



High-end Power Semiconductor Manufacturer

## Fast Switching Thyristor

### Features

- High current rating
- Excellent dynamic characteristics
- Superior surge capabilities
- Standard package
- Metric Device version available

### Typical Applications

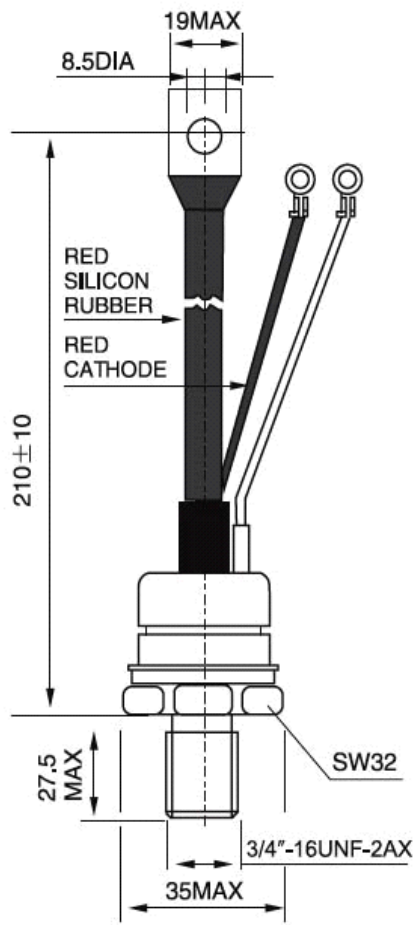
- Phase control applications in converters
- Lighting circuits
- Battery charges
- Regulated power supplies and temperature and speed control circuit
- Can be supplied to meet stringent military, aerospace and other high-reliability requirements
- Power supplier & motor controls



### ELECTRICAL CHARACTERISTICS

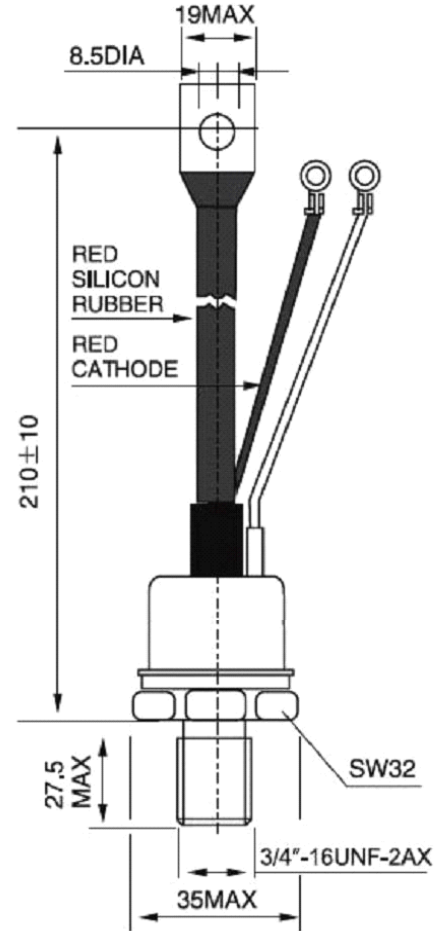
| Symbol       | Parameter                          | Conditions                   | KKS150      | KKS200      | KKS250      | Unit                      |
|--------------|------------------------------------|------------------------------|-------------|-------------|-------------|---------------------------|
| $I_{T(AV)}$  | Average on-state current           | $T_c=55^\circ\text{C}$       | 150         | 200         | 250         | A                         |
| $I_{T(RMS)}$ | RMS on-state current               | $T_c=55^\circ\text{C}$       | 250         | 320         | 400         | A                         |
| $I_{TSM}$    | Surge on current                   | $T_c=25^\circ\text{C}$ 10ms  | 3900        | 4900        | 7000        | A                         |
| $I^2t$       | $I^2t$ value                       | $T_c=25^\circ\text{C}$ 10ms  | 9000        | 120000      | 245000      | A                         |
| $V_{RRM}$    | Repetitive peak reverse voltage    | $T_c=140^\circ\text{C}$      | 400-1800    |             |             | V                         |
| $I_{RRM}$    | Repetitive peak reverse current    | $T_c=140^\circ\text{C}$      | $\leq 25.0$ | $\leq 25.0$ | $\leq 25.0$ | mA                        |
| $V_{TM}$     | On-state voltage                   | $T_c=25^\circ\text{C}$       | 1.85        | 1.9         | 1.85        | V                         |
| $I_{TM}$     | On-state Current                   | $T_c=25^\circ\text{C}$       | 450         | 600         | 750         | A                         |
| $I_{GT}$     | Gate Trigger Current               | $T_c=25^\circ\text{C}$       | 50-200      |             |             | mA                        |
| $V_{GT}$     | Gate Trigger Voltage               | $T_c=25^\circ\text{C}$       | $\leq 2.5$  |             |             | V                         |
| $V_{GD}$     | Max DC gate voltage not to trigger | $T_j=125^\circ\text{C}$ , DC | 0.25        |             |             | V                         |
| $I_H$        | Holding Current                    | $T_c=25^\circ\text{C}$       | $\leq 400$  |             |             | mA                        |
| $dv/dt$      | Rate Of Rise Of On-State Voltage   | $T_c=25^\circ\text{C}$       | $\geq 800$  |             |             | V/us                      |
| $di/dt$      | Rate Of Rise Of On-State Current   | $T_c=25^\circ\text{C}$       | $\geq 100$  |             |             | A/us                      |
| $R_{j-c}$    | Peak gate forward voltage          |                              | $\leq 0.4$  | $\leq 0.3$  | $\leq 0.25$ | $^\circ\text{C}/\text{W}$ |
| $T_q$        | Turn off time                      | $T_c=25^\circ\text{C}$       | 15~30       |             |             | us                        |
| $T_j$        | Junction temperature               |                              | -40~+125    |             |             | $^\circ\text{C}$          |
| $T_{stg}$    | Storage temperature                |                              | -40~+125    |             |             | $^\circ\text{C}$          |
| MT           | Mounting torque                    |                              | $\leq 25.0$ |             |             | N·m                       |
| Wt           | Weight                             | Typical value                | 280         | 280         | 300         | g                         |

