

## Rectifier Diodes

**SKN 450**  
**SKN 501**  
**SKN 870**



$V_{RSM}$ $V_{RRM}$ V	$I_{FAV}$ (sin. 180; $T_{case} = 85\text{ °C}$ )		
	500 A	720 A	1110 A
400	–	<b>SKN 501/04</b>	<b>SKN 870/04</b>
800	–	<b>SKN 501/08</b>	–
1200	–	<b>SKN 501/12</b>	<b>SKN 870/12</b>
1400	–	<b>SKN 501/14</b>	–
1600	–	<b>SKN 501/16</b>	<b>SKN 870/16</b>
1800	<b>SKN 450/18</b>	<b>SKN 501/18</b>	–
2000	<b>SKN 450/20</b>	–	–
2200	<b>SKN 450/22</b>	–	–
2400	–	–	<b>SKN 870/24</b>

Symbol	Conditions	SKN 450	SKN 501	SKN 870
$I_{FAV}$	sin. 180; DSC; ( $T_{case} = \dots$ )	450 A (95 °C)	500 A (125 °C)	870 A (105 °C)
$I_{FSM}$	$T_{vj} = 25\text{ °C};$ 10 ms	6 000 A	7 000 A	13 000 A
$i^2t$	$T_{vj\ max.};$ 10 ms	5 000 A	6 000 A	10 500 A
	$T_{vj} = 25\text{ °C};$ 8,3 ... 10 ms	180 000 A <sup>2</sup> s	245 000 A <sup>2</sup> s	850 000 A <sup>2</sup> s
$Q_{rr}$	$T_{vj} = 25\text{ °C};$ $I_{FM} = 500\text{ A};$ $-\frac{di_F}{dt} = 10\frac{\text{A}}{\mu\text{s}}$ typ.	700 $\mu\text{C}$	600 $\mu\text{C}$	2000 $\mu\text{C}$
	$I_{RM}$	60 A	30 A	100 A
$I_R$	$T_{vj} = 25\text{ °C};$ $V_R = V_{RRM}$	2 mA	2 mA	4 mA
	$T_{vj\ max.};$ $V_R = V_{RRM}$	20 mA	50 mA	40 mA
$V_F$	$T_{vj} = 25\text{ °C};$ ( $I_F = \dots$ ); max.	1,8 V (1500 A)	1,65 V (1500 A)	1,85 V (3000 A)
$V_{(TO)}$	$T_{vj\ max.}$	0,85 V	0,80 V	0,85 V
$r_T$	$T_{vj\ max.}$	0,7 m $\Omega$	0,6 m $\Omega$	0,33 m $\Omega$
$R_{thjc}$	DSC/SSC (Double-sided cooling/single sided cooling)	0,075/0,15 °C/W		0,033/ 0,066 °C/W
$R_{thch}$		0,02/0,04 °C/W		0,007/ 0,014 °C/W
$T_{vj}$		– 40 ... + 150 °C	– 40 ... + 180 °C	– 40 ... + 150 °C
$T_{stg}$		– 40 ... + 150 °C	– 40 ... + 180 °C	– 40 ... + 150 °C
F	SI units	4 ... 5 kN		13,5 ... 16,5 kN
	US units approx.	900 ... 1100 lbs.		3000 ... 3500 lbs.
w		51 g		230 g
RC	$P_R = 2\text{ W}$	1 $\mu\text{F} + 20\ \Omega$		
$R_p$	$P_R = 20\text{ W}$	25 k $\Omega$		
Case		E 18		E 19

### Features

- Reverse voltages up to 3000 V
- Capsule type metal-ceramic packages with precious metal pressure contacts
- Contact diameters 19 and 32 mm

### Typical Applications

- All-purpose high power rectifier diodes
- SKN 870: High voltage grades available for industrial high power drives and medium traction applications
- Cooling via heatsinks (double or single sided)
- Non-controllable and half-controllable rectifiers
- Free-wheeling diodes

