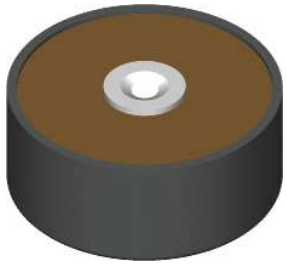
High Voltage Rectifiers

V_{RRM} = 4800 V
$I_{F(AV)M}$ = 10.2 A

V_{RRM} V	Standard Types	Power Designation
4800	UGE 0221 AY4	Si-E 1750 / 775-4



Symbol	Conditions		Maximum Ratings	
$I_{F(RMS)}$			16	A
$I_{F(AV)M}$	air self cooling;	T_{amb} = 45°C		
		- without cooling plate	3.8	A
		- with colling plate	5.4	A
	forced air cooling; v = 3 m/s,	T_{amb} = 35°C		
		- without cooling plate	7.0	A
		- with colling plate	10.2	A
	oil cooling;			
		T_{amb} = 35°C		
		- without cooling plate	10.2	A
		- with colling plate	10.2	A
P_{RSM}	T_{VJ} = 150°C;	t_p = 10 µs	3.4	kW
I_{FSM}	non repetitive, 50 c/s (for 60 c/s add 10%)			
	T_{VJ} = 45°C;	t_p = 10 ms	180	A
	T_{VJ} = 150°C;	t_p = 10 ms	140	A
T_{VJ}			-40...+150	°C
T_{stg}			-40...+150	°C
T_{VJM}			150	°C
Weight			120	g

Symbol	Conditions		Characteristic Values	
I_R	$V_R = V_{RRM}$	T_{VJ} = 150°C	≤ 2	mA
V_F	I_F = 30 A	T_{VJ} = 25°C	4.8	V
V_{T0}		T_{VJ} = 150°C	2,55	V
r_T		T_{VJ} = 150°C	90	mΩ
a	f = 50Hz		5 x 9.81	m/s^2
M_d			8	Nm

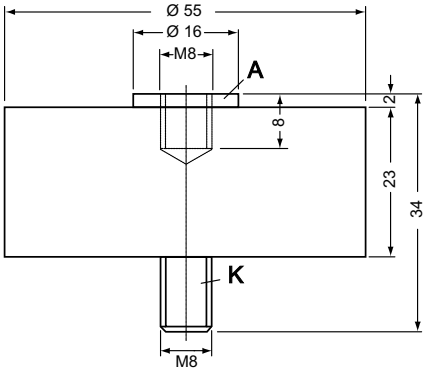
Data according to IEC 60747-2

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")



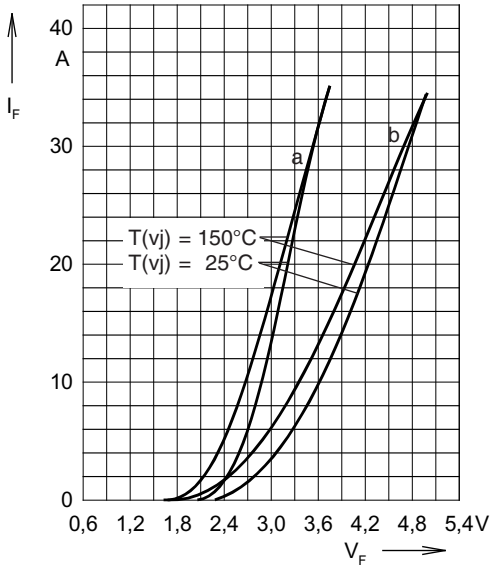


Fig. 1: **Forward characteristics**
Instantaneous forward current I_F as a function of instantaneous forward voltage drop V_F for junction temperature $T_{(vj)}$ = 25°C and $T_{(vj)}$ = 150°C
a = Mean value characteristic
b = Limit value characteristic

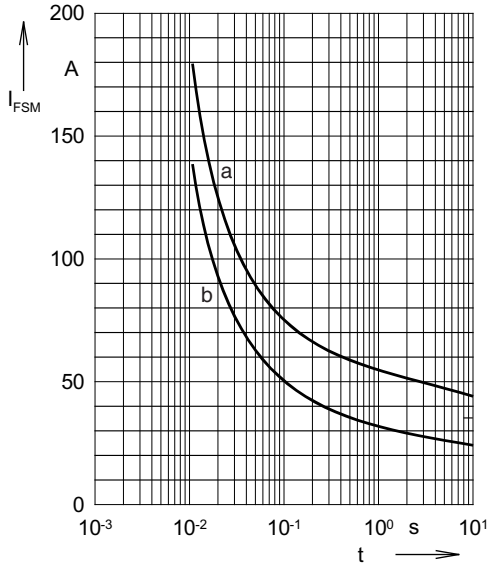


Fig. 2: **Characteristics of maximum permissible current**
The curves show the non repetitive peak one cycle surge forward current I_{FSM} as a function of time *t* and serve for rating protective devices.
a = Initial state $T_{(vj)}$ = 45°C
b = Initial state $T_{(vj)}$ = 150°C

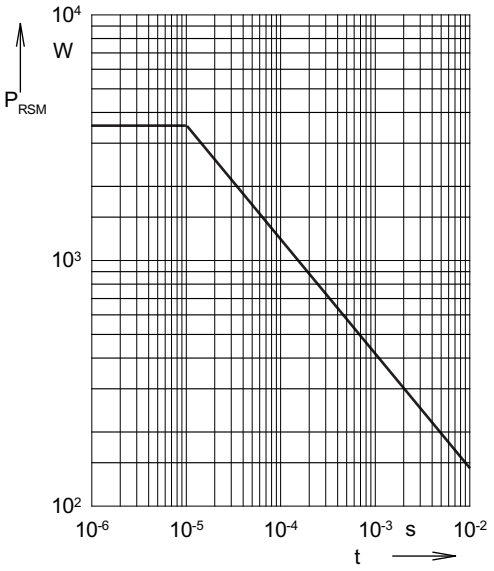


Fig. 3: **Power loss**
Non repetitive peak reverse power loss P_{RSM} as a function of time *t*, $T_{(vj)}$ = 150°C

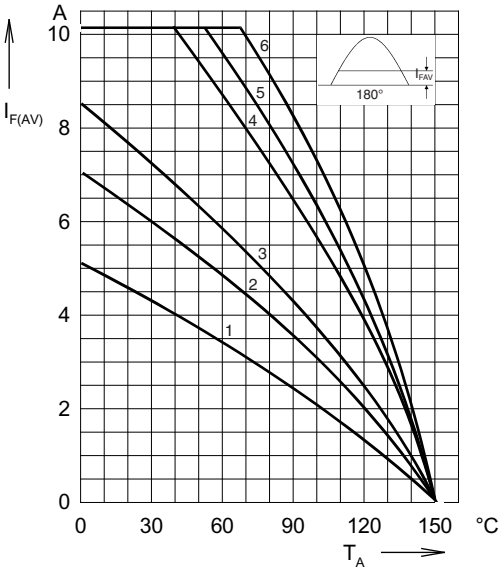


Fig. 4: **Load diagramm**
Mean forward current $I_{F(AV)}$ of one module for a sine half wave for various cooling modes as a function of the cooling medium temperature T_{amb} for a resistive load (horizontal mounting).

Cooling modes

1 =	air self cooling	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