

## Rectifier Diodes

SKN 100 SKR 100  
SKN 130 SKR 130  
SKN 240 SKR 240

| V <sub>VRSM</sub><br>V <sub>VRSM</sub> | I <sub>FRMS</sub> (maximum values for continuous operation)                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                                        | 200 A                                                                             |                                                                                   | 260 A                                                                             |                                                                                   | 500 A                                                                             |                                                                                   |
|                                        | I <sub>FAV</sub> (sin. 180; T <sub>case</sub> = 100 °C)                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|                                        | 125 A                                                                             |                                                                                   | 165 A                                                                             |                                                                                   | 320 A                                                                             |                                                                                   |
| V                                      |  |  |  |  |  |  |
|                                        | SKN                                                                               | SKR                                                                               | SKN                                                                               | SKR                                                                               | SKN                                                                               | SKR                                                                               |
| 200                                    | 100/02                                                                            | 100/02                                                                            | 130/02                                                                            | 130/02*                                                                           | 240/02                                                                            | 240/02*                                                                           |
| 400                                    | 100/04                                                                            | 100/04                                                                            | 130/04                                                                            | 130/04*                                                                           | 240/04                                                                            | 240/04*                                                                           |
| 800                                    | 100/08                                                                            | 100/08                                                                            | 130/08                                                                            | 130/08*                                                                           | 240/08                                                                            | 240/08*                                                                           |
| 1200                                   | 100/12                                                                            | 100/12                                                                            | 130/12                                                                            | 130/12*                                                                           | 240/12                                                                            | 240/12*                                                                           |
| 1400                                   | 100/14                                                                            | 100/14                                                                            | 130/14                                                                            | 130/14*                                                                           | 240/14                                                                            | 240/14*                                                                           |
| 1600                                   | 100/16                                                                            | 100/16                                                                            | 130/16                                                                            | 130/16*                                                                           | 240/16                                                                            | 240/16*                                                                           |
| 1800                                   | 100/18+                                                                           | 100/18+                                                                           | 130/18+                                                                           | 130/18+                                                                           | 240/18+                                                                           | 240/18+                                                                           |

| Symbol                      | Conditions                                                                                                                      | SKN 100<br>SKR 100                                 | SKN 130<br>SKR 130                                 | SKN 240<br>SKR 240                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------------------------|
| I <sub>FAV</sub>            | sin. 180;<br>T <sub>case</sub> = 100 °C<br>= 125 °C                                                                             | 125 A<br>100 A                                     | 165 A<br>130 A                                     | 320 A<br>240 A                                       |
| I <sub>FSM</sub>            | T <sub>vj</sub> = 25 °C; 10 ms<br>T <sub>vj</sub> = 180 °C; 10 ms                                                               | 1 750 A<br>1 500 A                                 | 2 500 A<br>2 000 A                                 | 6 000 A<br>5 000 A                                   |
| i <sup>2</sup> <sub>t</sub> | T <sub>vj</sub> = 25 °C   8,3...<br>T <sub>vj</sub> = 180 °C   10 ms                                                            | 15 000 A <sup>2</sup> s<br>11 500 A <sup>2</sup> s | 31 000 A <sup>2</sup> s<br>20 000 A <sup>2</sup> s | 180 000 A <sup>2</sup> s<br>125 000 A <sup>2</sup> s |
| Q <sub>rr</sub>             | T <sub>vj</sub> = 160 °C;<br>- $\frac{di_F}{dt} = 10 \frac{A}{\mu s}$                                                           | typ. 100 μC                                        | typ. 120 μC                                        | typ. 200 μC                                          |
| I <sub>R</sub>              | T <sub>vj</sub> = 25 °C;<br>V <sub>R</sub> = V <sub>RRM</sub><br>T <sub>vj</sub> = 180 °C;<br>V <sub>R</sub> = V <sub>RRM</sub> | 1 mA<br>15 mA                                      | 1 mA<br>22 mA                                      | 2 mA<br>60 mA                                        |
| V <sub>F</sub>              | T <sub>vj</sub> = 25 °C;<br>(I <sub>F</sub> = ...); max.                                                                        | 1,55V (400A)                                       | 1,5V (500A)                                        | 1,4V (750A)                                          |
| V <sub>(TO)</sub>           | T <sub>vj</sub> = 180 °C                                                                                                        | 0,85 V                                             | 0,85 V                                             | 0,85 V                                               |
| r <sub>T</sub>              | T <sub>vj</sub> = 180 °C                                                                                                        | 1,8 mΩ                                             | 1,3 mΩ                                             | 0,6 mΩ                                               |
| R <sub>thjc</sub>           |                                                                                                                                 | 0,45 °C/W                                          | 0,35 °C/W                                          | 0,20 °C/W                                            |
| R <sub>thch</sub>           |                                                                                                                                 | 0,08 °C/W                                          | 0,08 °C/W                                          | 0,03 °C/W                                            |
| T <sub>vj</sub>             |                                                                                                                                 | - 40 ... + 180 °C                                  |                                                    |                                                      |
| T <sub>sig</sub>            |                                                                                                                                 | - 55 ... + 180 °C                                  |                                                    |                                                      |
| M                           | SI units/US units                                                                                                               | 10Nm/90lb.in.                                      | 10Nm/90lb.in.                                      | 30Nm/270lb.in.                                       |
| a                           |                                                                                                                                 | 5 · 9,81 m/s <sup>2</sup>                          | 5 · 9,81 m/s <sup>2</sup>                          | 5 · 9,81 m/s <sup>2</sup>                            |
| w                           | approx.                                                                                                                         | 100 g                                              | 100 g                                              | 250 g                                                |
| RC                          | P <sub>R</sub> = 2 W                                                                                                            | 0,25μF + 50Ω                                       | 0,25μF + 50Ω                                       | 0,5μF + 30Ω                                          |
| R <sub>p</sub>              | P <sub>R</sub> = 20 W                                                                                                           | 50 kΩ                                              | 50 kΩ                                              | 50 kΩ                                                |
| Case                        |                                                                                                                                 | E 13                                               | E 14                                               | E 15                                                 |