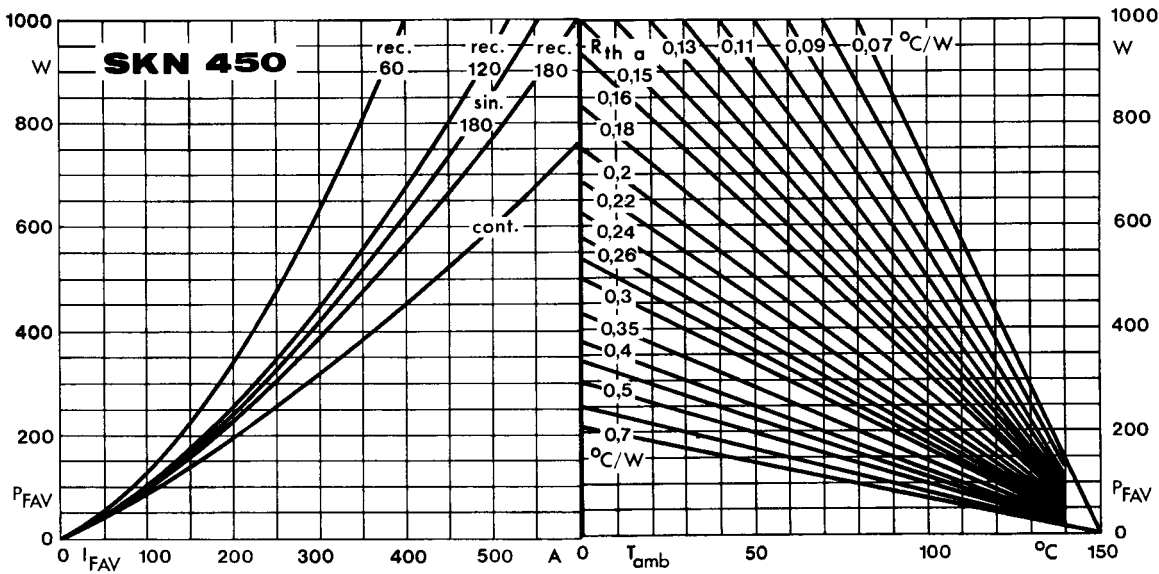


Fig. 2 a Power dissipation vs. forward current and ambient temperature

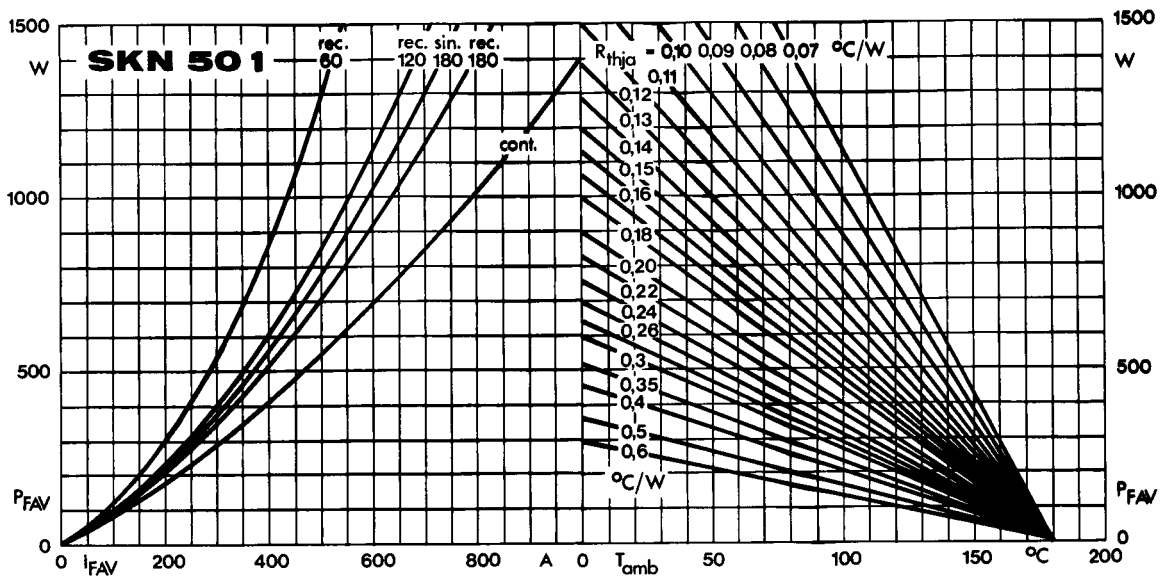


Fig. 2 b Power dissipation vs. forward current and ambient temperature

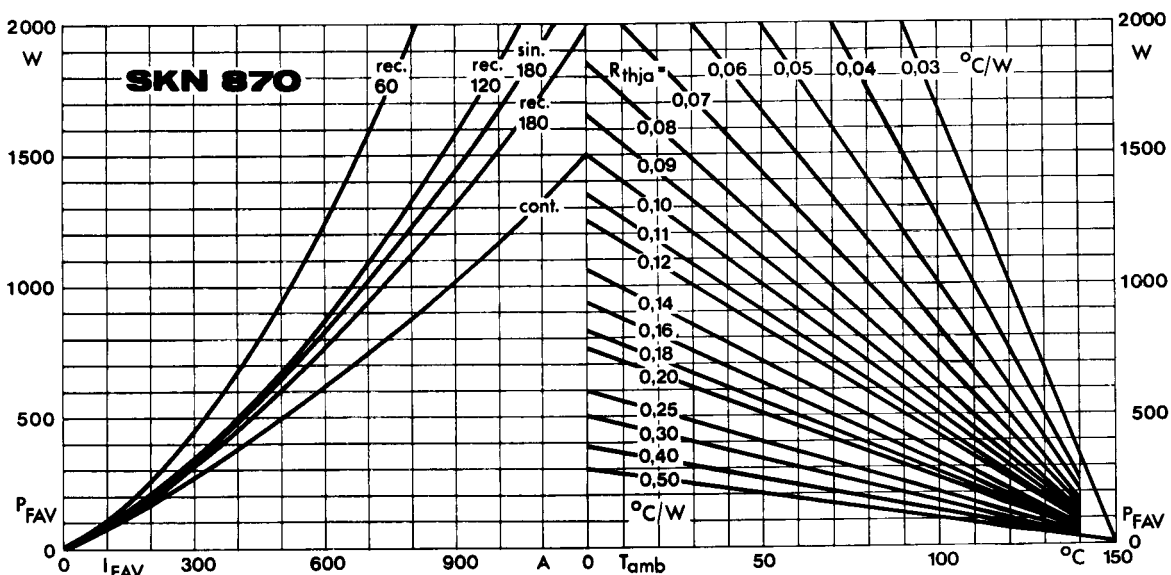


