

## Rectifier Diodes

**SKN 320 SKR 320**  
**SKN 400**



### Features

- Reverse voltages up to 3000 V
- Hermetic metal cases with glass insulators; SKN 400 ceramic insulator with extra long creepage distances
- Threaded studs ISO M24 x 1,5
- **SKN**: anode to stud  
**SKR**: cathode to stud

### Typical Applications

- SKN/SKR 320: all-purpose high power rectifier diodes
- SKN 400: high voltage rectifier diode, especially for traction applications
- Cooling via heatsinks
- Non-controllable and half-controllable rectifiers, free-wheeling diodes

V <sub>RSM</sub> V <sub>RRM</sub>	I <sub>FRMS</sub> (maximum values for continuous operation) 700 A		
	I <sub>FAV</sub> (sin. 180; T <sub>case</sub> = 100 °C) 420 A		400 A
V	$\Delta$	$\nabla$	$\triangle$
200	<b>SKN 320/02</b>	<b>SKR 320/02</b>	–
400	<b>SKN 320/04</b>	<b>SKR 320/04</b>	–
800	<b>SKN 320/08</b>	<b>SKR 320/08</b>	–
1200	<b>SKN 320/12</b>	<b>SKR 320/12</b>	–
1400	<b>SKN 320/14</b>	<b>SKR 320/14</b>	–
1600	<b>SKN 320/16</b>	<b>SKR 320/16</b>	–
1800	–	–	<b>SKN 400/18</b>
2400	–	–	<b>SKN 400/24</b>
2700	–	–	<b>SKN 400/27</b>
3000	–	–	<b>SKN 400/30</b>

Symbol	Conditions	SKN 320 SKR 320	SKN 400
I <sub>FAV</sub>	sin. 180; T <sub>case</sub> = 87 °C = 100 °C = 125 °C	– 420 A 320 A	450 A 400 A –
I <sub>FSM</sub>	T <sub>vj</sub> = 25 °C; 10 ms T <sub>vj max.</sub> ; 10 ms	9 000 A 8 000 A	9 000 A 7 500 A
i <sup>2</sup> t	T <sub>vj</sub> = 25 °C; 8.3 ... 10 ms T <sub>vj max.</sub> ; 8.3 ... 10 ms	400 000 A <sup>2</sup> s 300 000 A <sup>2</sup> s	400 000 A <sup>2</sup> s 280 000 A <sup>2</sup> s
Q <sub>rr</sub>	T <sub>vj</sub> = 160 °C; $-\frac{di_F}{dt} = 10 \frac{A}{\mu s}$	typ. 300 μC	typ. 400 μC
I <sub>R</sub>	T <sub>vj</sub> = 25 °C; V <sub>R</sub> = V <sub>RRM</sub> T <sub>vj max.</sub> ; V <sub>R</sub> = V <sub>RRM</sub>	3 mA 100 mA	3 mA 60 mA
V <sub>F</sub>	T <sub>vj</sub> = 25 °C; (I <sub>F</sub> = ...); max.	1,35 V (1000 A)	1,45 V (1200 A)
V <sub>(TO)</sub>	T <sub>vj max.</sub>	0,8 V	0,9 V
r <sub>T</sub>	T <sub>vj max.</sub>	0,45 mΩ	0,5 mΩ
R <sub>thjc</sub>		0,16 °C/W	0,11 °C/W
R <sub>thch</sub>		0,015 °C/W	0,01 °C/W
T <sub>vj</sub>		– 40 ... + 180 °C	– 40 ... + 160 °C
T <sub>stg</sub>		– 55 ... + 180 °C	– 55 ... + 160 °C
M	SI units/US units	60 Nm/530 lb. in.	
a		5 · 9,81 m/s <sup>2</sup>	
w	approx.	500 g	
RC	P <sub>R</sub> = 2 W	1 μF + 20 Ω	
R <sub>p</sub>	P <sub>R</sub> = 20 W	25 kΩ	
Case		E 16	E 17