### Features

- Reverse voltages up to 1600 V
- Hermetic metal cases with glass insulators
- Threaded studs ISO M 12, M16 x 1,5 (SKR 130 also 1/2–20 UNF or 3/8–24 UNF, SKR 240 also 3/4–16 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 in limited quantities
- available with UNF threads:  
3/8–24 UNF 2 A (e.g. SKR 130/02 UNF 3/8) or  
1/2–20 UNF 2 A  
(e.g. SKR 130/02 UNF),  
SKR 240/02 UNF with  
3/4–16 UNF 2 A thread

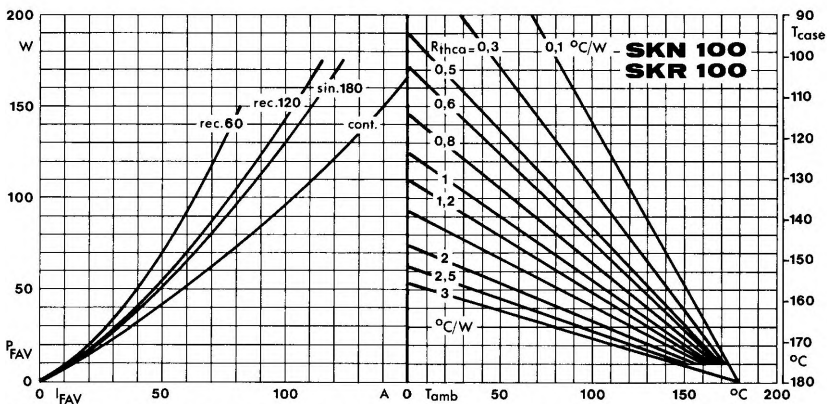


Fig. 1 a Power dissipation vs. forward current and case temperature

