

High Voltage Rectifiers

$V_{RRM} = 24000\text{ V}$
 $I_{F(AV)M} = 2.0\text{ A}$

| V_{RRM} V | Standard Types | Power Designation |
|----------------|----------------|----------------------|
| 24000 | UGE 3126 AY4 | Si-E 9000 / 4000-0.7 |



| Symbol | Conditions | Ratings | |
|------------------------------|--|-----------------|------------------|
| $I_{F(RMS)}$ $I_{F(AV)M}$ | air self cooling, $T_{amb} = 45^\circ\text{C}$ - without cooling plate - with colling plate | 5 0.8 1.0 | A A A |
| | forced air cooling: $v = 3\text{ m/s}$, $T_{amb} = 35^\circ\text{C}$ - without cooling plate - with cooling plate | 1.4 1.7 | A A |
| | oil cooling, $T_{amb} = 35^\circ\text{C}$ - without cooling plate - with cooling plate | 2.0 2.0 | A A |
| P_{RSM} | $T_{(vj)} = 150^\circ\text{C}$; $t_p = 10\ \mu\text{s}$ | 1.6 | kW |
| I_{FSM} | non repetitive, 50 c/s (for 60 c/s add 10%) $T_{(vj)} = 45^\circ\text{C}$; $t_p = 10\text{ ms}$ $T_{(vj)} = 150^\circ\text{C}$; $t_p = 10\text{ ms}$ | 70 60 | A A |
| T_{amb} | | -40...+150 | $^\circ\text{C}$ |
| T_{stg} | | -40...+150 | $^\circ\text{C}$ |
| $T_{(vj)}$ | | 150 | $^\circ\text{C}$ |
| Weight | | 127 | g |

Features

- Hermetically sealed Epoxy
- Use in oil
- Avalanche characteristics

Applications

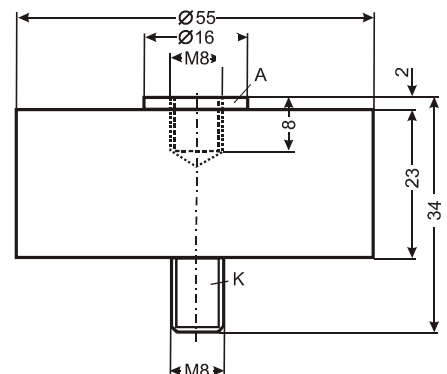
- X-Ray equipment
- Electrostatic dust precipitators
- Electronic beam welding
- Lasers
- Cable test equipment

Advantages

- Simple mounting
- Improved temperature and power cycling
- Reduced protection circuits
- Series and parallel operation

| Symbol | Conditions | Characteristic Values | |
|----------|---|-----------------------|----------------|
| I_R | $T_{(vj)} = 150^\circ\text{C}$; $V_R = V_{RRM}$ | ≤ 1 | mA |
| V_F | $I_F = 3\text{ A}$ $T_{(vj)} = 25^\circ\text{C}$ | 18 | V |
| V_{TO} | $T_{(vj)} = 150^\circ\text{C}$ | 12 | V |
| r_T | $T_{(vj)} = 150^\circ\text{C}$ | 1.8 | Ω |
| a | $f = 50\text{ Hz}$ | 5 x 9,81 | m/s^2 |
| M_d | | 8 | Nm |

Dimensions in mm (1 mm = 0.0394")



Data according to IEC 60747-2
 IXYS reserve the right to change limits, test conditions and dimensions.

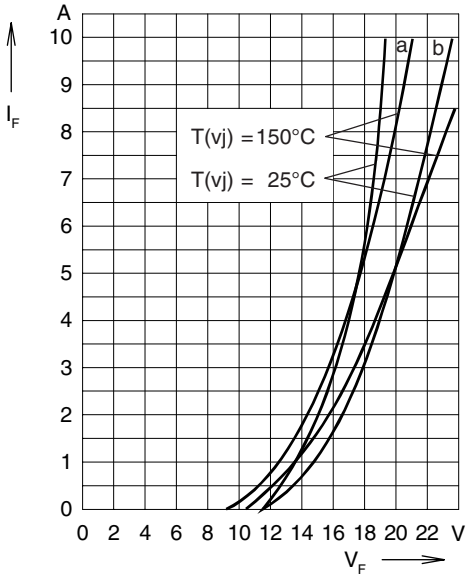


Fig. 1: Forward characteristics
 Instantaneous forward current I_F as a function of instantaneous forward voltage drop V_F for junction temperature $T_{(vj)} = 25^\circ\text{C}$ and $T_{(vj)} = 150^\circ\text{C}$
 a = Mean value characteristic
 b = Limit value characteristic

