

## Rectifier Diodes

SKN 45 SKR 45  
SKN 70 SKR 70  
SKN 71 SKR 71

| V <sub>SRM</sub><br>V <sub>RRM</sub> | I <sub>FRMS</sub> (maximum values for continuous operation)                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                                      | 80 A                                                                              |                                                                                   |                                                                                   | 150 A                                                                             |                                                                                   |                                                                                   |
|                                      | I <sub>FAV</sub> (sin. 180; T <sub>case</sub> = . . .)                            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|                                      | 50 A (118 °C)                                                                     |                                                                                   |                                                                                   | 95 A (100 °C)                                                                     |                                                                                   |                                                                                   |
| V                                    |  |  |  |  |  |  |
| 200                                  | SKN45/02                                                                          | SKR45/02                                                                          | SKN70/02                                                                          | SKR70/02                                                                          | SKN71/02*                                                                         | SKR71/02*                                                                         |
| 400                                  | SKN45/04                                                                          | SKR45/04                                                                          | SKN70/04                                                                          | SKR70/04                                                                          | SKN71/04*                                                                         | SKR71/04*                                                                         |
| 800                                  | SKN45/08                                                                          | SKR45/08                                                                          | SKN70/08                                                                          | SKR70/08                                                                          | SKN71/08*                                                                         | SKR71/08*                                                                         |
| 1200                                 | SKN45/12                                                                          | SKR45/12                                                                          | SKN70/12                                                                          | SKR70/12                                                                          | SKN71/12*                                                                         | SKR71/12*                                                                         |
| 1400                                 | SKN45/14                                                                          | SKR45/14                                                                          | SKN70/14                                                                          | SKR70/14                                                                          | SKN71/14                                                                          | SKR71/14*                                                                         |
| 1600                                 | SKN45/16                                                                          | SKR45/16                                                                          | SKN70/16                                                                          | SKR70/16                                                                          | SKN71/16*                                                                         | SKR71/16*                                                                         |

| Symbol            | Conditions                                                                                                                | SKN 45<br>SKR 45                                                          | SKN 70<br>SKR 70        | SKN 71<br>SKR 71 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------|------------------|
| I <sub>FAV</sub>  | sin. 180; T <sub>case</sub> = 100 °C<br>= 118 °C<br>= 125 °C                                                              | 50 A<br>45 A                                                              | 95 A<br>70 A            |                  |
| I <sub>FSM</sub>  | T <sub>vj</sub> = 25 °C; 10 ms                                                                                            | 700 A                                                                     | 1150 A                  |                  |
| i <sup>2</sup> t  | T <sub>vj</sub> = 180 °C; 10 ms                                                                                           | 600 A                                                                     | 1000 A                  |                  |
|                   | T <sub>vj</sub> = 25 °C; 8,3 ... 10 ms                                                                                    | 2500 A <sup>2</sup> s                                                     | 6600 A <sup>2</sup> s   |                  |
|                   | T <sub>vj</sub> = 180 °C; 8,3 ... 10 ms                                                                                   | 1800 A <sup>2</sup> s                                                     | 5000 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. 70 μC                                                                | typ. 70 μC              |                  |
| I <sub>R</sub>    | T <sub>vj</sub> = 25 °C; V <sub>R</sub> = V <sub>RRM</sub><br>T <sub>vj</sub> = 180 °C; V <sub>R</sub> = V <sub>RRM</sub> | 0,6 mA<br>10 mA                                                           | 0,6 mA<br>10 mA         |                  |
| V <sub>F</sub>    | T <sub>vj</sub> = 25 °C; (I <sub>F</sub> = . . .); max.                                                                   | 1,6 V (150 A)                                                             | 1,5 V (200 A)           |                  |
| V <sub>(TO)</sub> | T <sub>vj</sub> = 180 °C                                                                                                  | 0,85 V                                                                    | 0,85 V                  |                  |
| r <sub>T</sub>    | T <sub>vj</sub> = 180 °C                                                                                                  | 5 mΩ                                                                      | 3 mΩ                    |                  |
| R <sub>thjc</sub> |                                                                                                                           | 0,85 °C/W                                                                 | 0,55 °C/W               |                  |
| R <sub>thch</sub> |                                                                                                                           | 0,25 °C/W                                                                 | 0,2 °C/W                |                  |
| T <sub>vj</sub>   |                                                                                                                           | - 40 ... + 180 °C                                                         |                         |                  |
| T <sub>stg</sub>  |                                                                                                                           | - 55 ... + 180 °C                                                         |                         |                  |
| M                 | M 8   SI units/<br>1/4-28 UNF 2 A   US units                                                                              | 4 Nm/35 lb. in.<br>2,5 Nm/22 lb. in.<br>5 · 9,81 m/s <sup>2</sup><br>30 g |                         |                  |
| a                 |                                                                                                                           |                                                                           |                         |                  |
| w                 | approx.                                                                                                                   |                                                                           |                         |                  |
| RC                | (P <sub>R</sub> = . . .)                                                                                                  | 0,1 μ + 100 Ω<br>(1 W)                                                    | 0,1 μF + 100 Ω<br>(2 W) |                  |
| R <sub>p</sub>    | P <sub>R</sub> = 6 W                                                                                                      | 80 kΩ                                                                     | 80 kΩ                   |                  |
| Case              |                                                                                                                           | E 12                                                                      | E 12                    | E 11             |