Fig. 2 c Power dissipation vs. forward current and ambient temperature

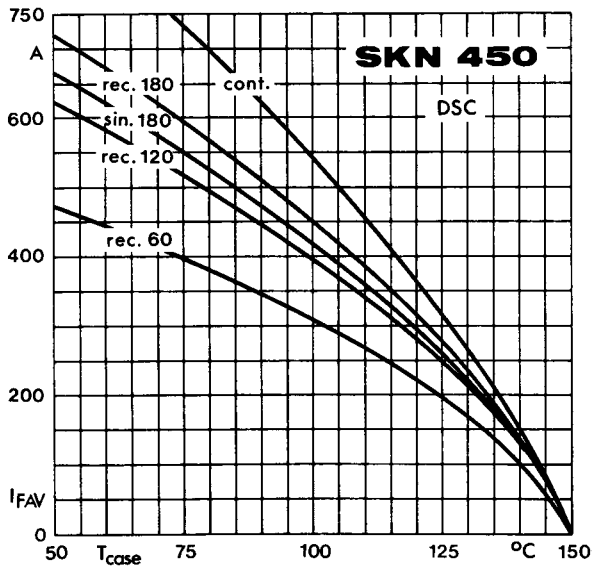


Fig. 3 a Rated forward current vs. case temperature

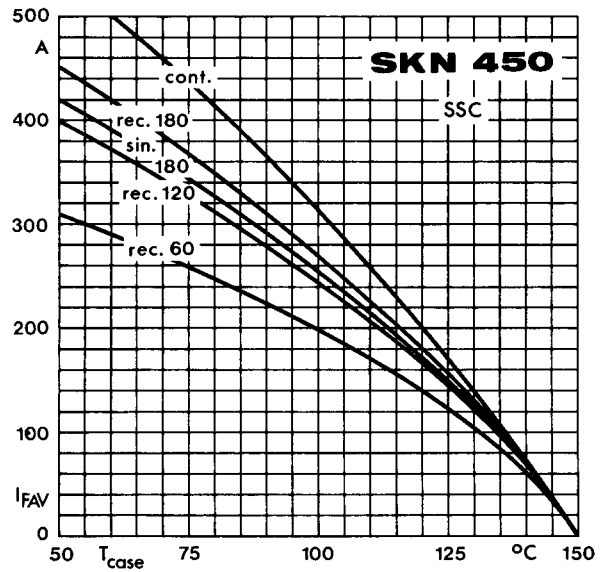


Fig. 3 b Rated forward current vs. case temperature

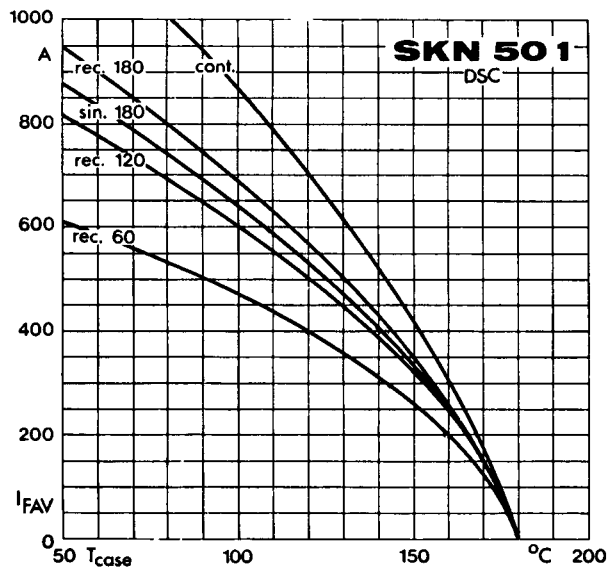


