

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

Rectifier Diodes

SKN 450
SKN 501
SKN 870



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	$T_{vj\text{ max.}}; 10\text{ ms}$ $T_{vj} = 25\text{ °C};$ 8,3 ... 10 ms	5 000 A 180 000 A ² s	6 000 A 245 000 A ² s	10 500 A 850 000 A ² s
Q_{rr}	$T_{vj} = 140\text{ °C};$ $I_{FM} = 500\text{ A};$ $-\frac{di_F}{dt} = 10\frac{\text{A}}{\mu\text{s}}$ typ.	700 μC	600 μC	2000 μC
I_{RM}		60 A	30 A	100 A
I_R	$T_{vj} = 25\text{ °C};$ $V_R = V_{RRM}$ $T_{vj\text{ max.}};$ $V_R = V_{RRM}$	2 mA 20 mA	2 mA 50 mA	4 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)
$V_{(TO)}$	$T_{vj\text{ max.}}$	0,85 V	0,80 V	0,85 V
r_T	$T_{vj\text{ max.}}$	0,7 m Ω	0,6 m Ω	0,33 m Ω
R_{thjc}	DSC/SSC (Double-sided cooling/single sided cooling)	0,075/0,15 °C/W		0,033/
R_{thch}		0,02/0,04 °C/W		0,066 °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
w	US units	900 ... 1100 lbs.		3000 ... 3500 lbs.
	approx.	51 g		230 g
RC	$P_R = 2\text{ W}$	1 $\mu\text{F} + 20\text{ }\Omega$		
R_p	$P_R = 20\text{ W}$	25 k Ω		
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