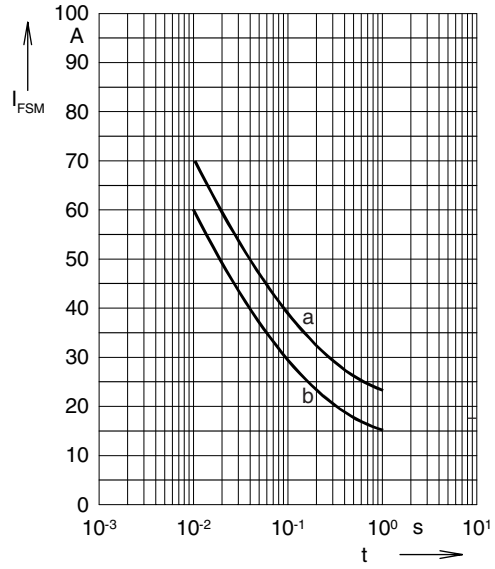


Fig. 2: Characteristics of maximum permissible current
 The curves show the non repetitive peak one cycle surge forward current I_{FSM} as a function of time t and serve for rating protective devices.
 a = Initial state $T_{(vj)} = 45^\circ\text{C}$
 b = Initial state $T_{(vj)} = 150^\circ\text{C}$

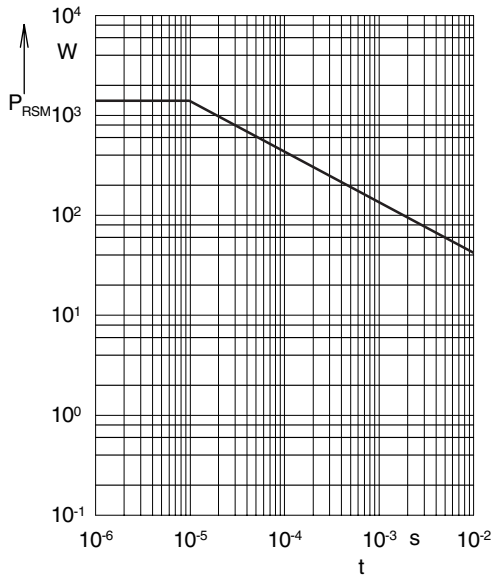


Fig. 3: Power loss
 Non repetitive peak reverse power loss P_{RSM} as a function of time t , $T_{(vj)} = 150^\circ\text{C}$

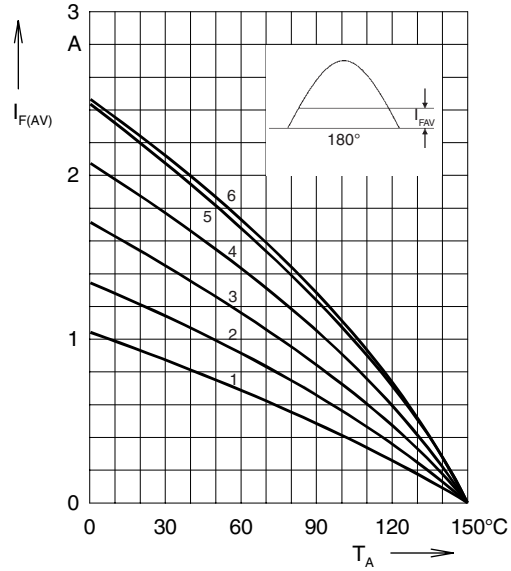


Fig. 4: Load diagramm
 Mean forward current $I_{F(AV)}$ of one module for a sine half wave for various cooling modes as a function of the cooling medium temperature T_{amb} for a resistive load (horizontal mounting).

Cooling modes

- | | | |
|------------------------|---------|---------------|
| 1 = air self cooling | without | cooling plate |
| 2 = air self cooling | with | cooling plate |
| 3 = forced air cooling | without | cooling plate |
| 4 = forced air cooling | with | cooling plate |
| 5 = oil cooling | without | cooling plate |
| 6 = oil cooling | with | cooling plate |