**Outline table**  
(Dimension in mm)



\*FOR METRIC DEVICES:  
M20×1.5/M16×1.5-LENGTH21 MAX

T4 (ceramic)



\*FOR METRIC DEVICES:  
M20×1.5/M16×1.5-LENGTH21 MAX

T4 (Glass-Metal)

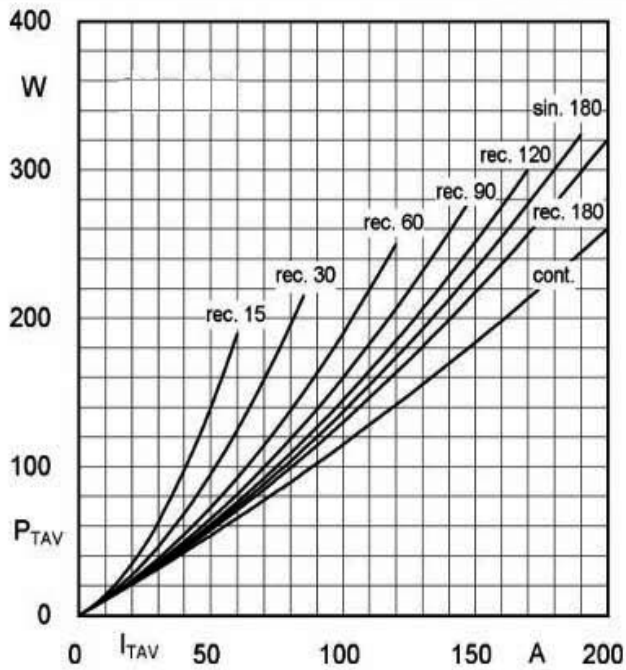


