

# 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

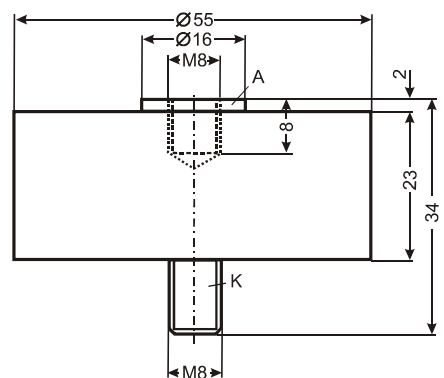
- X-Ray equipment
- Electrostatic dust precipitators
- Electronic beam welding
- Lasers
- Cable test equipment

### Advantages

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

Symbol	Conditions	Characteristic Values	
$I_R$	$T_{(vj)} = 150^\circ\text{C}$ ; $V_R = V_{RRM}$	$\leq 2$	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 $\Omega$
$a$	$f = 50\text{Hz}$	5 x 9,81	m/s <sup>2</sup>
$M_d$		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.

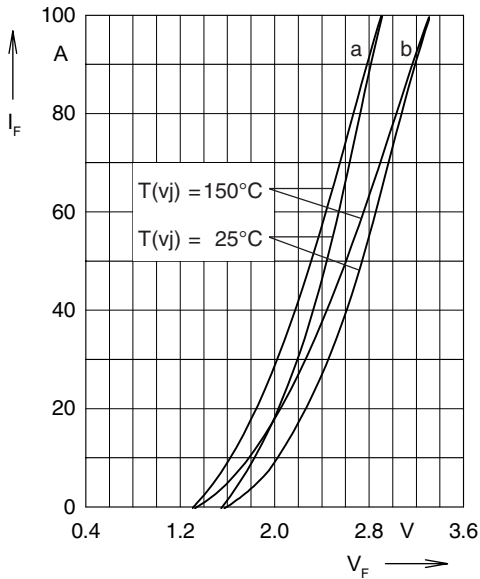


Fig. 1: **Forward characteristics**

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

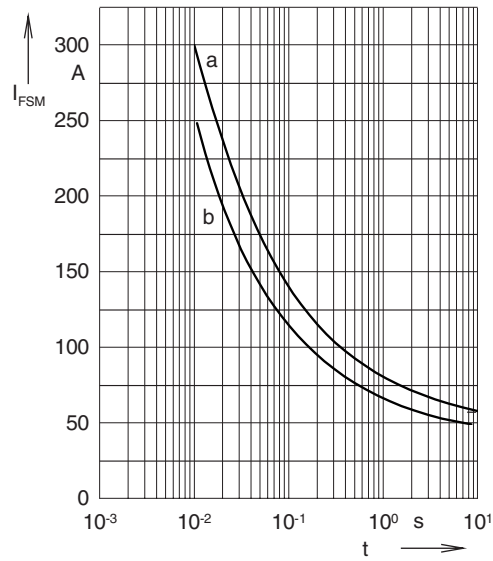


Fig. 2: **Characteristics of maximum permissible current**

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

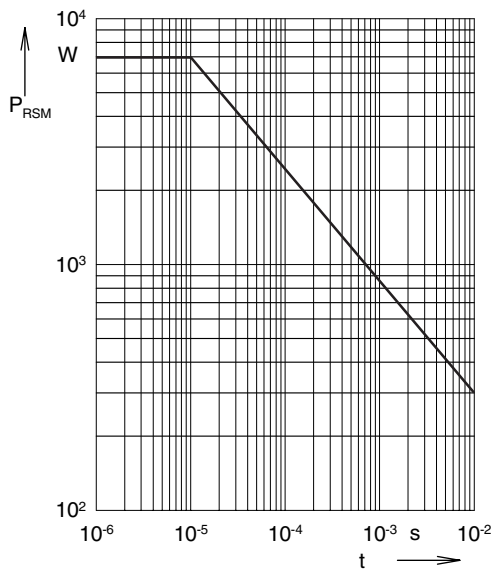


Fig. 3: **Power loss**

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

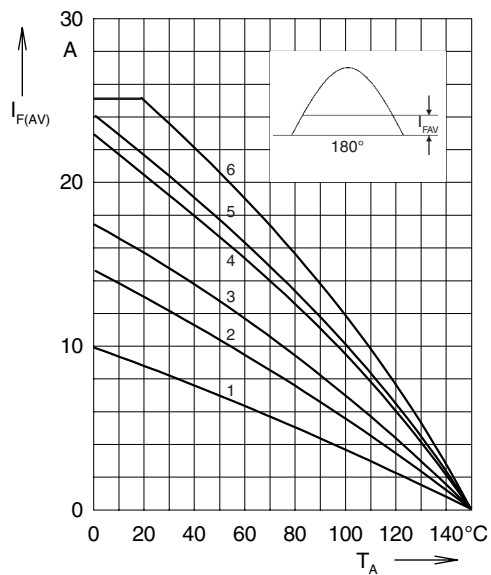


Fig. 4: **Load diagramm**

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