High Voltage Rectifiers

V_{RRM} = 8000 V
$I_{F(AV)M}$ = 4.2 A

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

Anode

Cathode

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

Symbol	Conditions		Characteristic Values	
I_R	$T_{(vj)}$ = 150°C;	$V_R = V_{RRM}$	≤ 1	mA
V_F	I_F = 7 A $T_{(vj)}$ = 25°C		6.25	V
V_{TO}	$T_{(vj)}$ = 150°C		4.25	V
r_T	$T_{(vj)}$ = 150°C		0.215	mΩ
a	f = 50Hz		5 x 9,81	m/s²
M_d			8	Nm

Features
• Hermetically sealed Epoxy
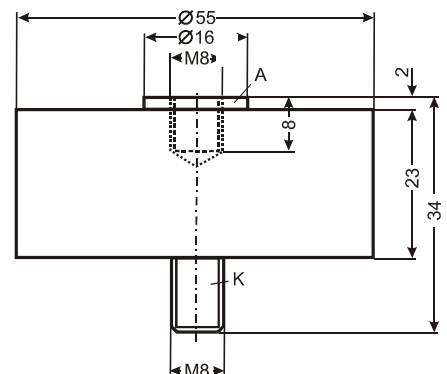• Use in oil
• Avalanche characteristics

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")

Data according to IEC 60747-2
IXYS reserve the right to change limits, test conditions and dimensions.
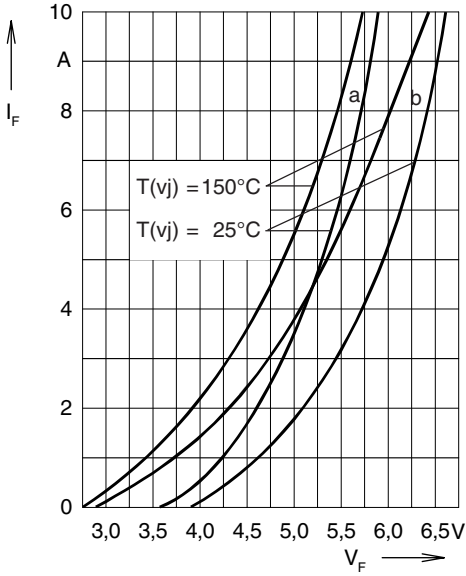
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Fig. 1: Forward characteristics
Instantaneous forward current I_F as a function of instantaneous forward voltage drop V_F for junction temperature $T_{(vj)} = 25°C$ and $T_{(vj)} = 150°C$
a = Mean value characteristic
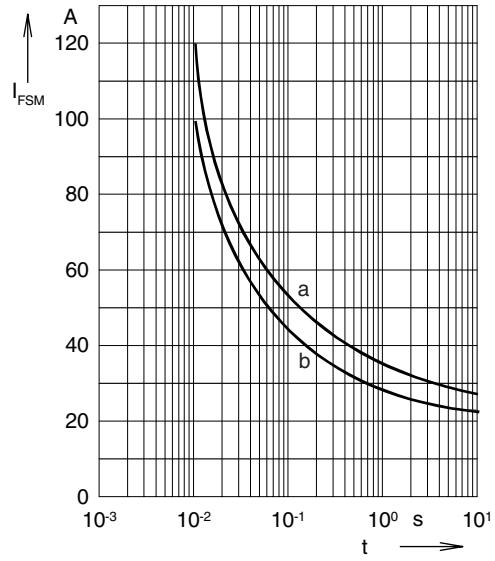b = Limit value characteristic

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 $\qquad T_{(vj)} = 45°C$
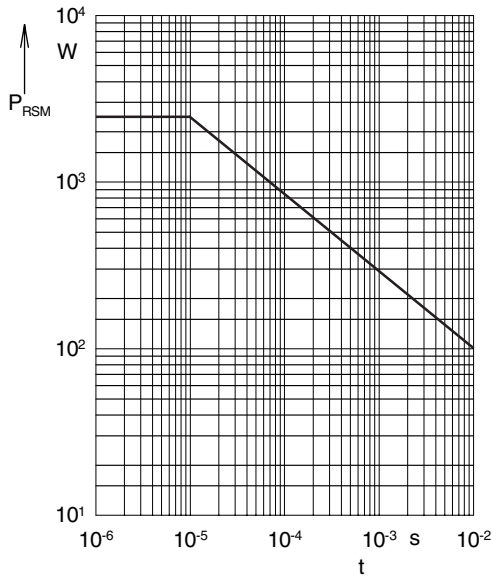b = Initial state $\qquad T_{(vj)} = 150°C$

Fig. 3: Power loss
Non repetitive peak reverse power loss P_{RSM} as a function of time t, $T_{(vj)} = 150°C$
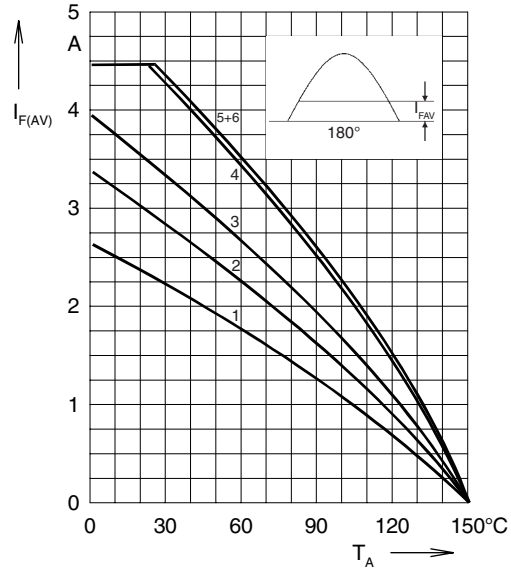

Fig. 4: Load diagramm
Mean forward current $I_{F(AV)}$ of one module for a sine half wave for various cooling modes as a function of the cooling medium temperature T_{amb} for a resistive load (horizontal mounting).

Cooling modes
1 = air self cooling $\qquad$ without $\quad$ cooling plate
2 = air self cooling $\qquad$ with $\qquad$ cooling plate
3 = forced air cooling $\qquad$ without $\quad$ cooling plate
4 = forced air cooling $\qquad$ with $\qquad$ cooling plate
5 = oil cooling $\qquad$ without $\quad$ cooling plate
6 = oil cooling $\qquad$ with $\qquad$ cooling plate