Fig. 1L Power dissipation vs. on-state current

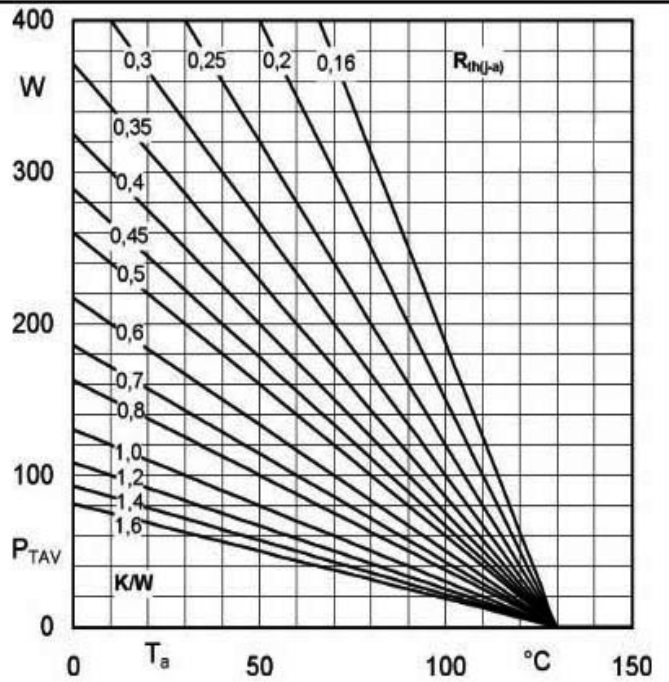


Fig. 1R Power dissipation vs. ambient temperature

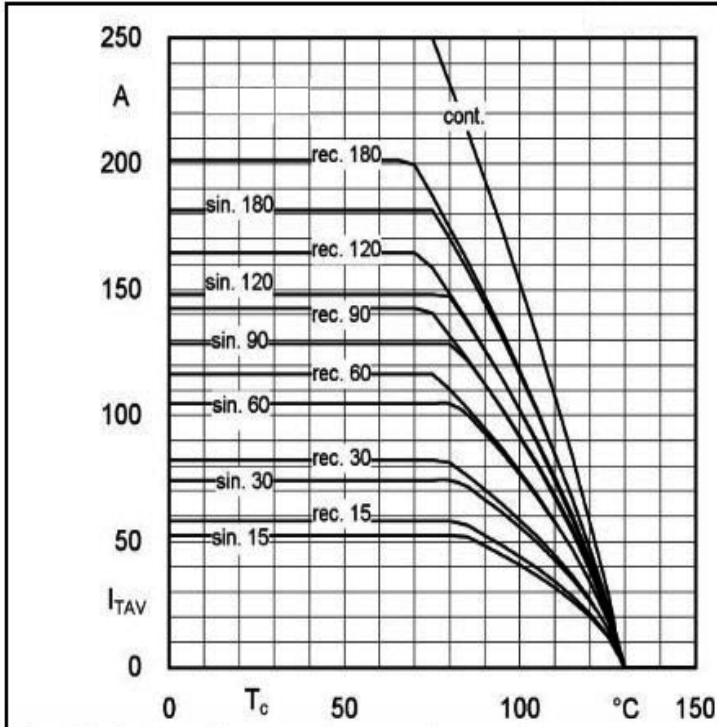


Fig. 2 Rated on-state current vs. case temperature

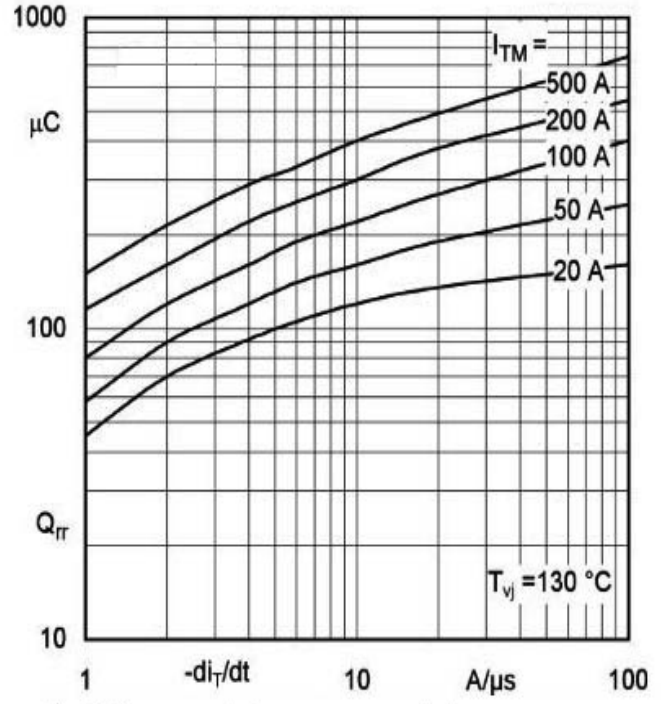


