

High Voltage Rectifiers

 $V_{RRM} = 4800\text{ V}$
 $I_{F(AV)M} = 10.2\text{ A}$

| V_{RRM} V | Standard Types | Power Designation |
|----------------|-------------------|-------------------|
| 4800 | UGE 0221 AY4 | Si-E 1750 / 775-4 |



| 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 | 16 3.8 5.4 | A A A |
| | forced air cooling: $v = 3\text{ m/s}$, $T_{amb} = 35^\circ\text{C}$ - without cooling plate - with cooling plate | 7.0 10.2 | A A |
| | oil cooling, $T_{amb} = 35^\circ\text{C}$ - without cooling plate - with cooling plate | 10.2 10.2 | A A |
| P_{RSM} | $T_{(vj)} = 150^\circ\text{C}$; $t_p = 10\ \mu\text{s}$ | 3.4 | kW |
| I_{FSM} | non repetitive, 50 c/s (for 60 c/s add 10%) $T_{(vj)} = 45^\circ\text{C}$; $t_p = 10\text{ ms}$ | 180 | A |
| | $T_{(vj)} = 150^\circ\text{C}$; $t_p = 10\text{ ms}$ | 140 | A |
| T_{amb} | | -40...+150 | $^\circ\text{C}$ |
| T_{stg} | | -40...+150 | $^\circ\text{C}$ |
| $T_{(vj)}$ | | 150 | $^\circ\text{C}$ |
| Weight | | 120 | g |

Features

- Hermetically sealed Epoxy
- Use in oil
- Avalanche characteristics

Applications

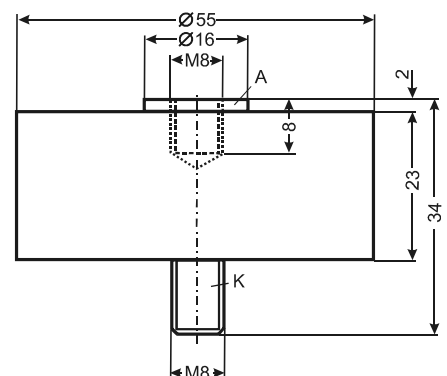
- X-Ray equipment
- Electrostatic dust precipitators
- Electronic beam welding
- Lasers
- Cable test equipment

Advantages

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

| Symbol | Conditions | Characteristic Values | |
|----------|--|-----------------------|------------------|
| I_R | $T_{(vj)} = 150^\circ\text{C}$; $V_R = V_{RRM}$ | ≤ 2 | mA |
| V_F | $I_F = 30\text{ A}$ $T_{(vj)} = 25^\circ\text{C}$ | 4.8 | V |
| V_{TO} | $T_{(vj)} = 150^\circ\text{C}$ | 2.55 | V |
| r_T | $T_{(vj)} = 150^\circ\text{C}$ | 90 | m Ω |
| a | $f = 50\text{ Hz}$ | 5 x 9,81 | m/s ² |
| M_d | | 8 | Nm |

Data according to IEC 60747-2

Dimensions in mm (1 mm = 0.0394")


IXYS reserve the right to change limits, test conditions and dimensions.

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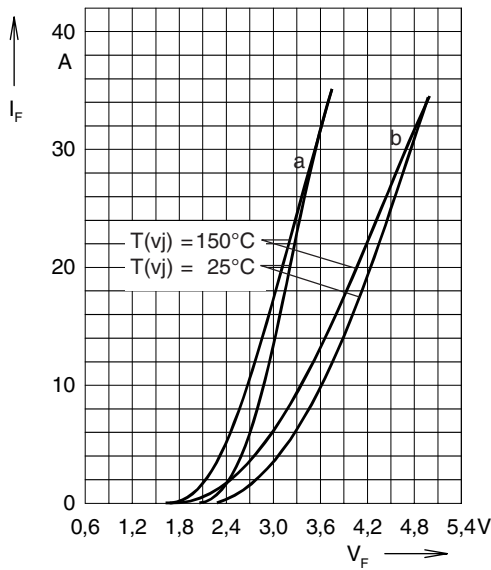


