = 45 °C, P 3/180 T _{amb} = 35 °C, P 3/180F P16/200F	100 (85°C) 73/91 150/190 –	160 (95°C) 90/115 210/260 320/425	A A A A
I _{FSM} i ² t	T _{vj} = 25 °C; 10 ms T _{vj} = 125 °C; 10 ms T _{vj} = 25 °C; 8,3 ... 10 ms T _{vj} = 125 °C; 8,3 ... 10 ms	2500 2000 31 250 20 000	6000 5000 180 000 125 000	A A A ² s A ² s
I _{RD}	T _{vj max} ; V _{RD} = V _{RRM}	5	9	mA
V _F V _(TO) r _T	T _{vj} = 25 °C (I _F = ...); max. T _{vj max} T _{vj max}	1,35 (300 A) 0,85 1,3	1,5 (500 A) 0,85 1,2	V V mΩ
R _{thjc} R _{thch} T _{vj} T _{stg}	per diode/per module ²⁾	0,35/0,175 0,2/0,1 – 40 ... +125 – 40 ... +125	0,18/0,09 0,10/0,05 – 40 ... +135 – 40 ... +135	°C/W °C/W °C °C
V _{isol} M ₁ M ₂ a w	a. c. 50 Hz; r.m.s.; 1 s/1 min to heatsink to terminals approx.	SI units US units SI units US units 5 · 9,81 120	3600/3000 5 ± 15 % 44 ± 15 % 3 ± 15 % ³⁾ 26 ± 15 % ³⁾ 5 ± 15 % ³⁾ 44 ± 15 % ³⁾ 5 · 9,81 250	V~ Nm lb.in. Nm lb.in. m/s ² g
Case	→ page B 1 – 93; 94	SKKD 100: A 10 (B 1 – 42: SKMD 100: A 33)	SKKD 162: A 23 SKKE 162: A 24 SKMD 162: A 57	

¹⁾ SKMD 100, SKND 162 available on request

²⁾ SKKD types only

³⁾ See the assembly instructions

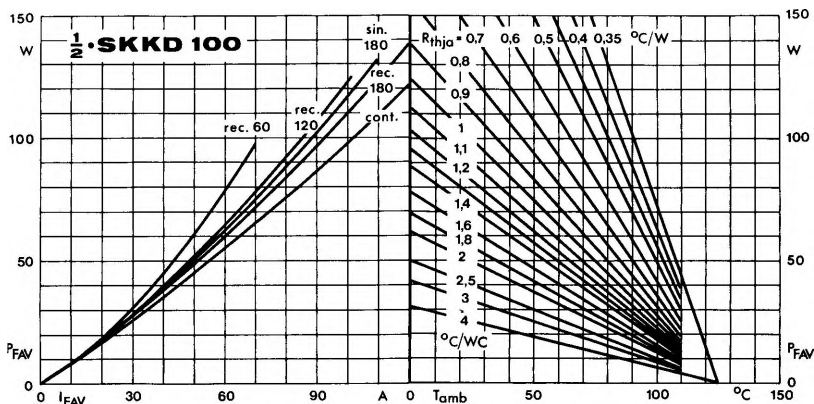


Fig. 11 a Power dissipation per diode vs. forward current and ambient temperature

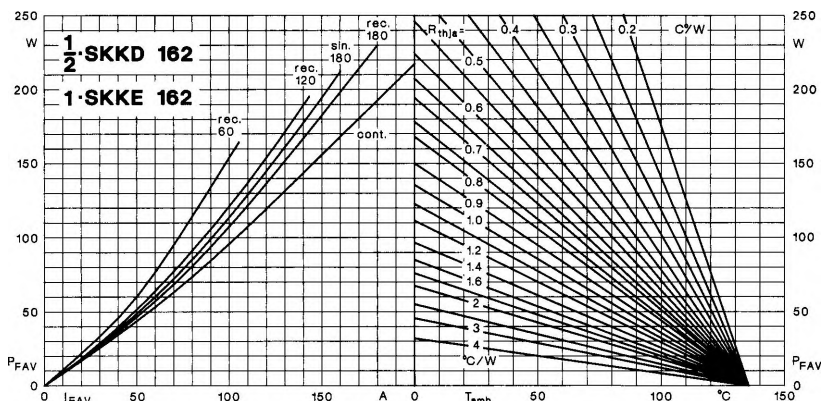


Fig. 11 b Power dissipation per diode vs. forward current and ambient temperature