Fig. 3 Recovered charge vs. current decrease

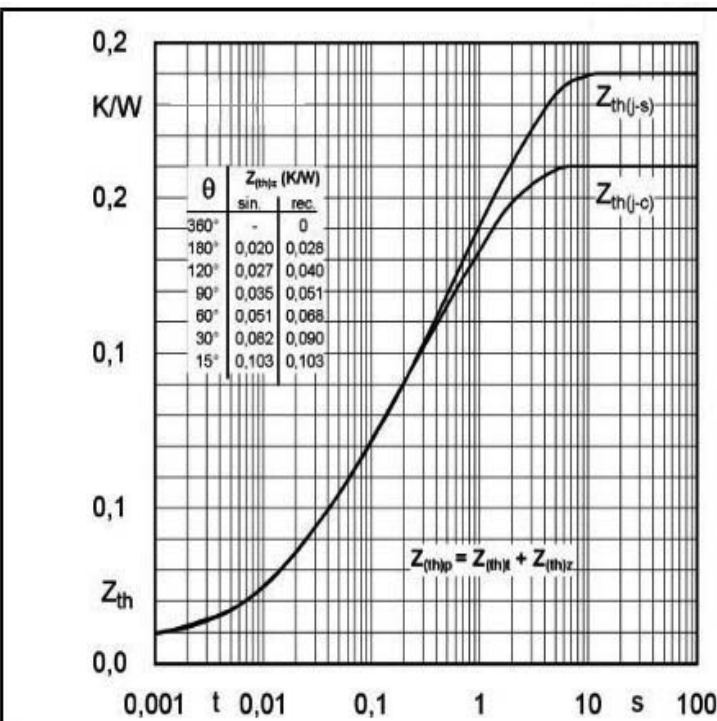


Fig. 4 Transient thermal impedance vs. time

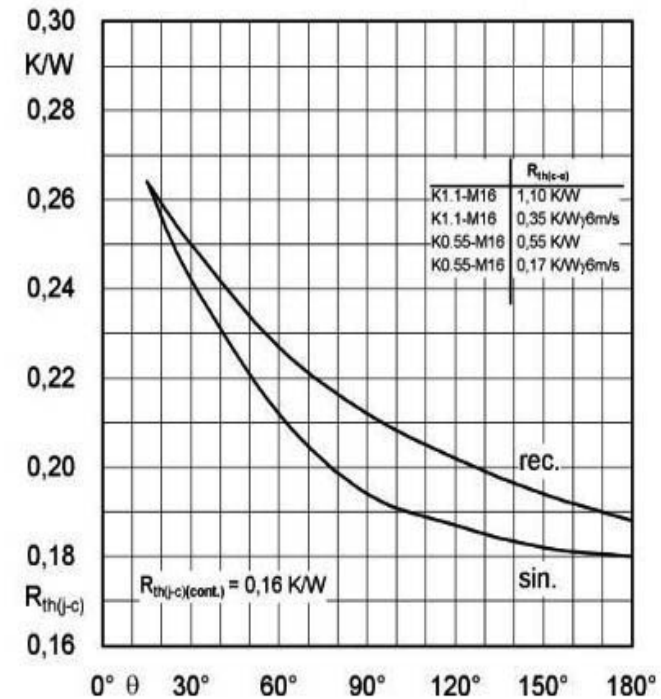


Fig. 5 Thermal resistance vs. conduction angle

