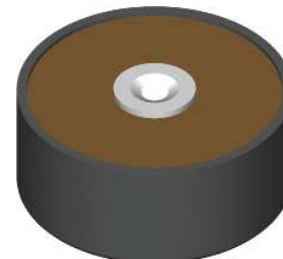


# High Voltage Rectifiers

$$V_{RRM} = 3200 \text{ V}$$

$$I_{F(AV)M} = 22.9 \text{ A}$$

| $V_{RRM}$<br>V | Standard<br>Types | Power Designation |
|----------------|-------------------|-------------------|
| 3200           | UGE 0421 AY4      | Si-E 1125 / 500-6 |



| Symbol                             | Conditions                                                                                                                     | Maximum Ratings                                                                          |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| $I_{F(RMS)}$<br>$I_{F(AV)M}$       | air self cooling, $T_{amb} = 45^{\circ}\text{C}$<br>- without cooling plate<br>- with colling plate                            | 40 A<br>7.4 A<br>10.9 A                                                                  |
|                                    | forced air cooling;<br>$v = 3 \text{ m/s}$ ; $T_{amb} = 35^{\circ}\text{C}$<br>- without cooling plate<br>- with colling plate | 14.2 A<br>18.8 A                                                                         |
|                                    | oil cooling;<br>$T_{amb} = 35^{\circ}\text{C}$<br>- without cooling plate<br>- with colling plate                              | 19.7 A<br>22.9 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%)<br>$T_{VJ} = 45^{\circ}\text{C}$ ; $t_p = 10 \text{ ms}$                           | 300 A                                                                                    |
|                                    | $T_{VJ} = 150^{\circ}\text{C}$ ; $t_p = 10 \text{ ms}$                                                                         | 250 A                                                                                    |
| $T_{VJ}$<br>$T_{stg}$<br>$T_{VJM}$ |                                                                                                                                | -40...+150 $^{\circ}\text{C}$<br>-40...+150 $^{\circ}\text{C}$<br>150 $^{\circ}\text{C}$ |
| Weight                             |                                                                                                                                | 115 g                                                                                    |

| Symbol   | Conditions                                         | Characteristic Values   |
|----------|----------------------------------------------------|-------------------------|
| $I_R$    | $V_R = V_{RRM}$ $T_{VJ} = 150^{\circ}\text{C}$     | $\leq 2 \text{ mA}$     |
| $V_F$    | $I_F = 55 \text{ A}$ $T_{VJ} = 25^{\circ}\text{C}$ | 2.72 V                  |
| $V_{T0}$ | $T_{VJ} = 150^{\circ}\text{C}$                     | 1,7 V                   |
| $r_T$    | $T_{VJ} = 150^{\circ}\text{C}$                     | 16 $\text{m}\Omega$     |
| $a$      | $f = 50\text{Hz}$                                  | 5 x 9.81 $\text{m/s}^2$ |
| $M_d$    |                                                    | 8 Nm                    |

Data according to IEC 60747-2

## Disclaimer Notice

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at [www.littelfuse.com/disclaimer-electronics](http://www.littelfuse.com/disclaimer-electronics).

IXYS reserves the right to change limits, test conditions and dimensions.

