

# SKN 400



## Stud Diode

## Rectifier Diode

### SKN 400

#### Features

- Reverse voltages up to 3000 V
- Hermetic metal case with ceramic insulator with extra long creepage distances
- Threaded stud ISO M24 x 1,5
- SKN: anode to stud

#### Typical Applications\*

- High voltage rectifier diode, especially for traction applications
- Cooling via heatsinks
- Non-controllable and half-controllable rectifiers
- Free-wheeling diodes
- Recommended snubber network:  
RC: 1  $\mu$ F, 20  $\Omega$  ( $P_R = 2$  W),  
 $R_p = 25$  k $\Omega$  ( $P_R = 20$  W)

$V_{RSM}$ V	$V_{RRM}$ V	$I_{FRMS} = 700$ A (maximum value for continuous operation) $I_{FAV} = 400$ A (sin. 180; $T_c = 100$ °C)	
1800	1800	SKN 400/18	
2400	2400	SKN 400/24	
2700	2700	SKN 400/27	
3000	3000	SKN 400/30	

Symbol	Conditions	Values	Units
$I_{FAV}$	sin. 180; $T_c = 85$ (100) °C	445 (400)	A
$I_D$	K 0,55; $T_a = 45$ °C; B2 / B6	310 / 450	A
	K 0,55F; $T_a = 35$ °C; B2 / B6	700 / 1000	A
$I_{FSM}$	$T_{vj} = 25$ °C; 10 ms	9000	A
	$T_{vj} = 160$ °C; 10 ms	7500	A
$i^2t$	$T_{vj} = 25$ °C; 8,3 ... 10 ms	400000	A <sup>2</sup> s
	$T_{vj} = 160$ °C; 8,3 ... 10 ms	280000	A <sup>2</sup> s
$V_F$	$T_{vj} = 25$ °C; $I_F = 1200$ A	max. 1,45	V
$V_{(TO)}$	$T_{vj} = 160$ °C	max. 0,9	V
$r_T$	$T_{vj} = 160$ °C	max. 0,5	m $\Omega$
$I_{RD}$	$T_{vj} = 160$ °C; $V_{RD} = V_{RRM}$	max. 60	mA
$Q_{rr}$	$T_{vj} = 160$ °C; $-di_F/dt = 10$ A/ $\mu$ s	400	$\mu$ C
$R_{th(j-c)}$		0,11	K/W
$R_{th(c-s)}$		0,01	K/W
$T_{vj}$		- 40 ... + 160	°C
$T_{stg}$		- 55 ... + 160	°C
$V_{isol}$		-	V~
$M_s$	to heatsink	60	Nm
a		5 * 9,81	m/s <sup>2</sup>
m	approx.	500	g
Case		E 17	