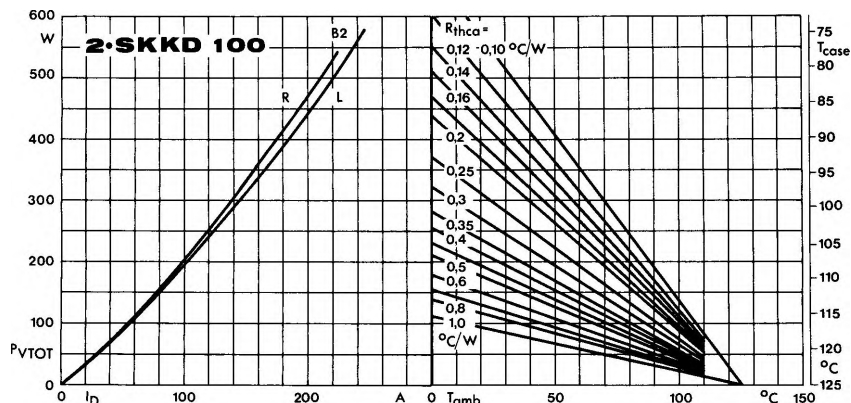


Fig. 12 a Power dissipation of two modules vs. direct current and case temperature

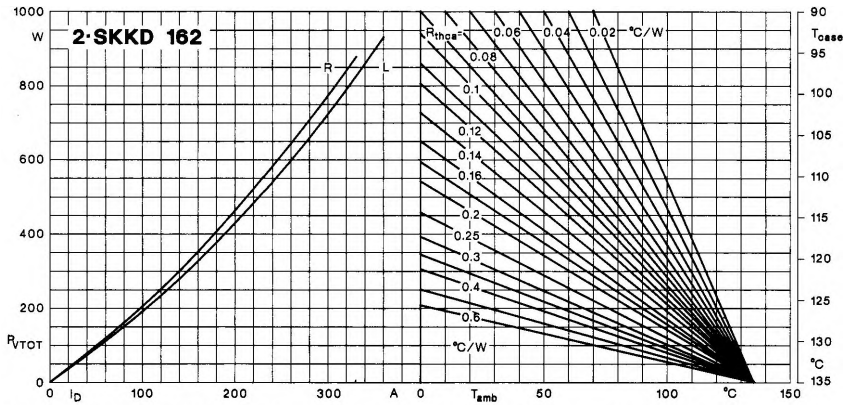


Fig. 12 b Power dissipation of two modules vs. direct current and case temperature

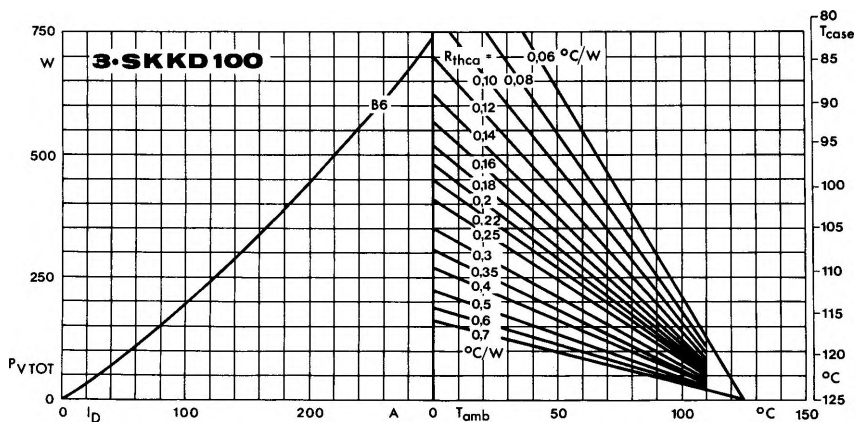


Fig. 13 a Power dissipation of three modules vs. direct current and case temperature

