

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
$I_{F(RMS)}$ $I_{F(AV)M}$	air self cooling, $T_{amb} = 45^\circ\text{C}$ - without cooling plate - with colling plate	5 A
		0.8 A
		1.0 A
	forced air cooling; $v = 3 \text{ m/s}$; $T_{amb} = 35^\circ\text{C}$ - without cooling plate - with colling plate	1.4 A
		1.7 A
	oil cooling; $T_{amb} = 35^\circ\text{C}$ - without cooling plate - 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%) $T_{VJ} = 45^\circ\text{C}$; $t_p = 10 \text{ ms}$	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
Weight		127 g

Symbol	Conditions	Characteristic Values
I_R	$V_R = V_{RRM}$ $T_{VJ} = 150^\circ\text{C}$	$\leq 1 \text{ mA}$
V_F	$I_F = 3 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$	18 V
V_{T0}	$T_{VJ} = 150^\circ\text{C}$	12 V
r_T	$T_{VJ} = 150^\circ\text{C}$	1.8 mΩ
a	$f = 50\text{Hz}$	$5 \times 9.81 \text{ m/s}^2$
M_d		8 Nm

Data according to IEC 60747-2

Features

- Hermetically sealed Epoxy
- Use in oil
- Avalanche characteristics

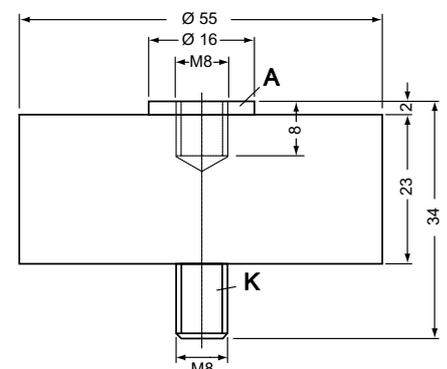
Applications

- 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")

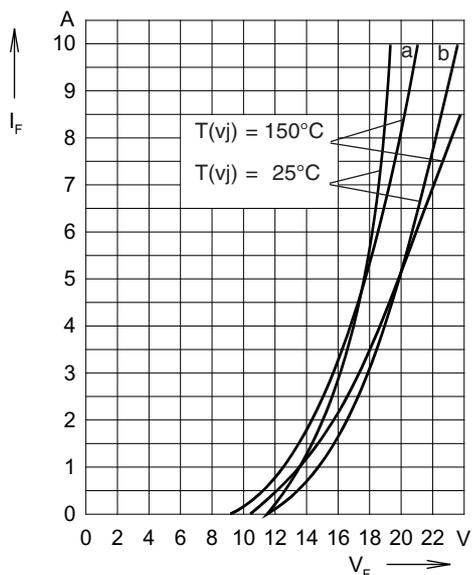


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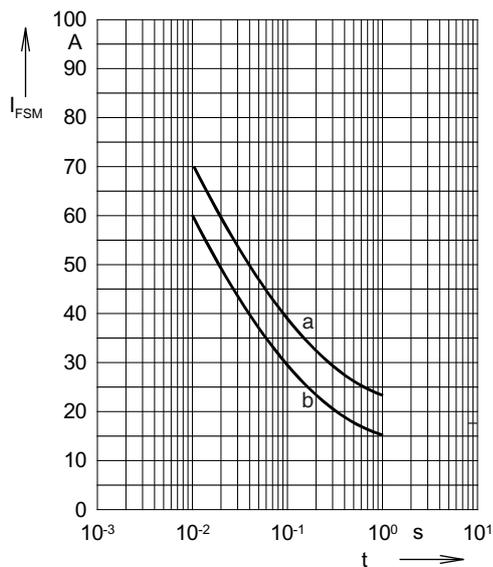
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Fig. 1: Forward characteristics

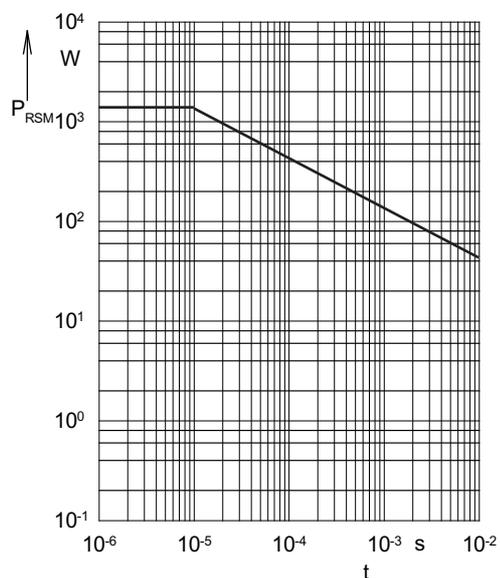
Instantaneous forward current I_F as a function of instantaneous forward voltage drop V_F for junction temperature $T_{(vj)} = 25^\circ\text{C}$ and $T_{(vj)} = 150^\circ\text{C}$

a = Mean value characteristic
 b = Limit value characteristic

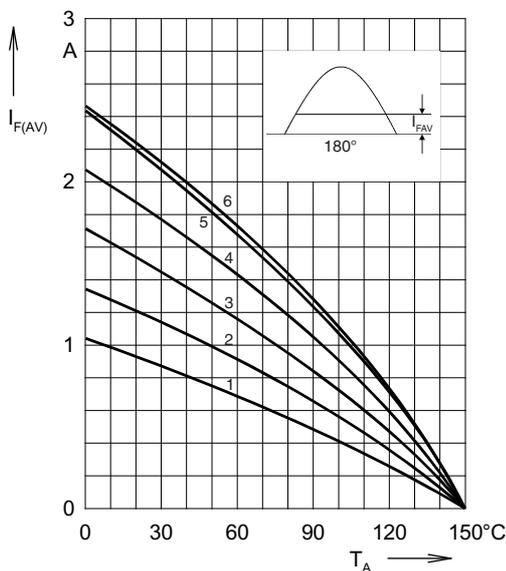

Fig. 2: Characteristics of maximum permissible current

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