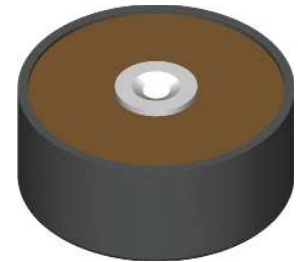


# High Voltage Rectifiers

$$V_{RRM} = 8000 \text{ V}$$

$$I_{F(AV)M} = 4.2 \text{ A}$$

$V_{RRM}$	Standard	Power Designation
V	Types	
8000	UGE 1112 AY4	Si-E 3000 / 1300-2.5



Symbol	Conditions	Maximum Ratings
$I_{F(RMS)}$ $I_{F(AV)M}$	air self cooling; $T_{amb} = 45^\circ\text{C}$ - without cooling plate - with colling plate	7 A 2.0 A 2.5 A
	forced air cooling; $v = 3 \text{ m/s}$ , $T_{amb} = 35^\circ\text{C}$ - without cooling plate - with colling plate	3.2 A 4.1 A
	oil cooling; $T_{amb} = 35^\circ\text{C}$ - without cooling plate - with colling plate	4.2 A 4.2 A
$P_{RSM}$	$T_{VJ} = 150^\circ\text{C}$ ; $t_p = 10 \mu\text{s}$	2.5 kW
$I_{FSM}$	non repetitive, 50 c/s (for 60 c/s add 10%) $T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10 \text{ ms}$	120 A
	$T_{VJ} = 150^\circ\text{C}$ ; $t_p = 10 \text{ ms}$	100 A
$T_{VJ}$		-40...+150 °C
$T_{stg}$		-40...+150 °C
$T_{VJM}$		150 °C
<b>Weight</b>		122 g

Symbol	Conditions	Characteristic Values
$I_R$	$V_R = V_{RRM}$ $T_{VJ} = 150^\circ\text{C}$	$\leq 1 \text{ mA}$
$V_F$	$I_F = 7 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$	6.25 V
$V_{T0}$	$T_{VJ} = 150^\circ\text{C}$	4.25 V
$r_T$	$T_{VJ} = 150^\circ\text{C}$	215 mΩ
<b>a</b>	$f = 50\text{Hz}$	5 x 9.81 m/s <sup>2</sup>
$M_d$		8 Nm

Data according to IEC 60747-2

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

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### Features

- Hermetically sealed Epoxy
- Use in oil
- Avalanche characteristics

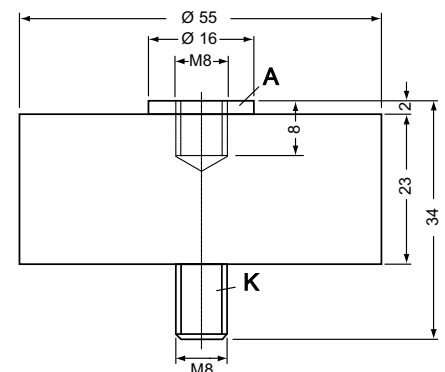
### Applications

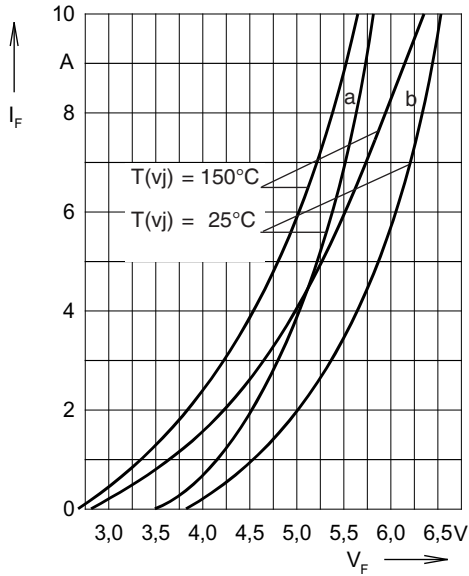
- X-Ray equipment
- Electrostatic dust precipitators
- Electronic beam welding
- Lasers
- Cable test equipment

### Advantages

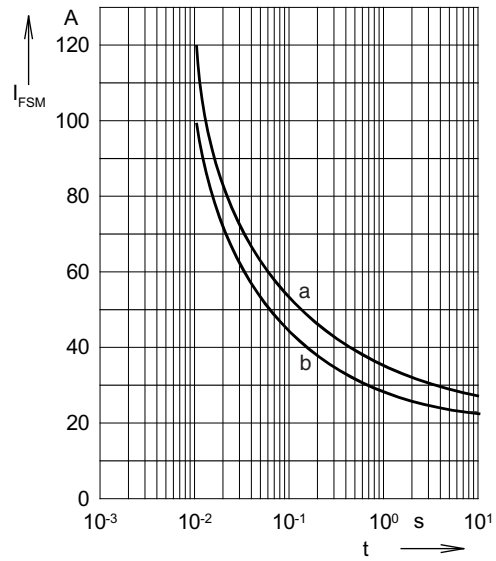
- Simple mounting
- Improved temperature and power cycling
- Reduced protection circuits
- Series and parallel operation

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

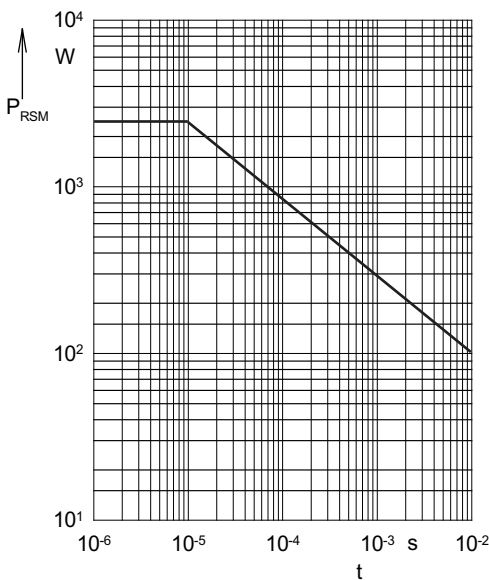




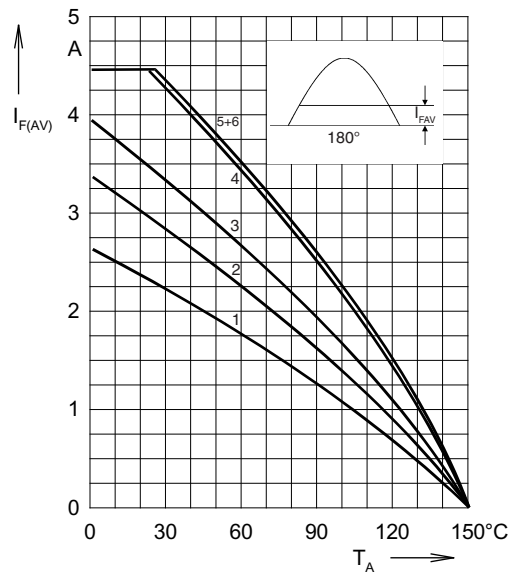
**Fig. 1: Forward characteristics**  
Instantaneous forward current  $I_F$  as a function of instantaneous forward voltage drop  $V_F$  for junction temperature  $T_{(vj)} = 25^\circ\text{C}$  and  $T_{(vj)} = 150^\circ\text{C}$   
a = Mean value characteristic  
b = Limit value characteristic



**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

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