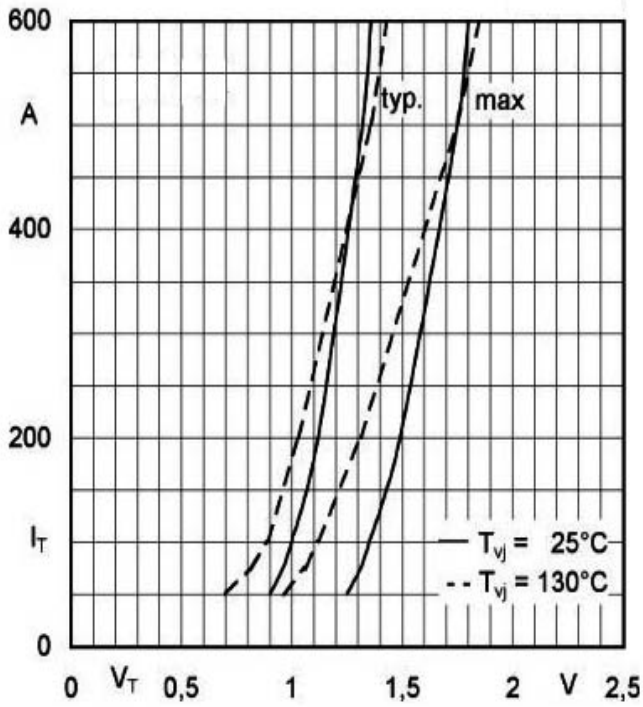


Fig. 6 On-state characteristics

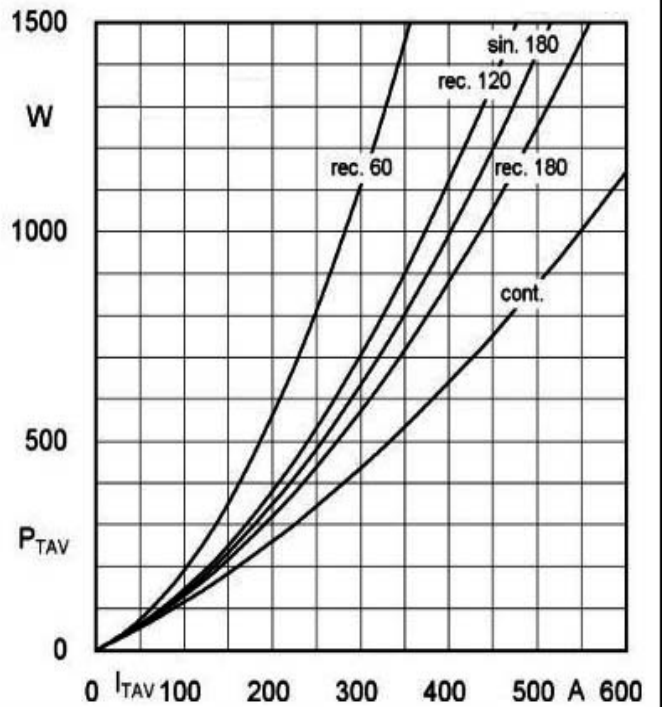


Fig. 7 Power dissipation vs. on-state current

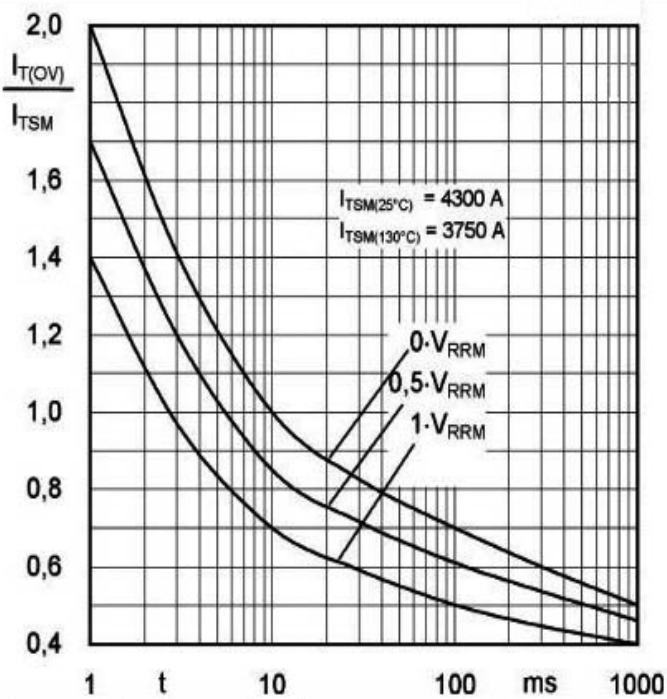


Fig. 8 Surge overload current vs. time