Fig. 3 c Rated forward current vs. case temperature

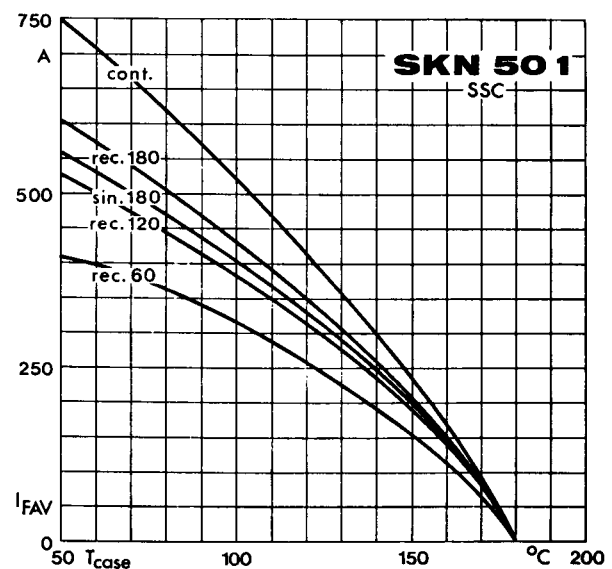


Fig. 3 d Rated forward current vs. case temperature

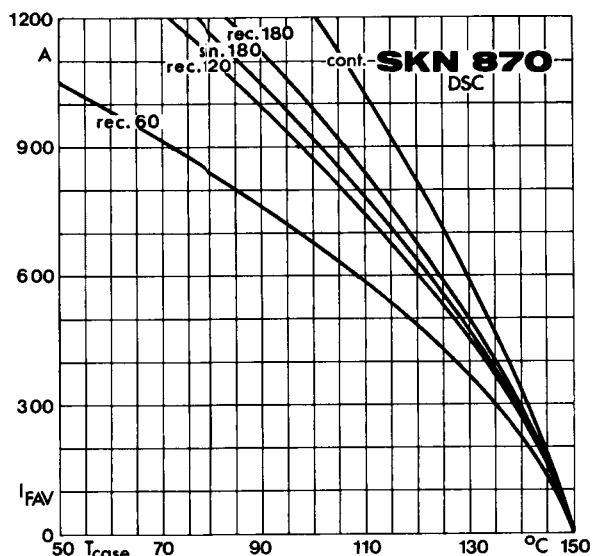


Fig. 3 e Rated forward current vs. case temperature

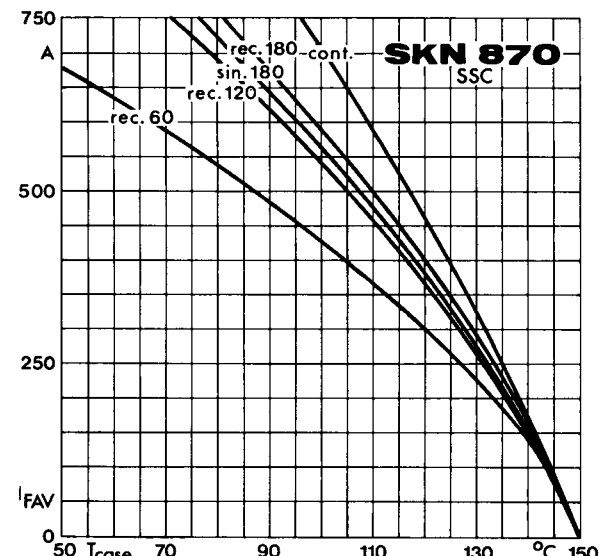