SKN

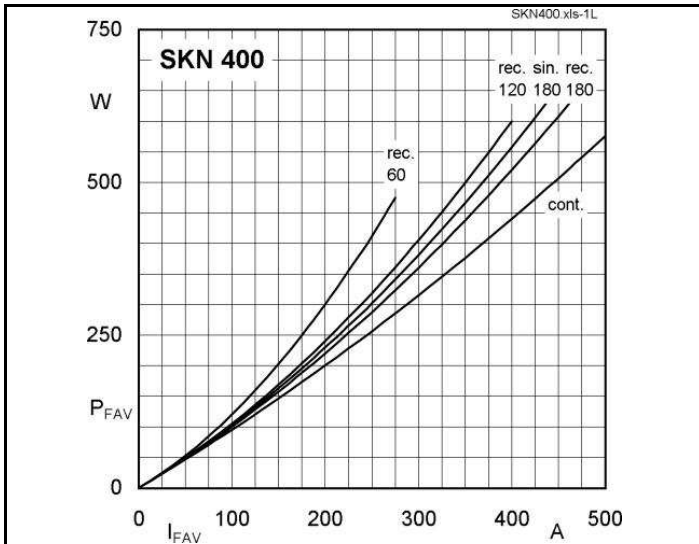


Fig. 1L Power dissipation vs. forward current

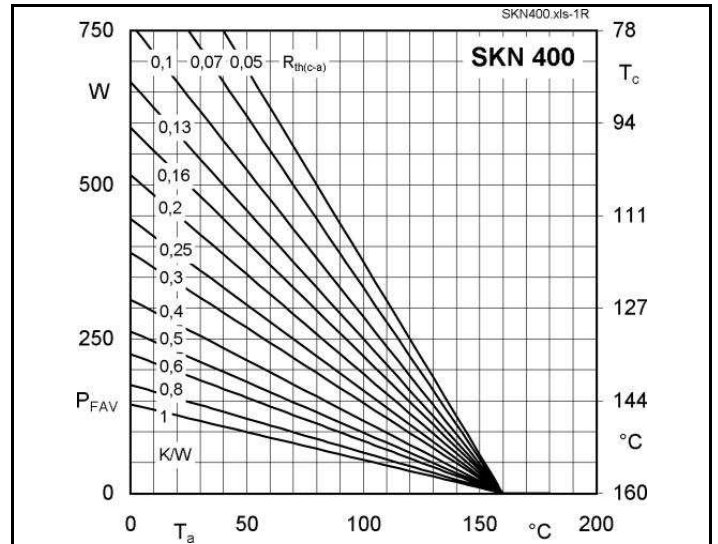


Fig. 1R Power dissipation vs. ambient temperature

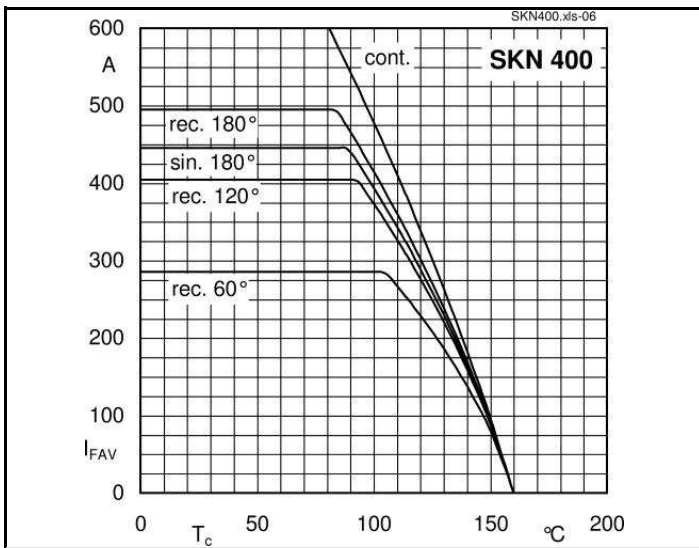


Fig. 2 Forward current vs. case temperature

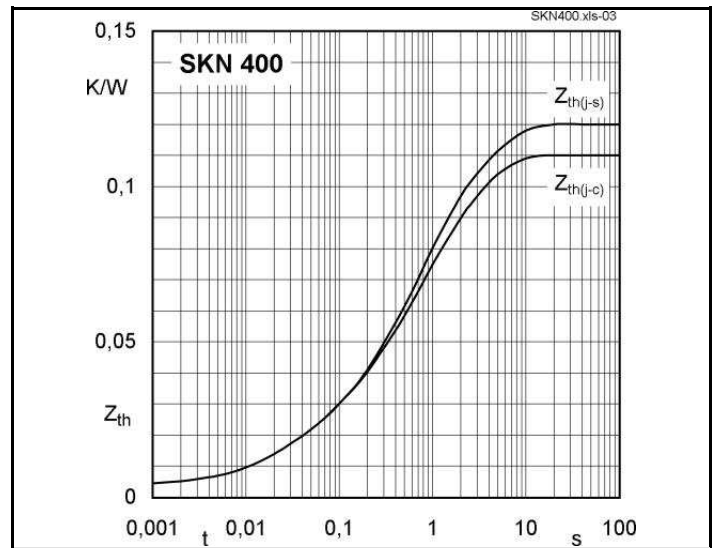