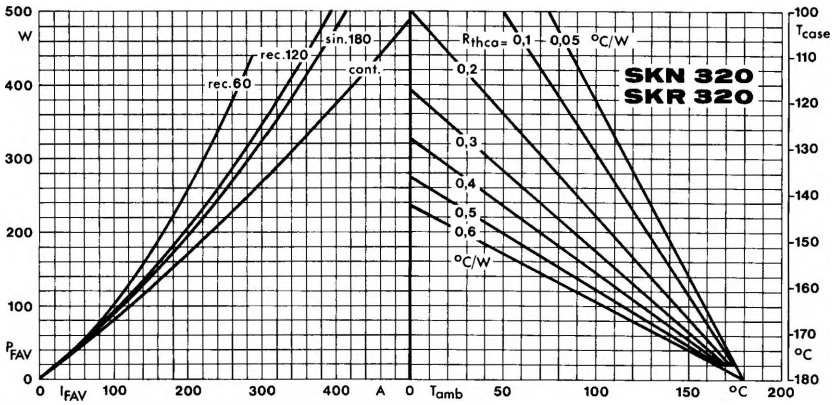


Fig. 1 a Power dissipation vs. forward current and case temperature

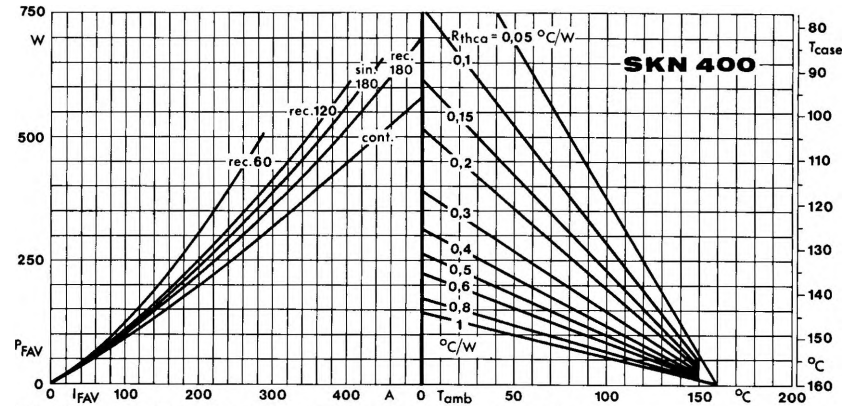


Fig. 1 b Power dissipation vs. forward current and case temperature

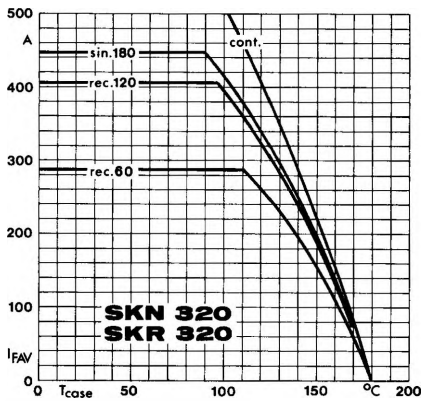


Fig. 3 a Rated forward current vs. case temperature

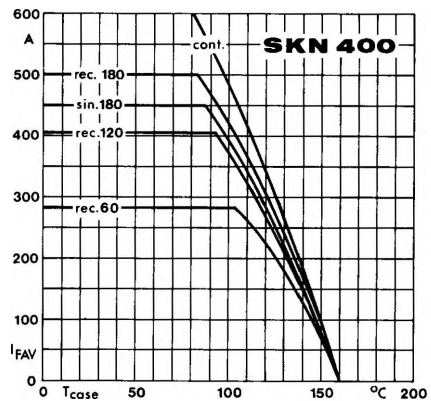


Fig. 3 b Rated forward current vs. case temperature

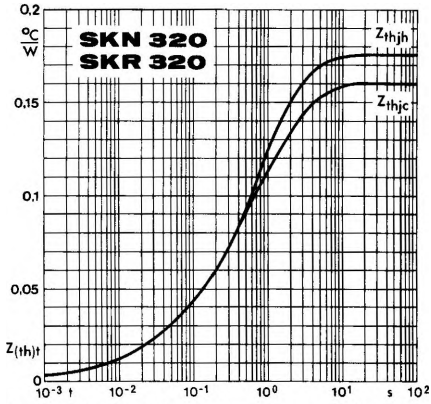


Fig. 5 a Transient thermal impedance vs. time

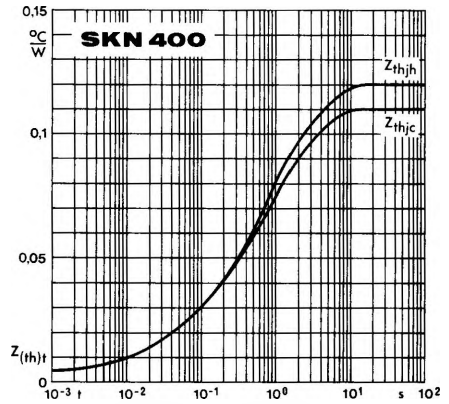


Fig. 5 b Transient thermal impedance vs. time

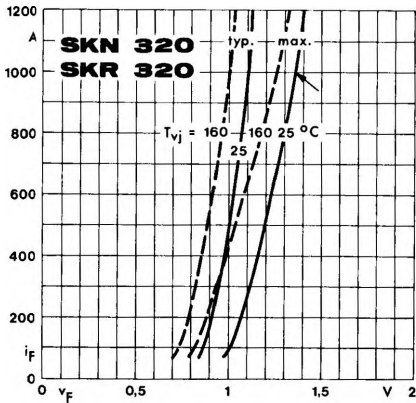