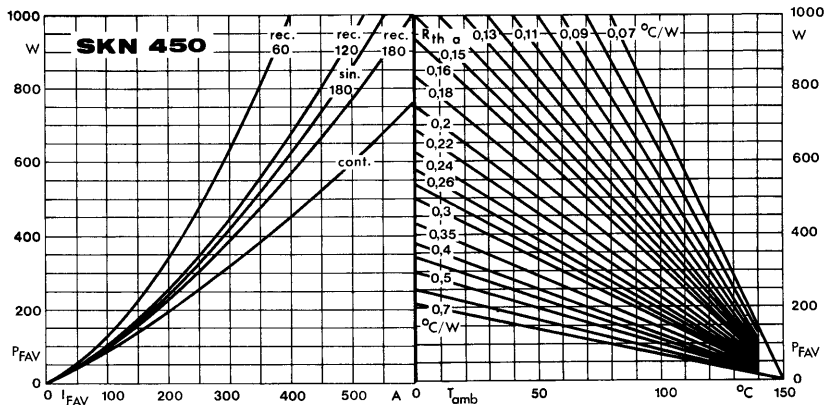


Fig. 2 a Power dissipation vs. forward current and ambient temperature

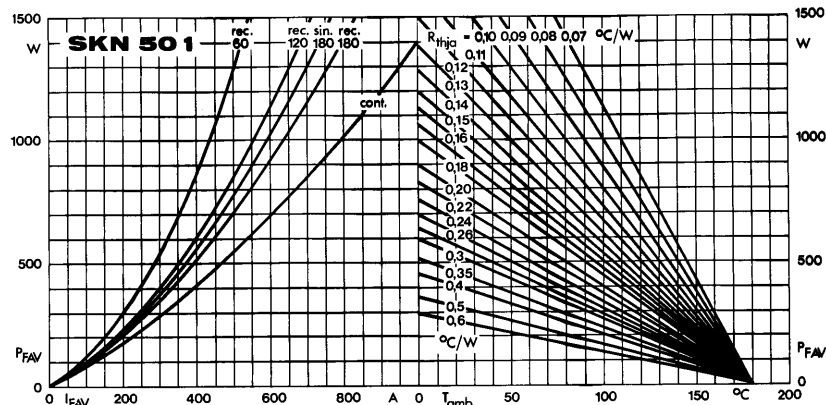


Fig. 2 b Power dissipation vs. forward current and ambient temperature

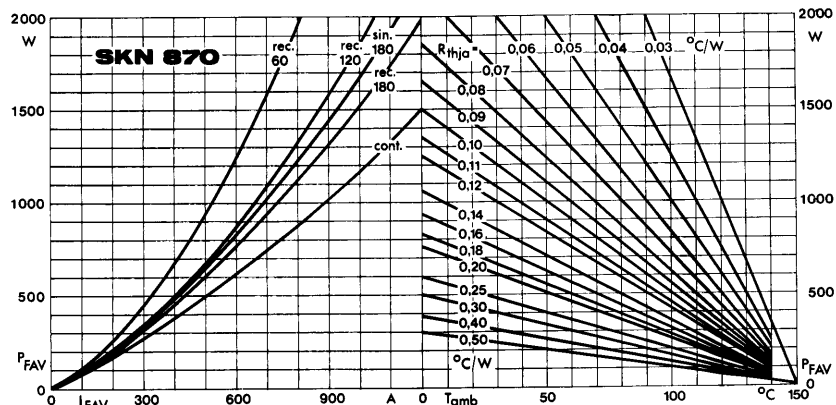


Fig. 2 c Power dissipation vs. forward current and ambient temperature

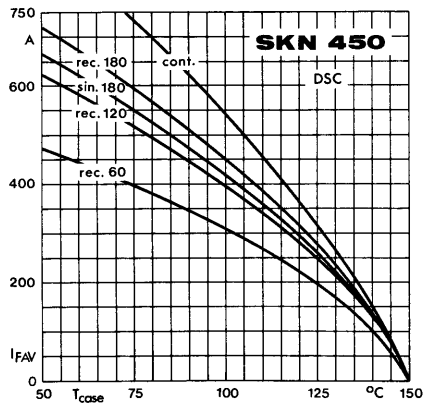


Fig. 3 a Rated forward current vs. case temperature

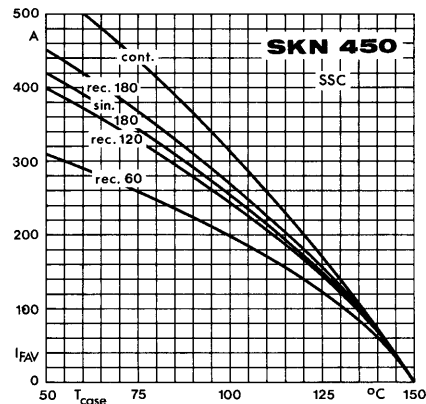


Fig. 3 b Rated forward current vs. case temperature

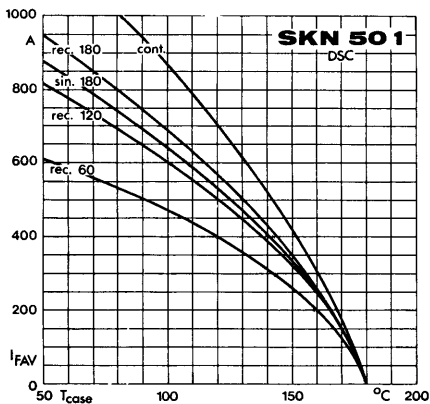


Fig. 3 c Rated forward current vs. case temperature

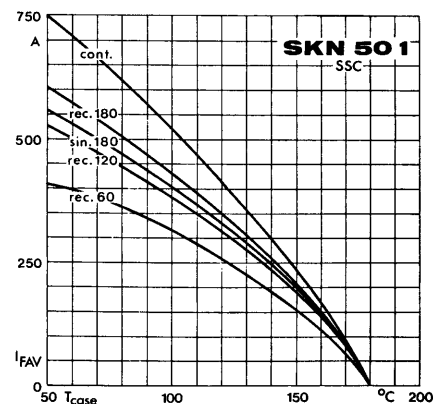


Fig. 3 d Rated forward current vs. case temperature