Fig. 3 f Rated forward current vs. case temperature

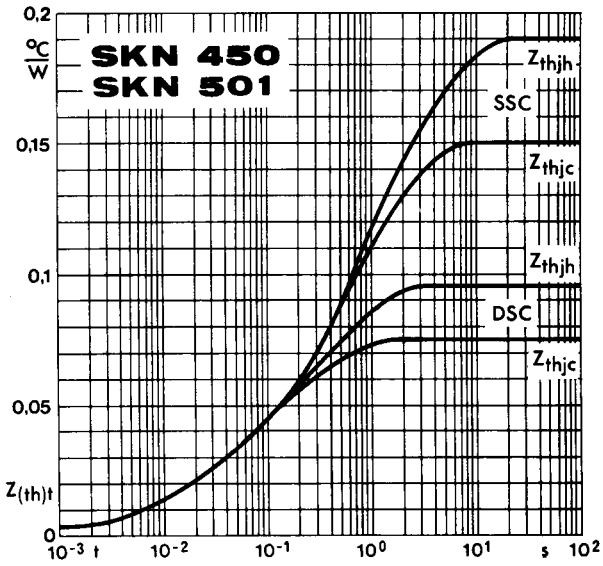


Fig. 5 a Transient thermal impedance vs. time

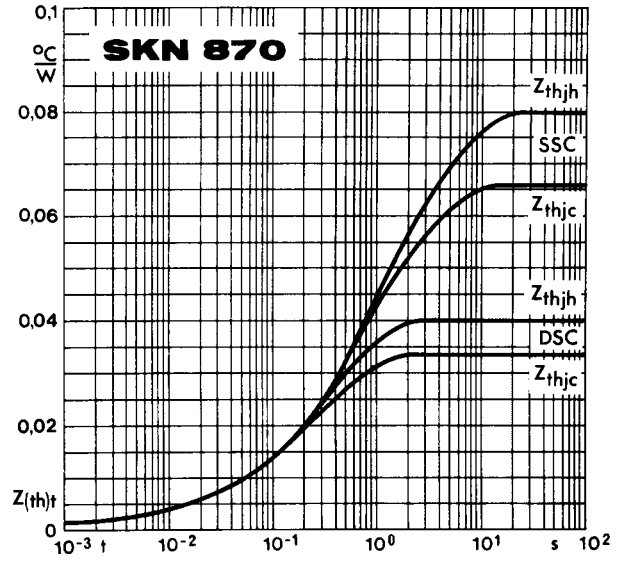


Fig. 5 b Transient thermal impedance vs. time

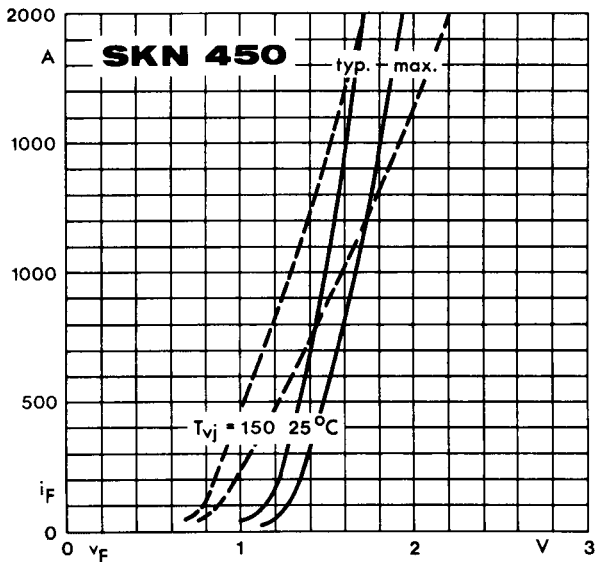


