

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 A 3.8 A 5.4 A
	forced air cooling: $v = 3 \text{ m/s}$, $T_{amb} = 35^{\circ}\text{C}$ - without cooling plate - with cooling plate	7.0 A 10.2 A
	oil cooling, $T_{amb} = 35^{\circ}\text{C}$ - without cooling plate - with cooling 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_{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

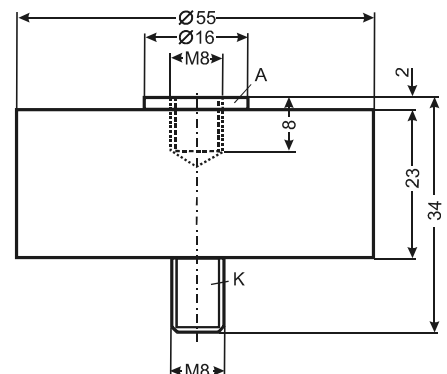
Advantages

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

Symbol	Conditions	Characteristic Values
I_R	$T_{(vj)} = 150^{\circ}\text{C}$; $V_R = V_{RRM}$	$\leq 2 \text{ mA}$
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 $\text{m}\Omega$
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")



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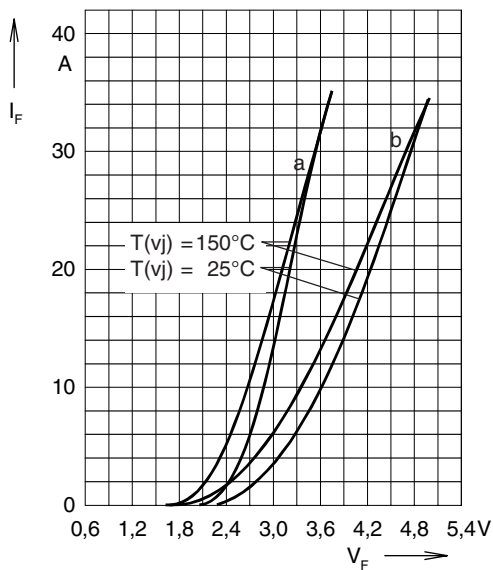


Fig. 1: **Forward characteristics**

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

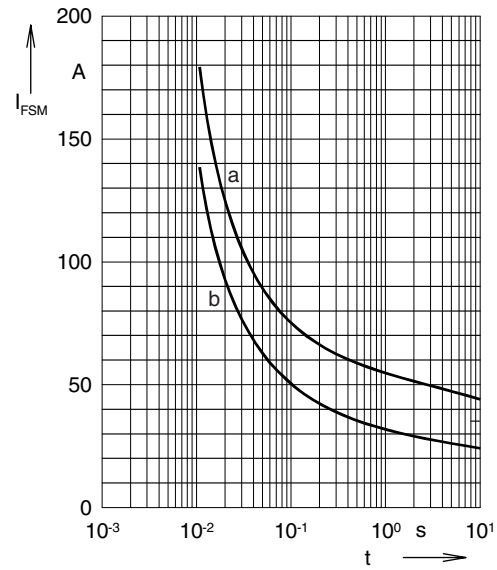


Fig. 2: **Characteristics of maximum permissible current**

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 $T_{(vj)} = 150^\circ\text{C}$

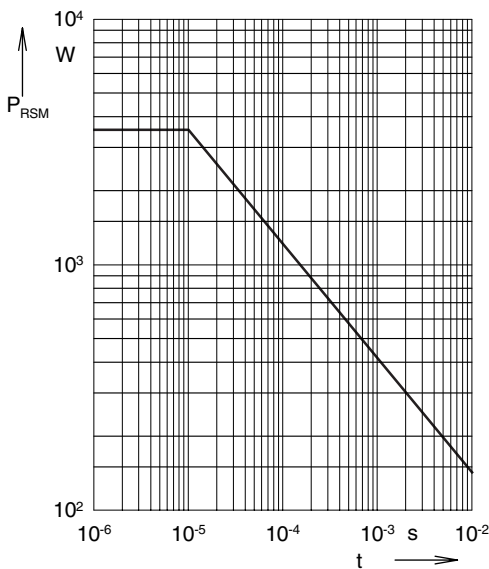


Fig. 3: **Power loss**

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

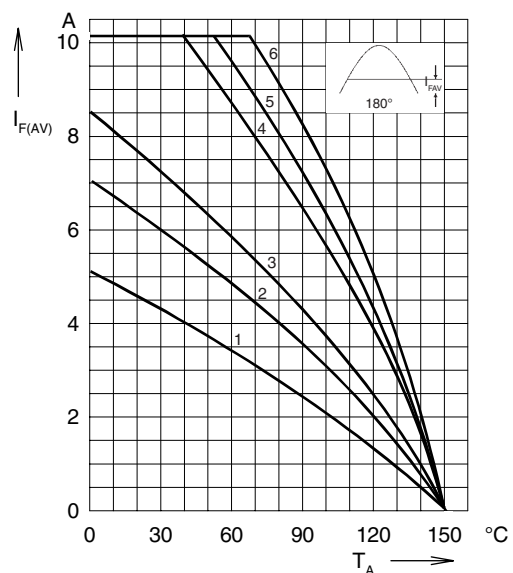


Fig. 4: **Load diagram**

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