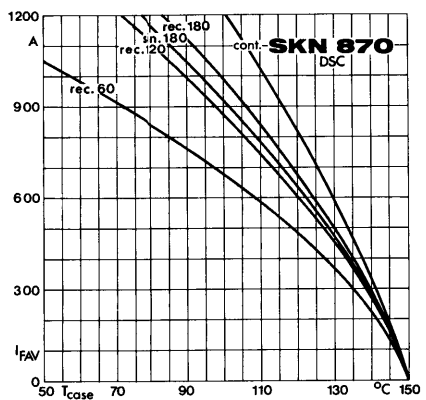


Fig. 3 e Rated forward current vs. case temperature

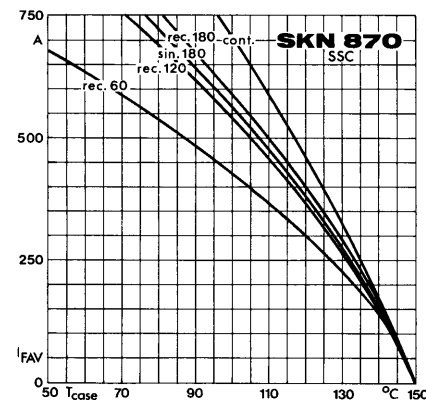


Fig. 3 f Rated forward current vs. case temperature

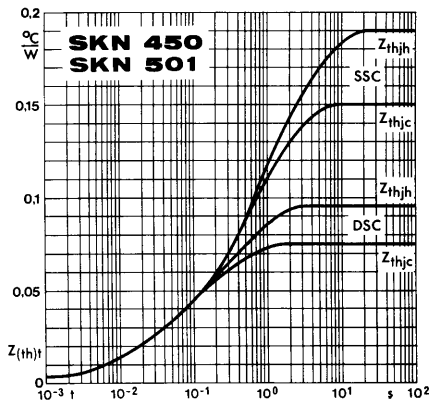


Fig. 5 a Transient thermal impedance vs. time

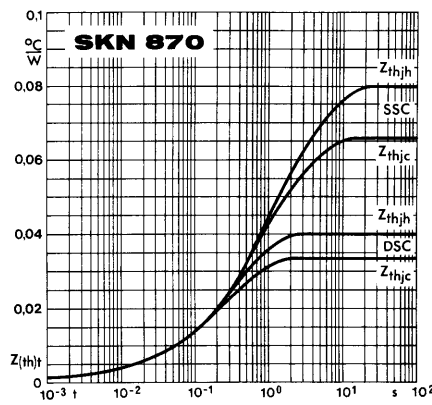


Fig. 5 b Transient thermal impedance vs. time

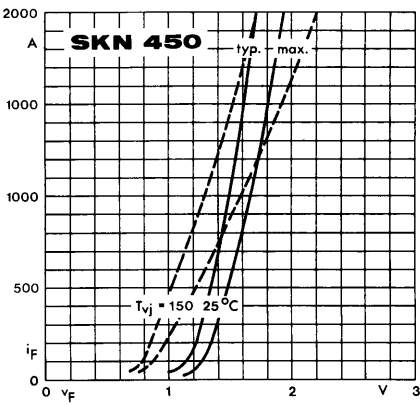


Fig. 6 a Forward characteristics

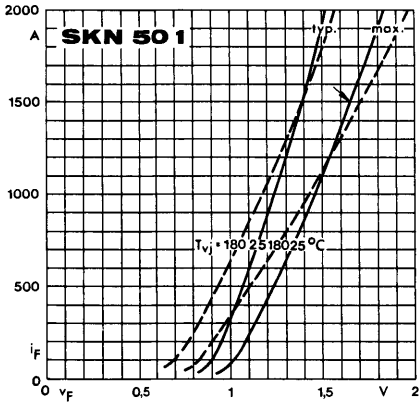


Fig. 6 b Forward characteristics

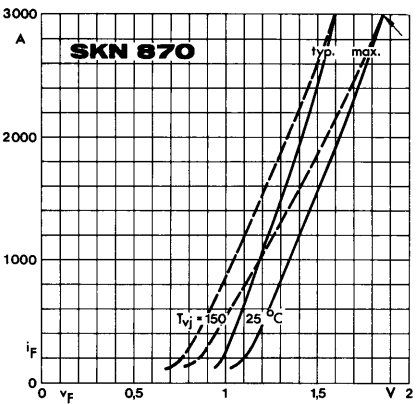


Fig. 6 c Forward characteristics

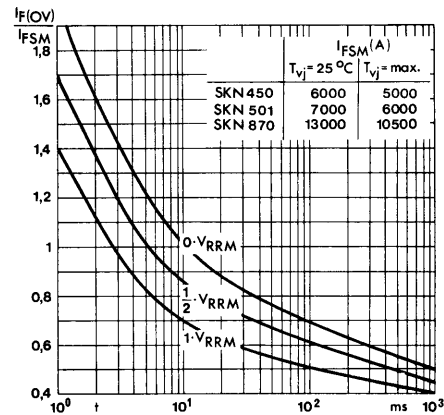


Fig. 7 Surge overload current vs. time