Fig. 1: Forward characteristics
 Instantaneous forward current I_F as a function of instantaneous forward voltage drop V_F for junction temperature $T_{(vj)} = 25^\circ\text{C}$ and $T_{(vj)} = 150^\circ\text{C}$
 a = Mean value characteristic
 b = Limit value characteristic

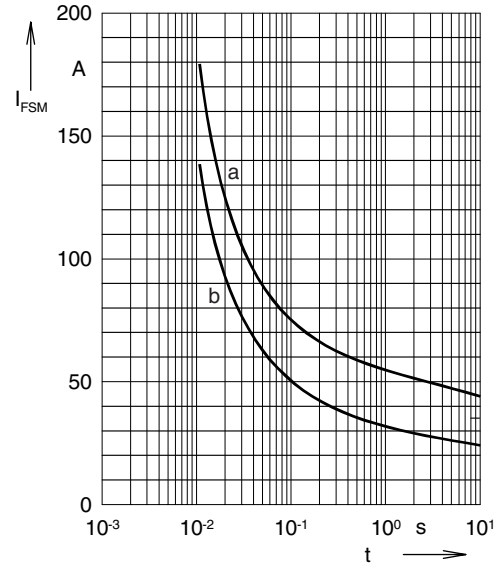


Fig. 2: Characteristics of maximum permissible current
 The curves show the non repetitive peak one cycle surge forward current I_{FSM} as a function of time t and serve for rating protective devices.
 a = Initial state $T_{(vj)} = 45^\circ\text{C}$
 b = Initial state $T_{(vj)} = 150^\circ\text{C}$

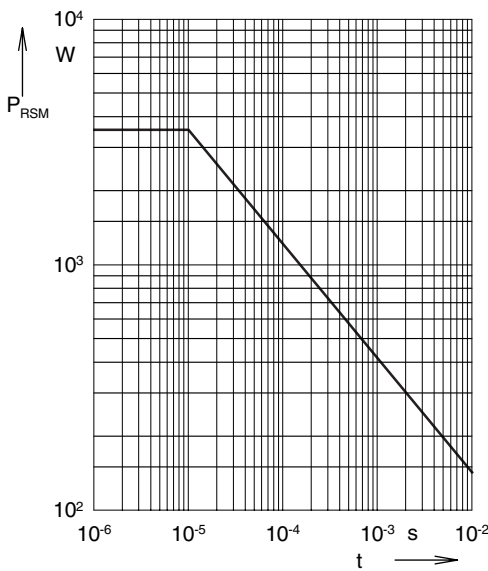


Fig. 3: Power loss
 Non repetitive peak reverse power loss P_{RSM} as a function of time t , $T_{(vj)} = 150^\circ\text{C}$

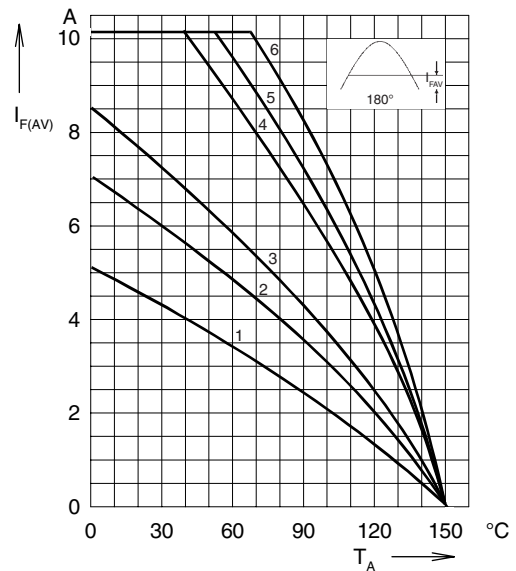


Fig. 4: Load diagram
 Mean forward current $I_{F(AV)}$ of one module for a sine half wave for various cooling modes as a function of the cooling medium temperature T_{amb} for a resistive load (horizontal mounting).

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