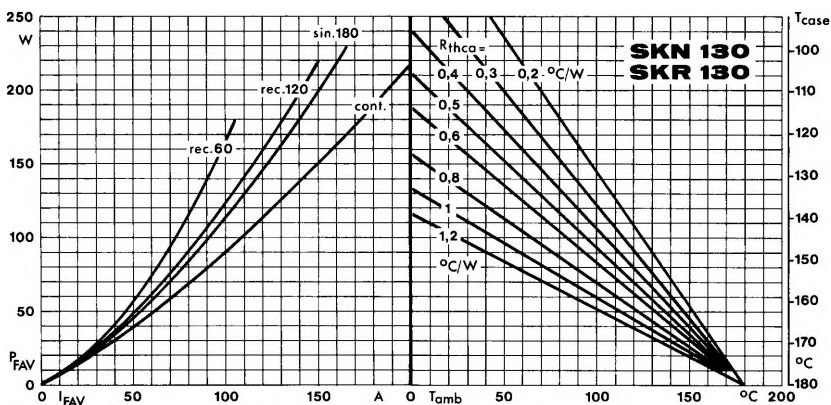


Fig. 1 b Power dissipation vs. forward current and case temperature

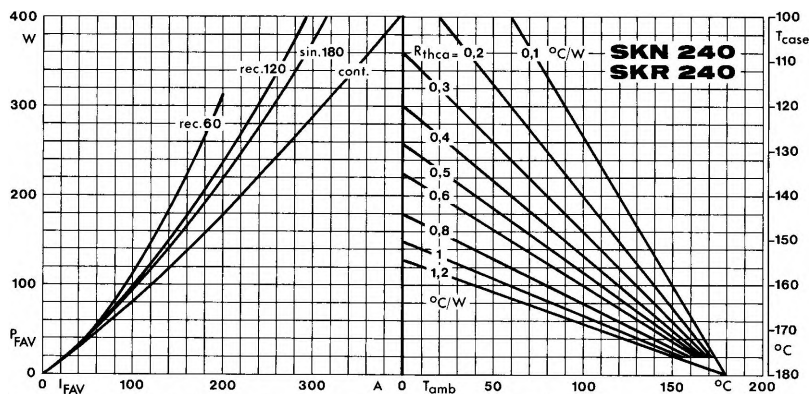


Fig. 1 c Power dissipation vs. forward current and case temperature

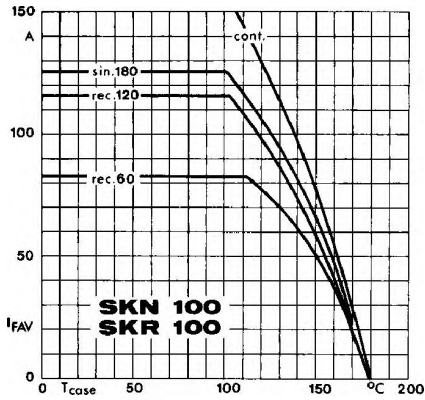


Fig. 3 a Rated forward current vs. case temperature

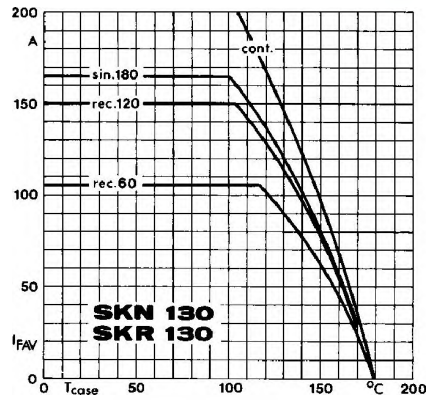


Fig. 3 b Rated forward current vs. case temperature

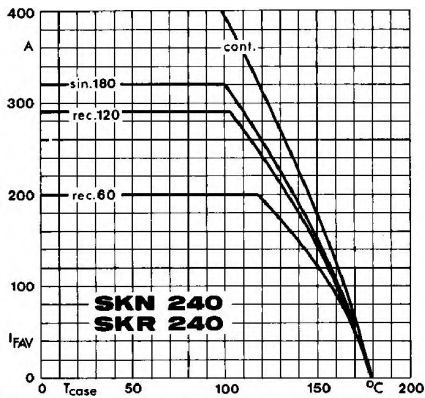


Fig. 3 c Rated forward current vs. case temperature

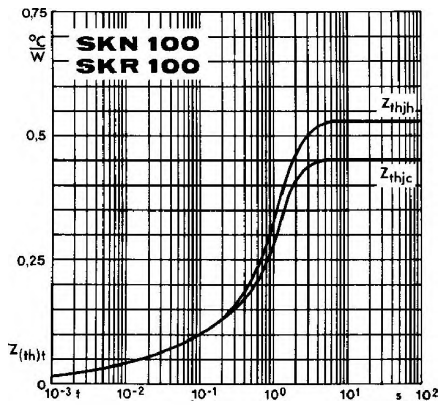