### Features

- Reverse voltages up to 1600 V
- Hermetic metal cases with glass insulators
- Threaded studs ISO M8 (SKN/R 71 also 1/4-28 UNF)
- SKN: anode to stud  
SKR: cathode to stud

### Typical Applications

- All-purpose mean power rectifier diodes
- Cooling via heatsinks
- Non-controllable and half-controllable rectifiers
- Free-wheeling diodes

\* available with UNF thread 1/4-28 UNF 2 A; e.g. SKN 71/02 UNF

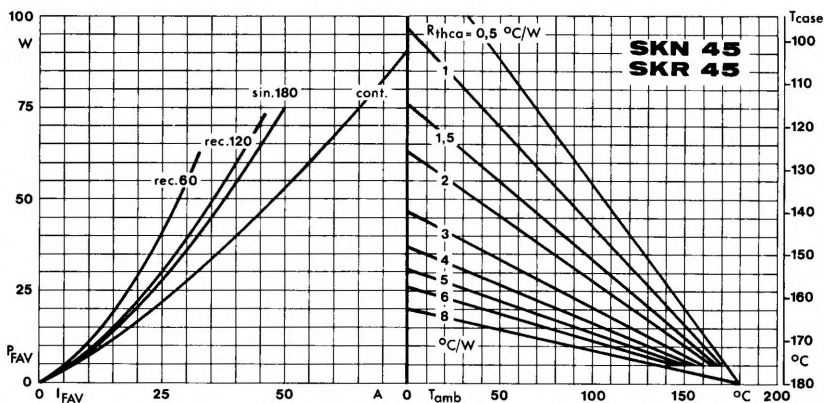


Fig. 1 a Power dissipation vs. forward current and case temperature

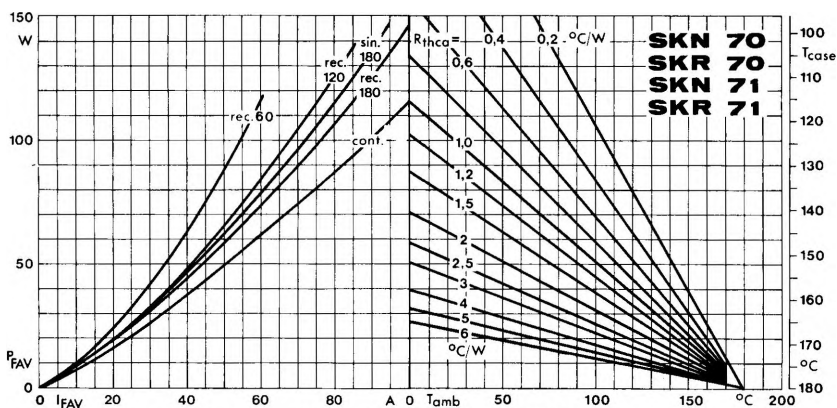


Fig. 1 b Power dissipation vs. forward current and case temperature

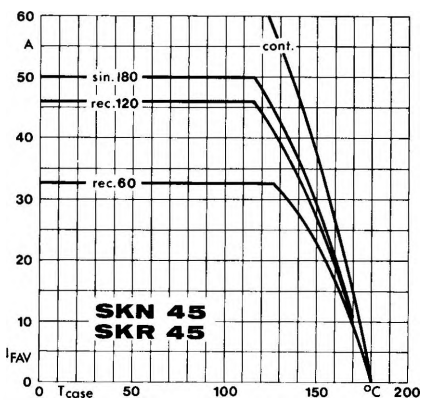


Fig. 3 a Rated forward current vs. case temperature