Fig. 6 a Forward characteristics

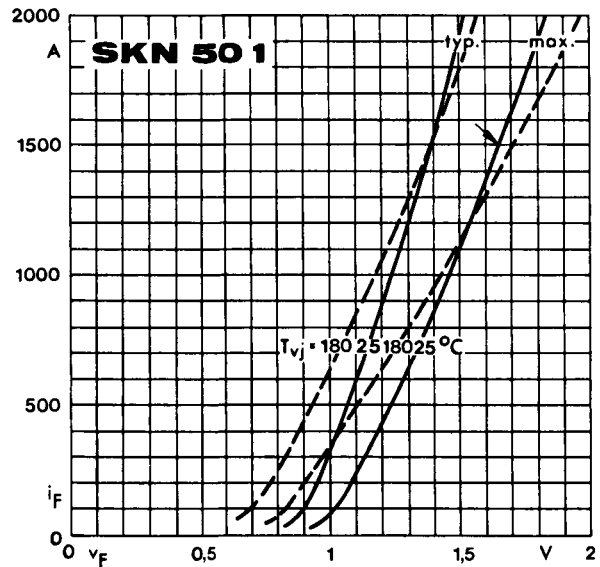


Fig. 6 b Forward characteristics

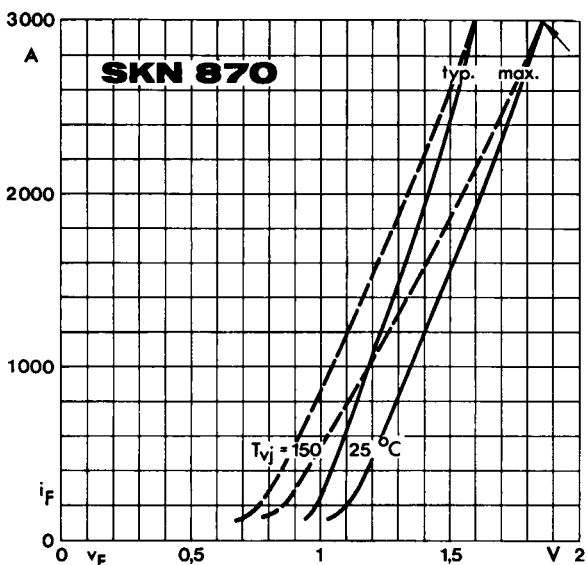


Fig. 6 c Forward characteristics

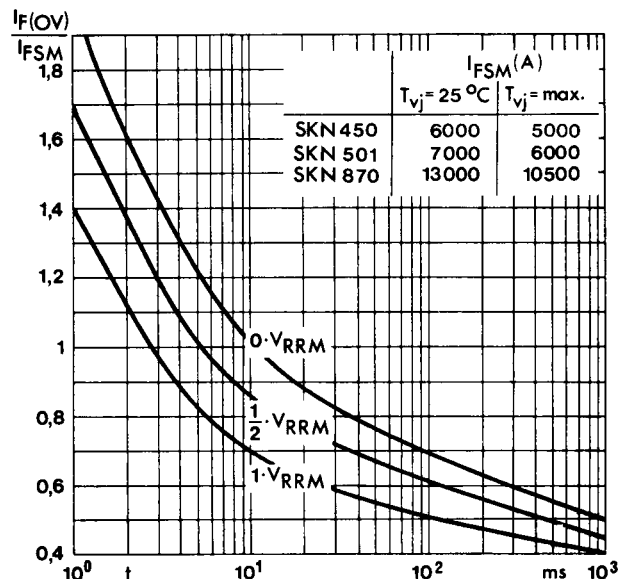
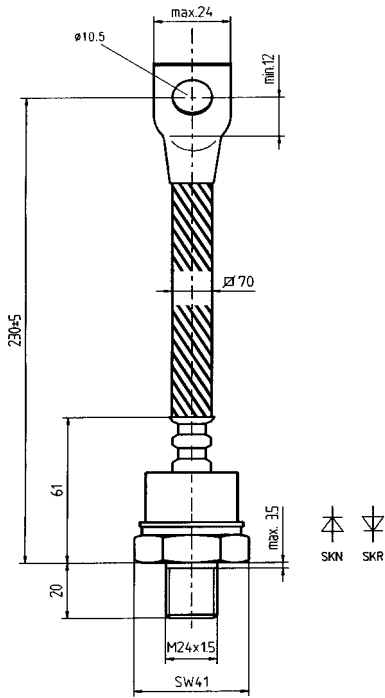