20200123a

## Features

- Hermetically sealed Epoxy
- Use in oil
- Avalanche characteristics

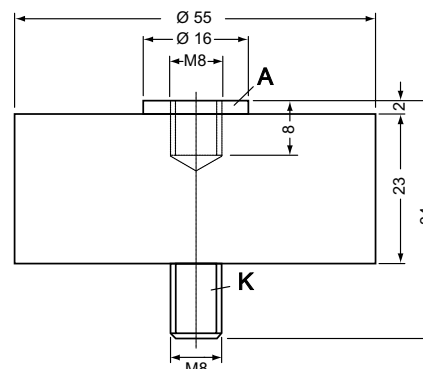
## Applications

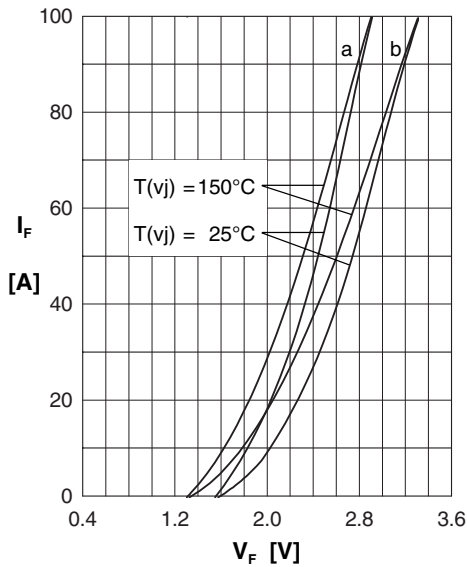
- X-Ray equipment
- Electrostatic dust precipitators
- Electronic beam welding
- Lasers
- Cable test equipment

## Advantages

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

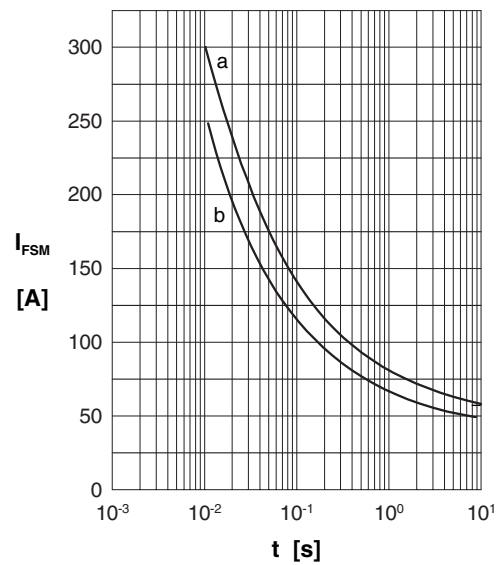
## Dimensions in mm (1 mm = 0.0394")





**Fig. 1: Forward characteristics**

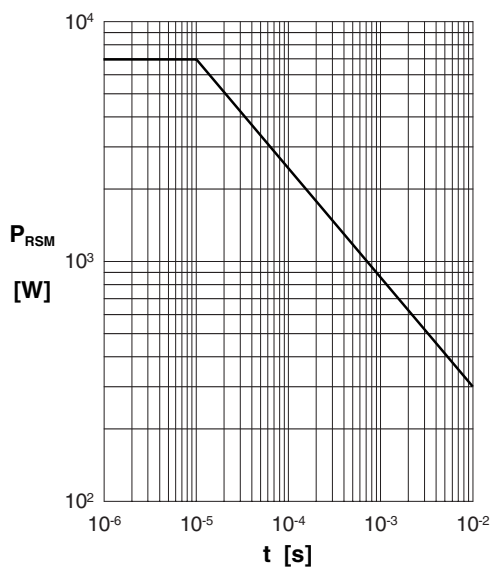
Instantaneous forward current  $I_F$  as a function of instantaneous forward voltage drop  $V_F$  for junction temperature  $T_{(vj)} = 25^\circ\text{C}$  and  $T_{(vj)} = 150^\circ\text{C}$   
 a = Mean value characteristic  
 b = Limit value characteristic



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

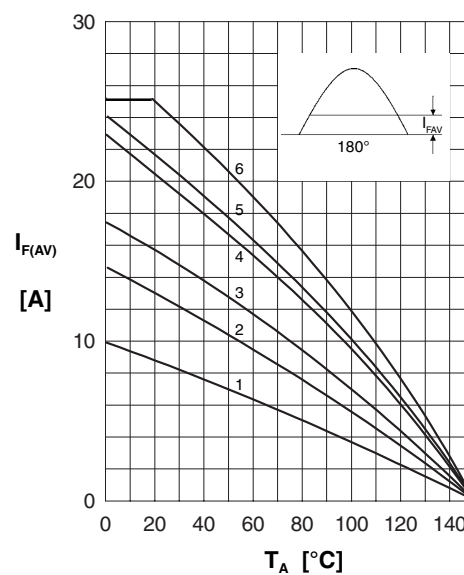
The curves show the non repetitive peak one cycle surge forward current  $I_{FSM}$  as a function of time  $t$  and serve for rating protective devices.

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 |