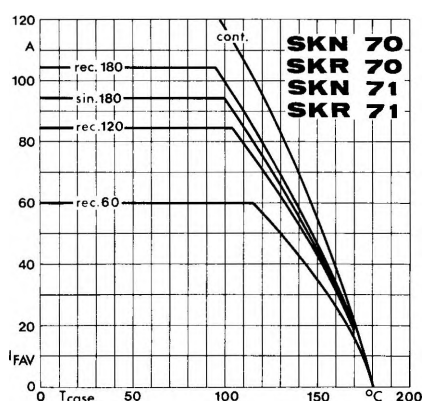


Fig. 3 b Rated forward current vs. case temperature

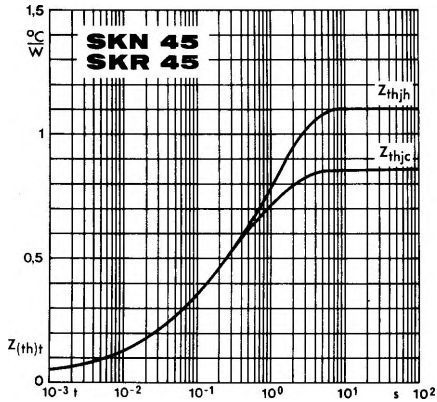


Fig. 5 a Transient thermal impedance vs. time

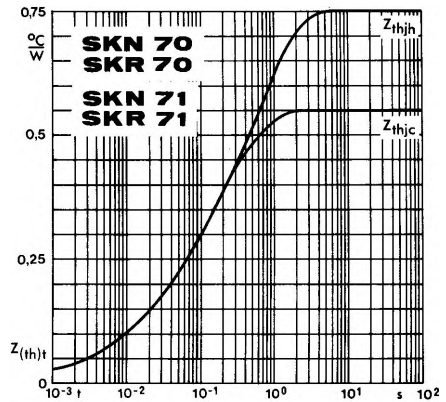


Fig. 5 b Transient thermal impedance vs. time

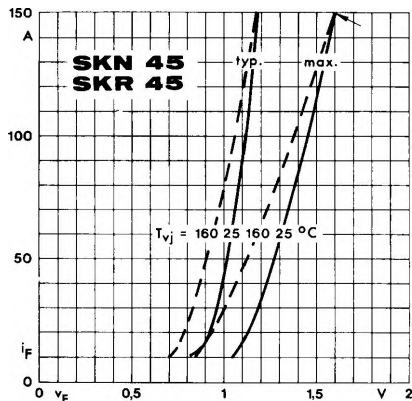


Fig. 6 a Forward characteristics

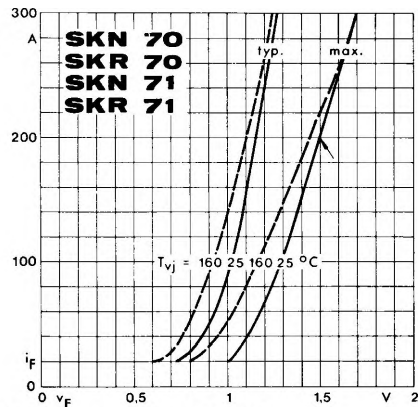


Fig. 6 b Forward characteristics

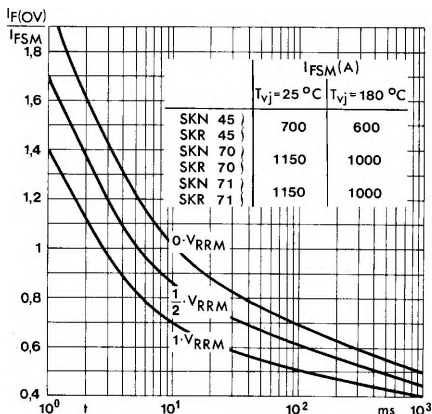
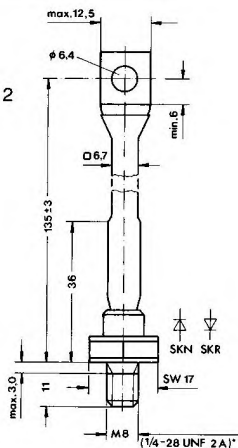


Fig. 7 Surge overload current vs. time

**SKN 45, SKR 45**  
**SKN 70, SKR 70**

Case E 12

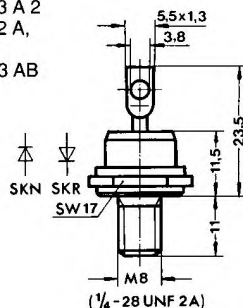
IEC: A 16 U; A 17 M B 2  
DIN 41 886: 103 A 2  
BS 3934: SO-32 A,  
SO-32 B



**SKN 71**  
**SKR 71**

Case E 11