Fig. 6 a Forward characteristics

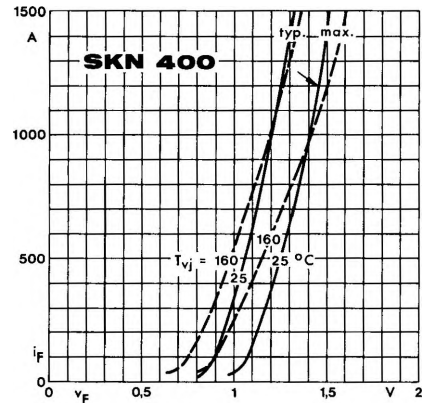


Fig. 6 b Forward characteristics

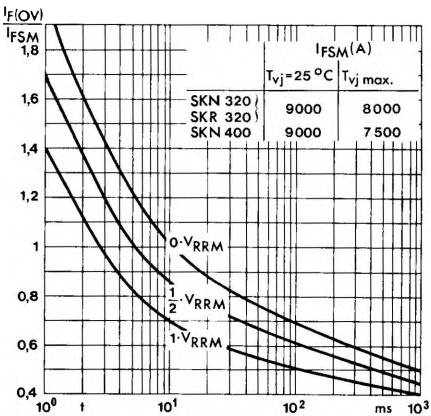


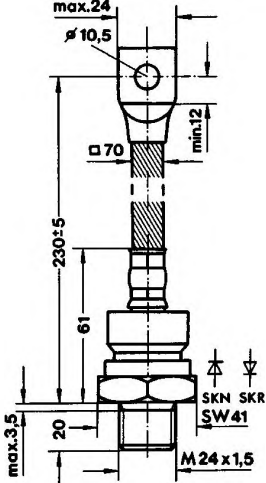
Fig. 7 Surge overload current vs. time

SKN 320  
SKR 320

Case E 16

IEC: A 22 B

DIN 41 888: 107 B

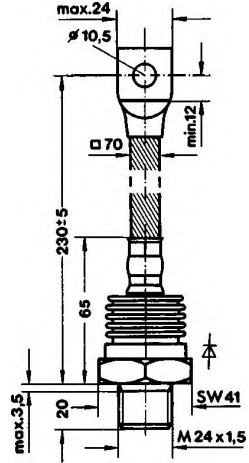


SKN 400

Case E 17

IEC: A 22 B

DIN 41 888: 107 B 2

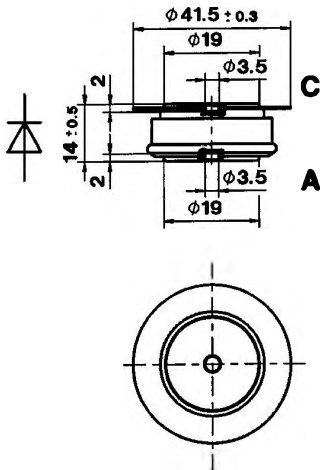


SKN 450  
SKN 501

Case E 18

DIN 41 814: 151 A 2

JEDEC: DO-200 AA

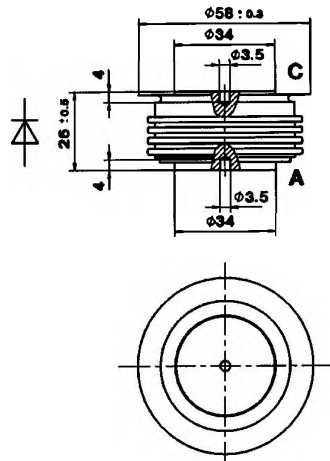


SKN 870

Case E 19

DIN 41 814: 153 C 2

JEDEC: DO-200 AB



Dimensions in mm