Fig. 5 a Transient thermal impedance vs. time

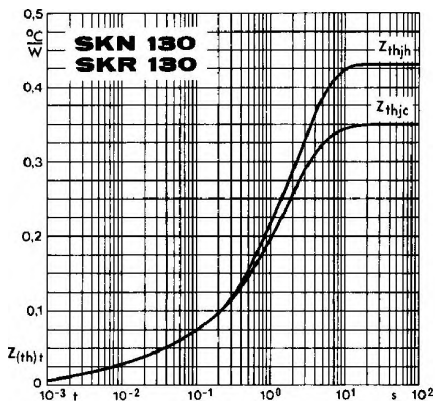


Fig. 5 b Transient thermal impedance vs. time

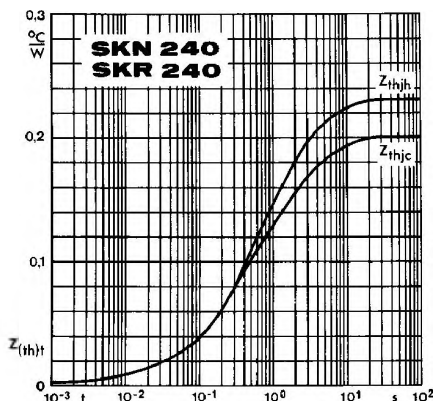


Fig. 5 c Transient thermal impedance vs. time

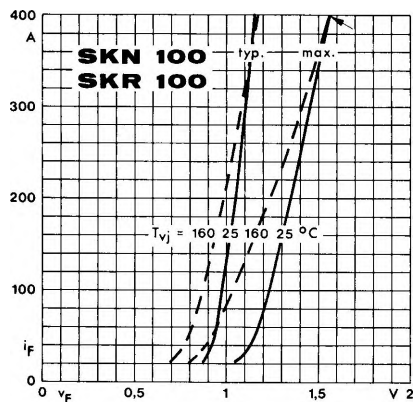


Fig. 6 a Forward characteristics

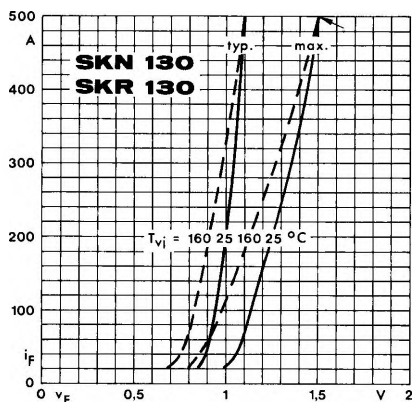


Fig. 6 b Forward characteristics

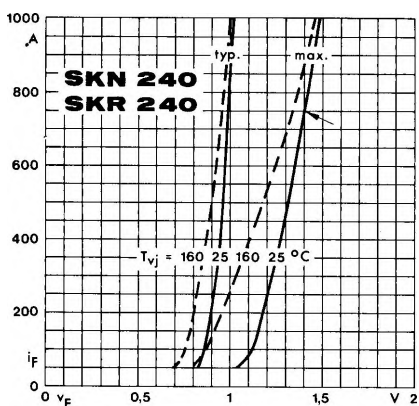


Fig. 6 c Forward characteristics

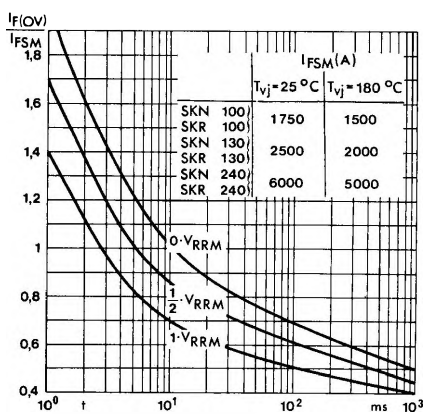


Fig. 7 Surge overload current vs. time