Fig. 7 Surge overload current vs. time

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

Case E 16

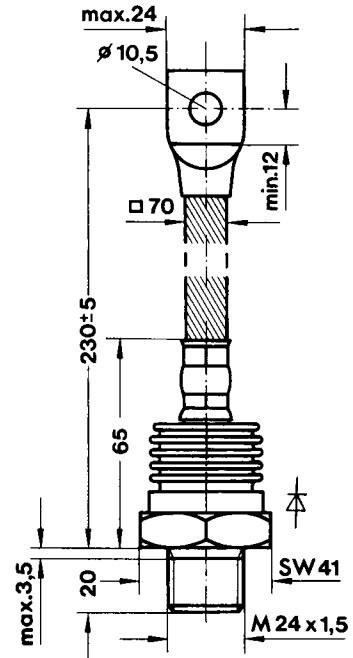
IEC: A 22 B  
DIN 41 888: 107 B



**SKN 400**

Case E 17

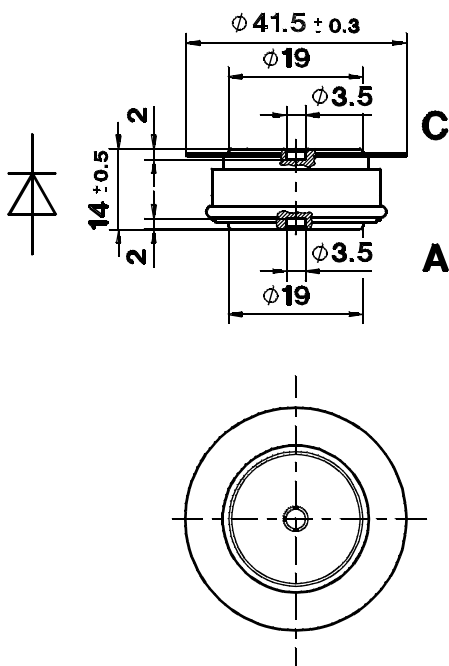
IEC: A 22 B  
DIN 41 888: 107 B 2



**SKN 450**  
**SKN 501**

Case E 18

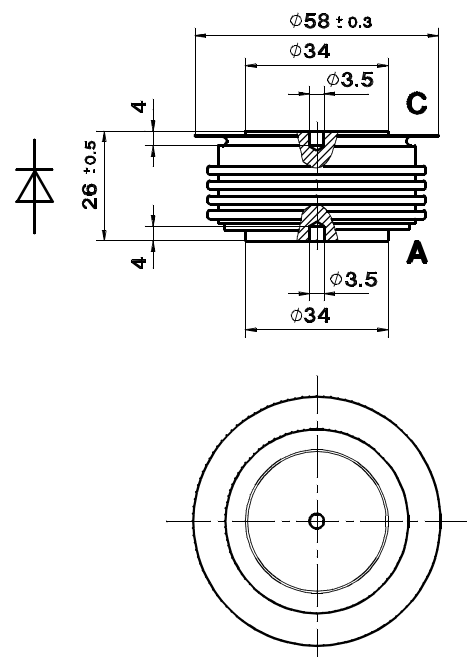
DIN 41 814: 151 A 2  
JEDEC: DO-200 AA



**SKN 870**

Case E 19

DIN 41 814: 153 C 2  
JEDEC: DO-200 AB



Dimensions in mm