Fig. 4 Transient thermal impedance vs. time

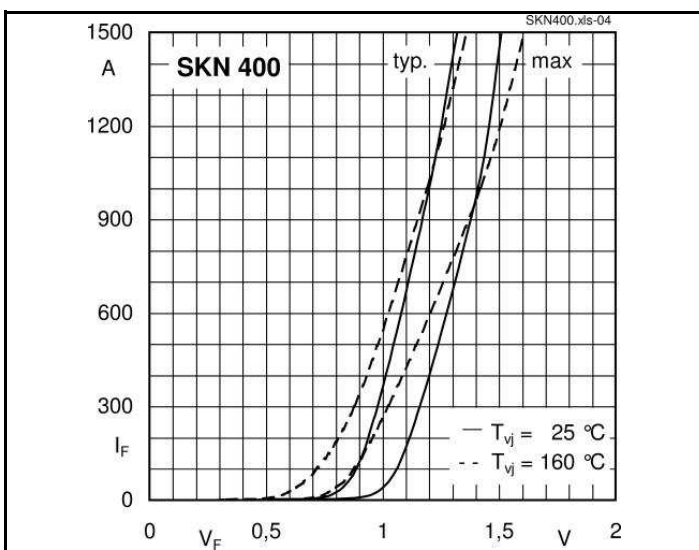


Fig. 5 Forward characteristics

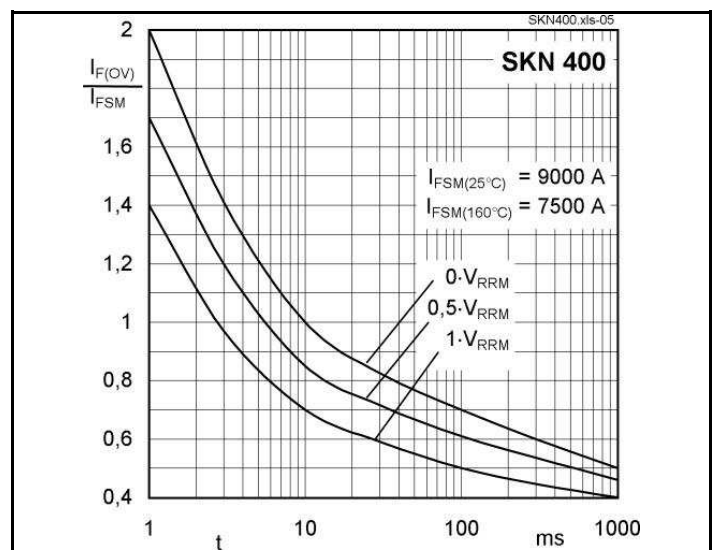
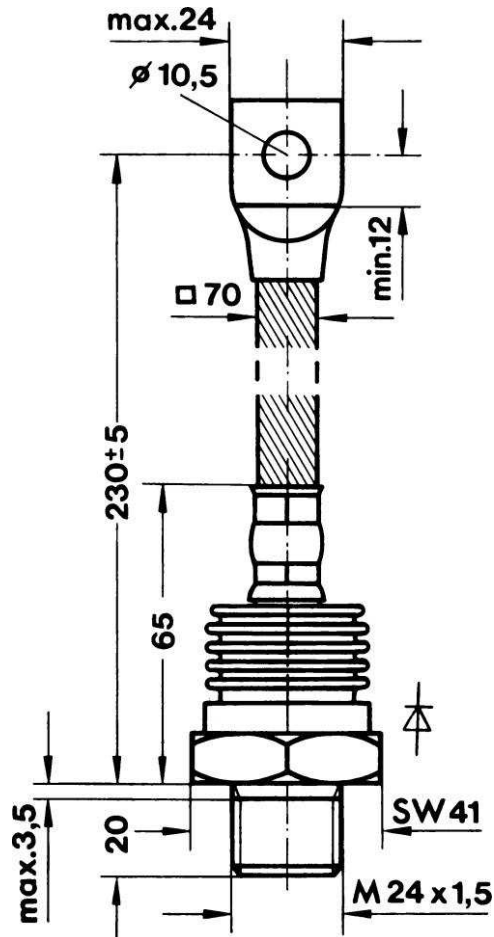


Fig. 6 Surge overload current vs. time

Dimensions in mm



Case E 17 (IEC 60191: A 22 B)

\* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.