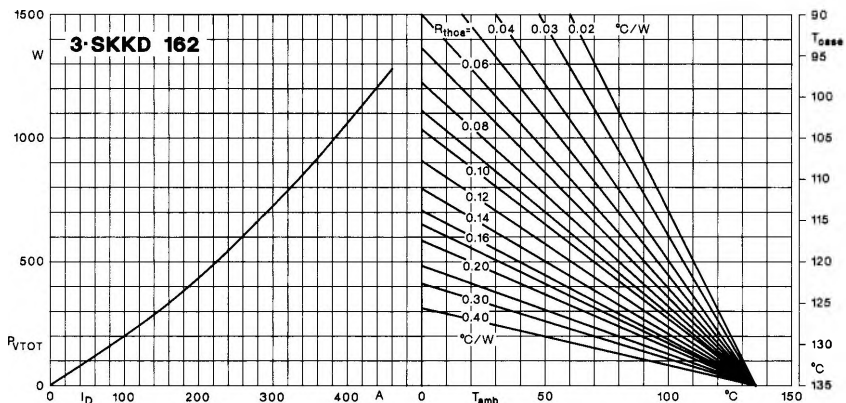


Fig. 13 b Power dissipation of three modules vs. direct current and case temperature

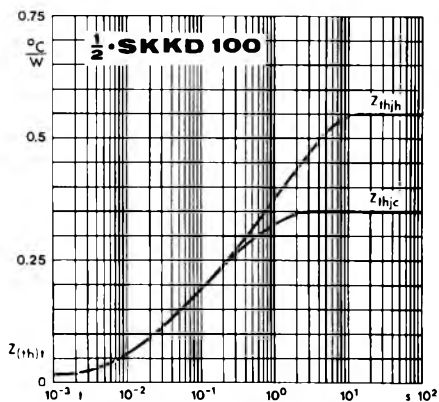


Fig. 14 a Transient thermal impedance vs. time

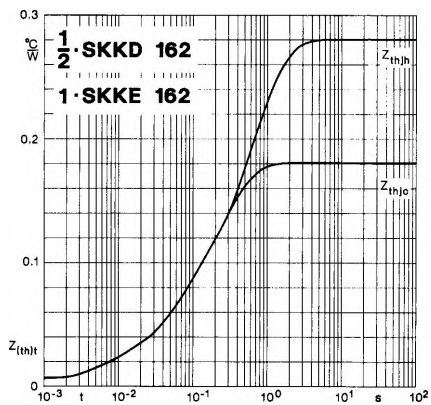


Fig. 14 b Transient thermal impedance vs. time

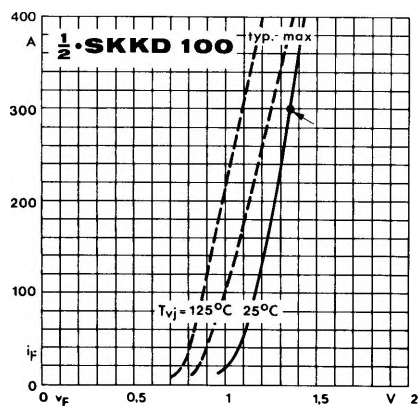


Fig. 15 a Forward characteristics

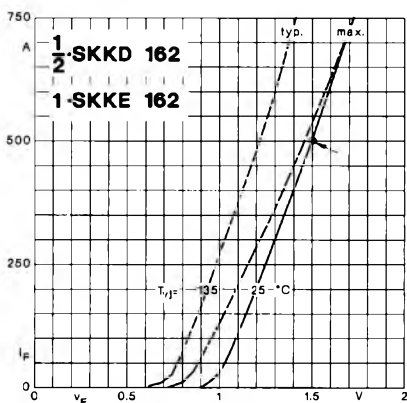


Fig. 15 b Forward characteristics

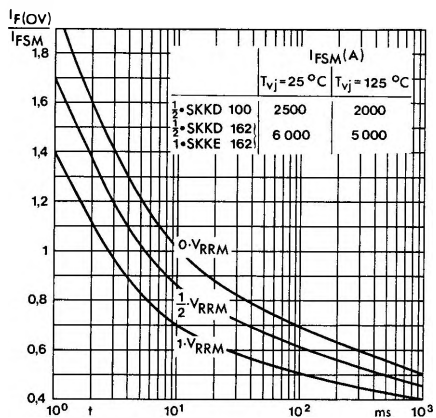


Fig. 16 Surge overload current vs. time