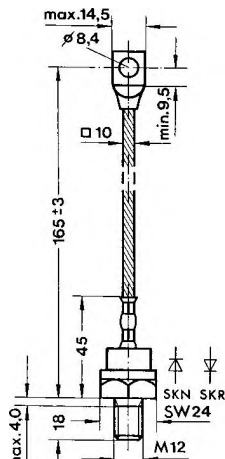
IEC: A 16 U; A 17 M B 2  
DIN 41 886: 103 A 2  
BS 3934: SO-32 A,  
SO-32 B  
JEDEC: DO-203 AB  
(DO-5)



**SKN 100**  
**SKR 100**

Case E 13

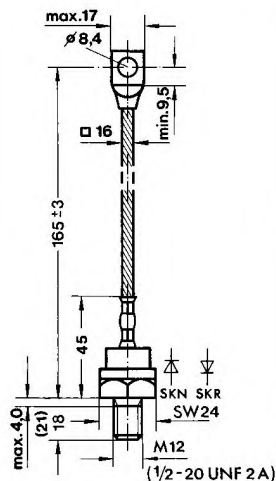
IEC: A 9 MA<sup>1)</sup>  
DIN 41 887: 105 B 2<sup>1)</sup>  
BS 3934: SO-29 B  
JEDEC: DO-205 AC



**SKN 130**  
**SKR 130**

Case E 14

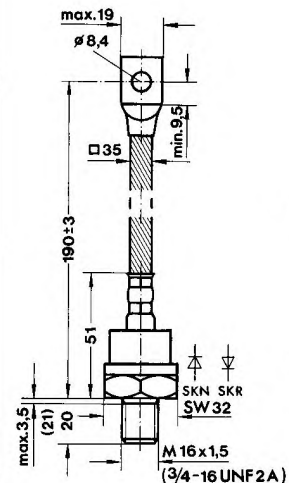
IEC: A 9 MA<sup>1)</sup>  
DIN 41 887: 105 B 2<sup>1)</sup>  
BS 3934: SO-29 B  
JEDEC: DO-205 AC  
(DO-30)<sup>2)</sup>



**SKN 240**  
**SKR 240**

Case E 15

IEC: A 15 M  
DIN 41 887: 106 B 2  
BS 3934: SO-42  
JEDEC: DO-205 AB  
(DO-9)



<sup>1)</sup> modified

<sup>2)</sup> available with thread 1/2-20 UNF 2 A or 3/8-28 UNF 2 A

Dimensions in mm