

# High Voltage Rectifiers

$$V_{RRM} = 24000 \text{ V}$$

$$I_{F(AV)M} = 2.0 \text{ A}$$

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



| Symbol                       | Conditions  | Maximum Ratings |
|------------------------------|---|-----------------|
| $I_{F(RMS)}$<br>$I_{F(AV)M}$ | air self cooling,<br>$T_{amb} = 45^\circ\text{C}$<br>- without cooling plate<br>- with colling plate                            | 5 A             |
|                              |   | 0.8 A           |
|                              |   | 1.0 A           |
|                              | forced air cooling;<br>$v = 3 \text{ m/s}$ ;<br>$T_{amb} = 35^\circ\text{C}$<br>- without cooling plate<br>- with colling plate | 1.4 A           |
|                              |   | 1.7 A           |
|                              |   |                 |
|                              | oil cooling;<br>$T_{amb} = 35^\circ\text{C}$<br>- without cooling plate<br>- with colling plate                                 | 2.0 A           |
|                              |   | 2.0 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%)<br>$T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10 \text{ ms}$                              | 70 A            |
|                              | $T_{VJ} = 150^\circ\text{C}$ ; $t_p = 10 \text{ ms}$  | 60 A            |
| $T_{VJ}$                     |   | -40...+150 °C   |
| $T_{stg}$                    |   | -40...+150 °C   |
| $T_{VJM}$                    |   | 150 °C          |
| <b>Weight</b>                |   | 127 g           |

## Features

- Hermetically sealed Epoxy
- Use in oil
- Avalanche characteristics

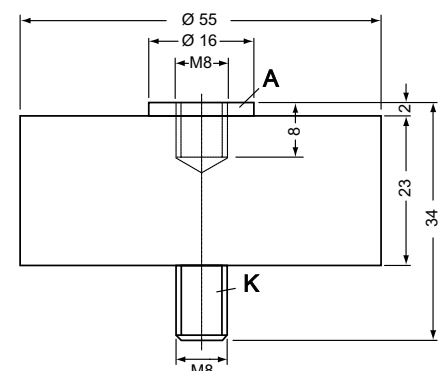
## Applications

- 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

## Dimensions in mm (1 mm = 0.0394")



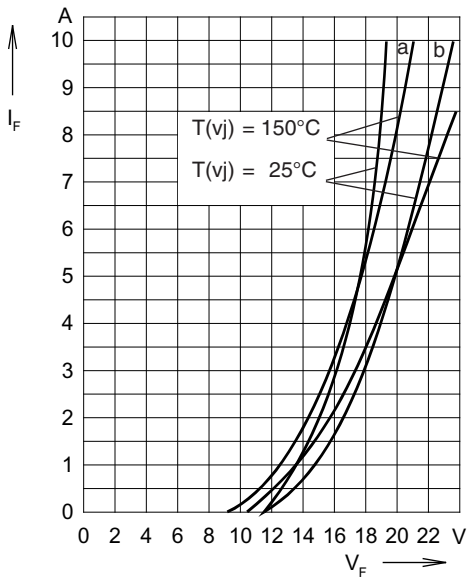
Data according to IEC 60747-2

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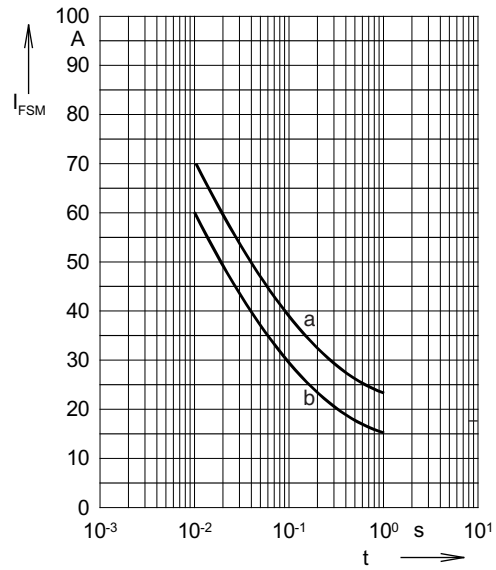
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**Fig. 1: Forward characteristics**

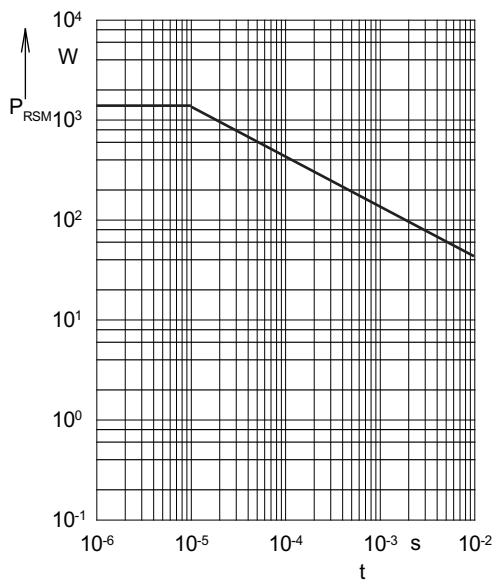
Instantaneous forward current  $I_F$  as a function of instantaneous forward voltage drop  $V_F$  for junction temperature  $T_{(vj)} = 25^\circ\text{C}$  and  $T_{(vj)} = 150^\circ\text{C}$

a = Mean value characteristic  
 b = Limit value characteristic

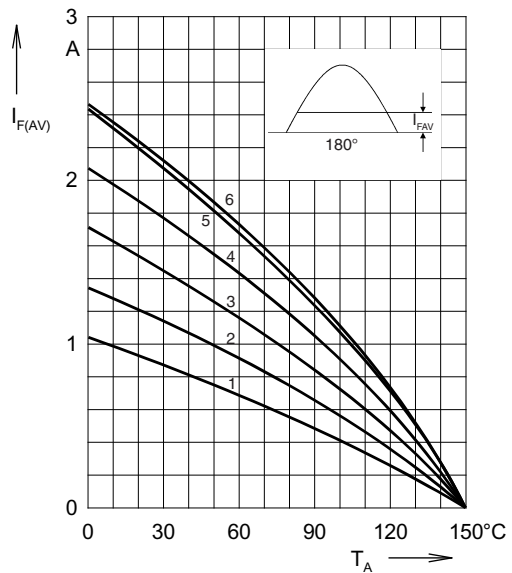

**Fig. 2: Characteristics of maximum permissible current**

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 |