

High Voltage Rectifiers

 $V_{\rm RRM} = 24000 V$ $I_{\rm F(AV)M} = 2.0 A$

| $V_{_{\rm RRM}}$ | Standard | Power Designation |
|------------------|--------------|----------------------|
| v | Types | |
| 24000 | UGE 3126 AY4 | Si-E 9000 / 4000-0.7 |





| Symbol | Conditions | | Maximum Rat | tings |
|---------------------|---|------------------------------------|-------------------|------------------|
| I _{F(RMS)} | | | 5 | A |
| F(AV)M | air self cooling, | $T_{amb} = 45^{\circ}C$ | | |
| | | - without cooling plate | 0.8 | A |
| | | - with colling plate | 1.0 | A |
| | forced air cooling; | | | |
| | v = 3 m/s; | $T_{amb} = 35^{\circ}C$ | | |
| | | - without cooling plate | 1.4 | A |
| | | - with colling plate | 1./ | A |
| | oil cooling; | | | |
| | | $T_{amb} = 35^{\circ}C$ | | |
| | | - without cooling plate | 2.0 | A |
| | | - with colling plate | 2.0 | A |
| P _{RSM} | T _{vj} = 150°C; | t _p = 10 μs | 1.6 | kW |
| I _{ESM} | non repetitive, 50 c/s (for 60 c/s add 10%) | | | |
| | $T_{VJ} = 45^{\circ}C;$ | t _p = 10 ms | 70 | A |
| | $T_{VJ} = 150^{\circ}C;$ | t _p = 10 ms | 60 | A |
| T _{VI} | | | -40+150 | °C |
| T _{stq} | | | -40+150 | °C |
| T _{VJM} | | | 150 | °C |
| Weight | | | 127 | g |
| Symbol | Conditions | | Characteristic Va | lues |
| I _R | $V_{B} = V_{BBM}$ | T _{v.I} = 150°C | <u><</u> 1 | mA |
| V _F | I _F = 3 A | $T_{y_1} = 25^{\circ}C$ | 18 | V |
| V | | T = 150°C | 12 | V |
| r _T | | $T_{v_{J}}^{v_{J}} = 150^{\circ}C$ | 1.8 | Ω |
| а | f = 50Hz | | 5 x 9.81 | m/s ² |
| M _d | | | 8 | Nm |

Data according to IEC 60747-2

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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")







Instantaneous forward current I_F as a function of instantaneous

forward voltage drop $V_{_{\rm F}}$ for junction temperature $T_{_{(vj)}}$ = 25°C and $T_{_{(vj)}}$



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 $T_{(v)} = 45^{\circ}C$ b = Initial state $T_{(v)} = 150^{\circ}C$

104 W P'_{RSM}10³ 111 10² ТП 10¹ 111 10⁰ +++++ **10**-1 10-6 10-5 10-4 10-3 s 10^{-2} t

Fig. 3: Power loss

= 150°C

a = Mean value characteristic

b = Limit value characteristic

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

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Fig. 4: Load diagramm

Mean forward current I_{F(AV)} of <u>one</u> 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

| 4 | | فريام والأزرين | a a allina intata |
|-----|--------------------|----------------|----------------------|
| = | air seit 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 plate200123a |

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