

# High Voltage Rectifiers

$$V_{RRM} = 3200 \text{ V}$$

$$I_{F(AV)M} = 22.9 \text{ A}$$

$V_{RRM}$	Standard	Power Designation
V	Types	
3200	UGE 0421 AY4	Si-E 1125 / 500-6



Symbol	Conditions	Maximum Ratings
$I_{F(RMS)}$	air self cooling, $T_{amb} = 45^\circ\text{C}$	40 A
$I_{F(AV)M}$	- without cooling plate	7.4 A
	- with colling plate	10.9 A
	forced air cooling; $v = 3 \text{ m/s}$ ; $T_{amb} = 35^\circ\text{C}$	
	- without cooling plate	14.2 A
	- with colling plate	18.8 A
	oil cooling; $T_{amb} = 35^\circ\text{C}$	
	- without cooling plate	19.7 A
	- with colling plate	22.9 A
$P_{RSM}$	$T_{VJ} = 150^\circ\text{C}$ ; $t_p = 10 \mu\text{s}$	7 kW
$I_{FSM}$	non repetitive, 50 c/s (for 60 c/s add 10%)	
	$T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10 \text{ ms}$	300 A
	$T_{VJ} = 150^\circ\text{C}$ ; $t_p = 10 \text{ ms}$	250 A
$T_{VJ}$		-40...+150 °C
$T_{stg}$		-40...+150 °C
$T_{VJM}$		150 °C

<b>Weight</b>		115 g
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Symbol	Conditions	Characteristic Values
$I_R$	$V_R = V_{RRM}$ $T_{VJ} = 150^\circ\text{C}$	$\leq 2 \text{ mA}$
$V_F$	$I_F = 55 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$	2.72 V
$V_{T0}$	$T_{VJ} = 150^\circ\text{C}$	1,7 V
$r_T$	$T_{VJ} = 150^\circ\text{C}$	16 mΩ
$a$	$f = 50\text{Hz}$	5 x 9.81 m/s <sup>2</sup>
$M_d$		8 Nm

Data according to IEC 60747-2

## Features

- Hermetically sealed Epoxy
- Use in oil
- Avalanche characteristics

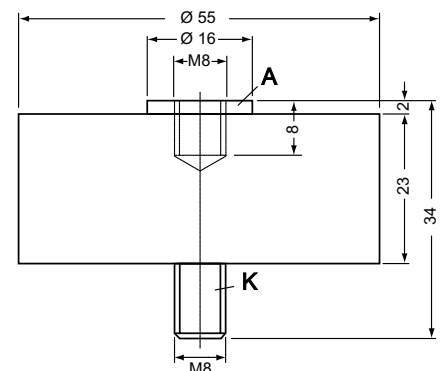
## Applications

- 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")

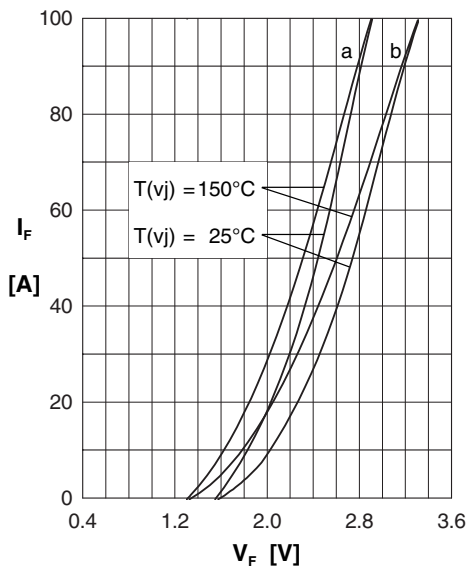


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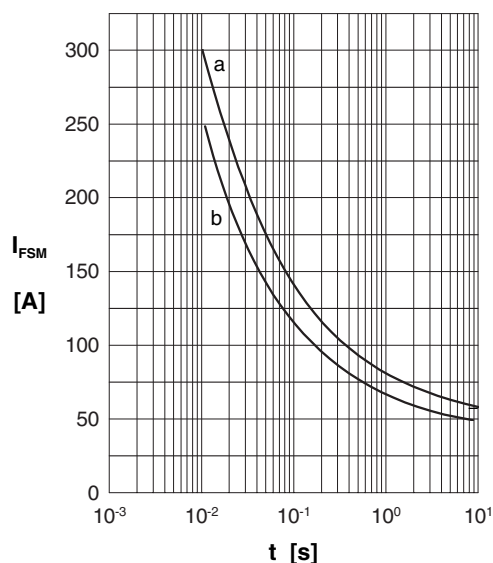
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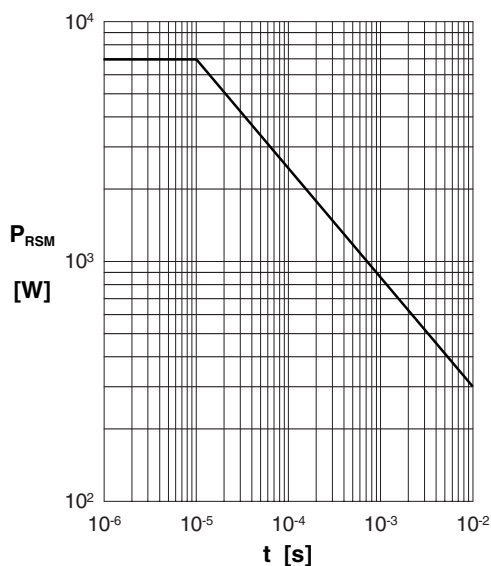
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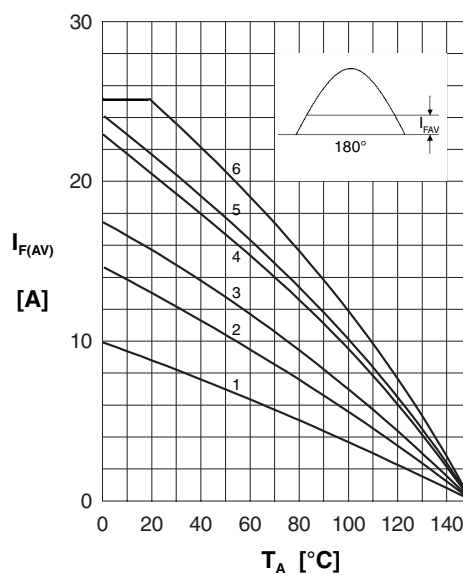
**Fig. 1: Forward characteristics**  
 Instantaneous forward current  $I_F$  as a function of instantaneous forward voltage drop  $V_F$  for junction temperature  $T_{(vj)} = 25^\circ\text{C}$  and  $T_{(vj)} = 150^\circ\text{C}$   
 a = Mean value characteristic  
 b = Limit value characteristic



**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