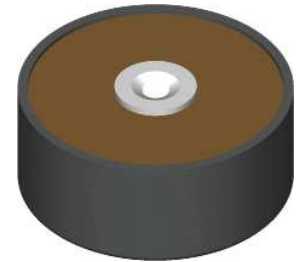


# High Voltage Rectifiers

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

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



Symbol	Conditions	Maximum Ratings
$I_{F(RMS)}$	air self cooling; $T_{amb} = 45^\circ\text{C}$ - without cooling plate - with colling plate	16 A
$I_{F(AV)M}$		3.8 A
		5.4 A
	forced air cooling; $v = 3 \text{ m/s}$ , $T_{amb} = 35^\circ\text{C}$ - without cooling plate - with colling plate	7.0 A 10.2 A
	oil cooling; $T_{amb} = 35^\circ\text{C}$ - without cooling plate - with colling plate	10.2 A 10.2 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
$T_{VJ}$		-40...+150 °C
$T_{stg}$		-40...+150 °C
$T_{VJM}$		150 °C
<b>Weight</b>		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

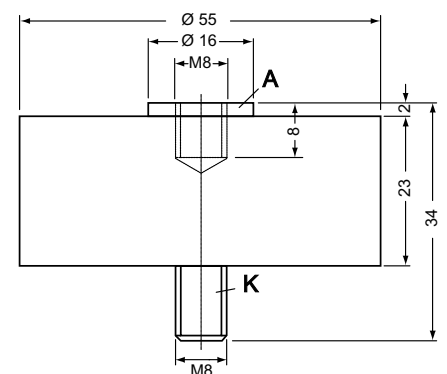
## Advantages

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

Symbol	Conditions	Characteristic Values
$I_R$	$V_R = V_{RRM}$ $T_{VJ} = 150^\circ\text{C}$	$\leq 2 \text{ mA}$
$V_F$	$I_F = 30 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$	4.8 V
$V_{T0}$	$T_{VJ} = 150^\circ\text{C}$	2,55 V
$r_T$	$T_{VJ} = 150^\circ\text{C}$	90 mΩ
<b>a</b>	$f = 50\text{Hz}$	5 x 9.81 m/s <sup>2</sup>
<b>M<sub>d</sub></b>		8 Nm

Data according to IEC 60747-2

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

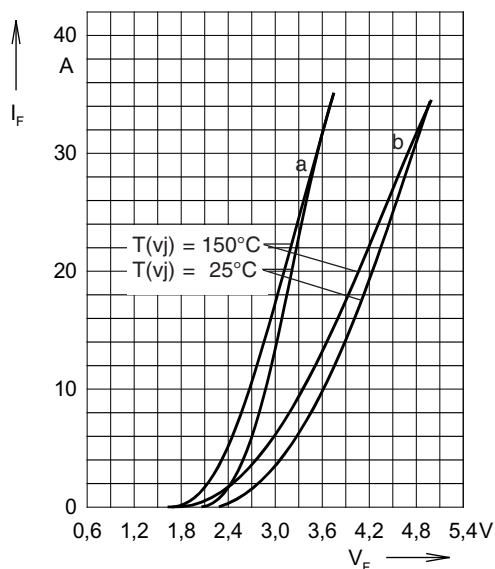


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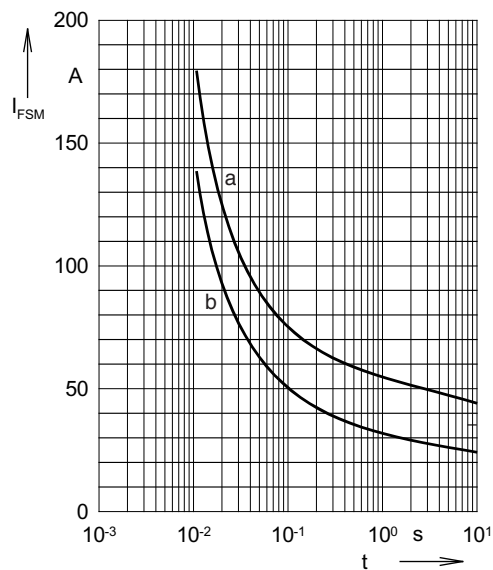
IXYS reserve the right to change limits, test conditions and dimensions.

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**Fig. 1: Forward characteristics**

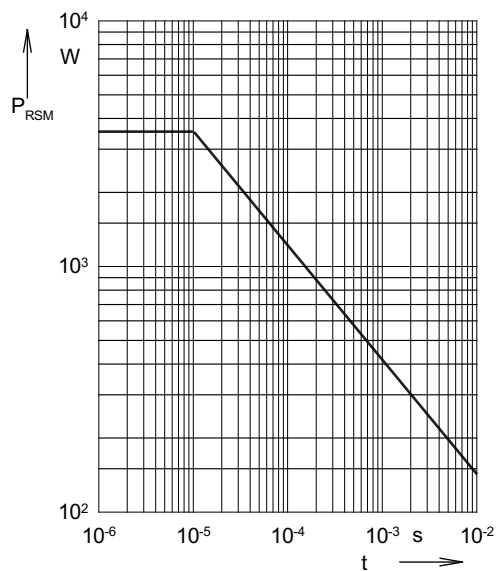
Instantaneous forward current  $I_F$  as a function of instantaneous forward voltage drop  $V_F$  for junction temperature  $T_{(vj)} = 25^\circ\text{C}$  and  $T_{(vj)} = 150^\circ\text{C}$

a = Mean value characteristic  
 b = Limit value characteristic

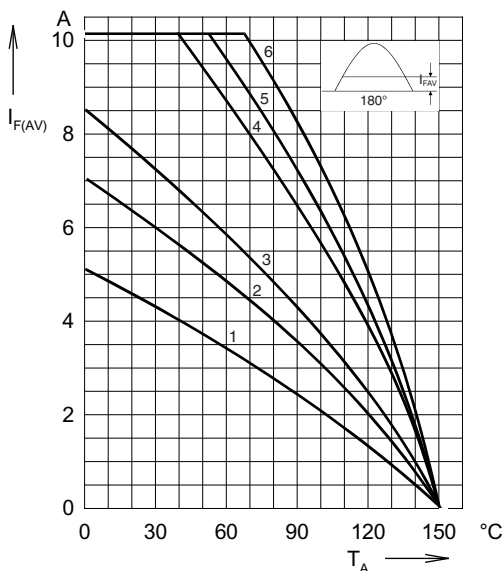

**Fig. 2: Characteristics of maximum permissible current**

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