

High Voltage Rectifiers

$V_{RRM} = 3200\text{ V}$
 $I_{F(AV)M} = 22.9\text{ A}$

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



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	40 7.4 10.9	A A A
	forced air cooling: $v = 3\text{ m/s}$, $T_{amb} = 35^{\circ}\text{C}$ - without cooling plate - with cooling plate	14.2 18.8	A A
	oil cooling, $T_{amb} = 35^{\circ}\text{C}$ - without cooling plate - with cooling plate	19.7 22.9	A 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_{amb}		-40...+150	$^{\circ}\text{C}$
T_{stg}		-40...+150	$^{\circ}\text{C}$
$T_{(vj)}$		150	$^{\circ}\text{C}$
Weight		115	g

Features

- Hermetically sealed Epoxy
- Use in oil
- Avalanche characteristics

Applications

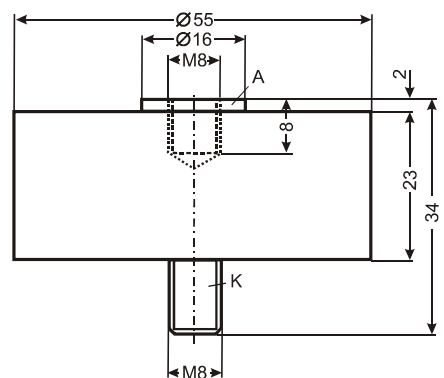
- X-Ray equipment
- Electrostatic dust precipitators
- Electronic beam welding
- Lasers
- Cable test equipment

Advantages

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

Symbol	Conditions	Characteristic Values	
I_R	$T_{(vj)} = 150^{\circ}\text{C}$; $V_R = V_{RRM}$	≤ 2	mA
V_F	$I_F = 55\text{ A}$ $T_{(vj)} = 25^{\circ}\text{C}$	2.72	V
V_{TO}	$T_{(vj)} = 150^{\circ}\text{C}$	1.7	V
r_T	$T_{(vj)} = 150^{\circ}\text{C}$	16	m Ω
a	$f = 50\text{ Hz}$	$5 \times 9,81$	m/s ²
M_d		8	Nm

Dimensions in mm (1 mm = 0.0394")



Data according to IEC 60747-2
 IXYS reserve the right to change limits, test conditions and dimensions.

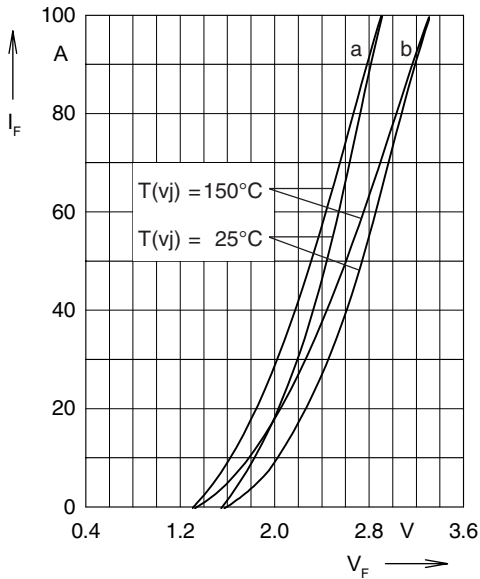


Fig. 1: Forward characteristics

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

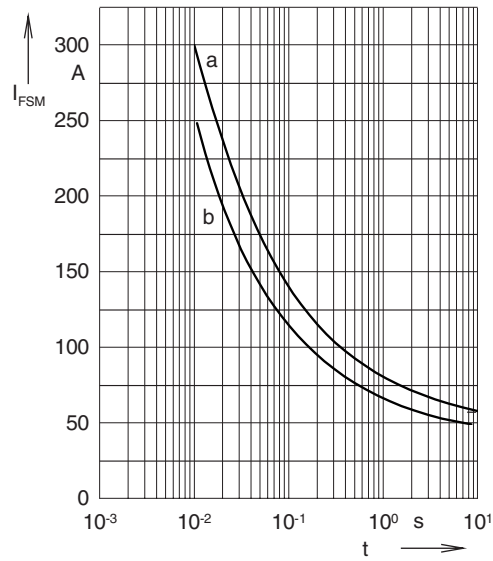


Fig. 2: Characteristics of maximum permissible current

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

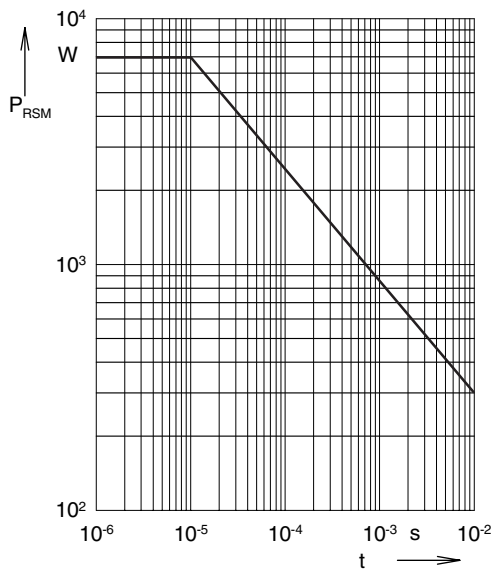


Fig. 3: Power loss

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

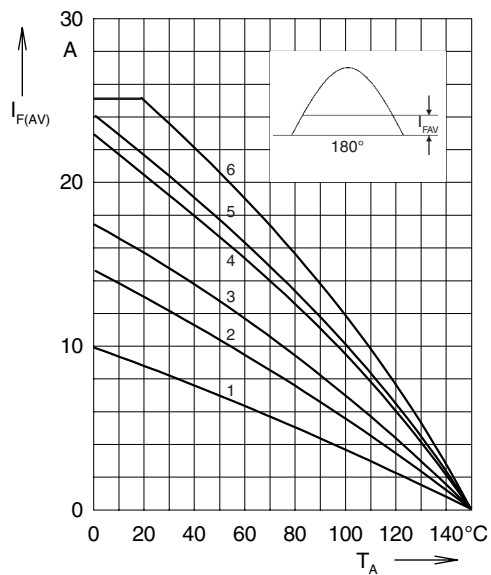


Fig. 4: Load diagramm

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 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