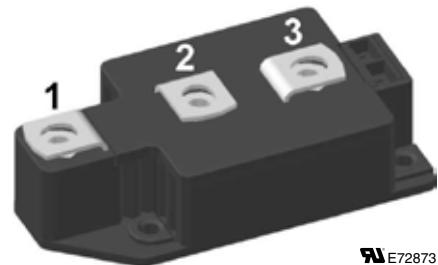
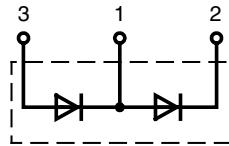


High Power Diode Modules

I_{FRSM} = 2x 480 A
I_{FAVM} = 2x 305 A
V_{RRM} = 1200-2200 V

V _{RSM} V	V _{RRM} V	Type
1300	1200	MDD 310-12N1
1500	1400	MDD 310-14N1
1700	1600	MDD 310-16N1
1900	1800	MDD 310-18N1
2100	2000	MDD 310-20N1
2300	2200	MDD 310-22N1



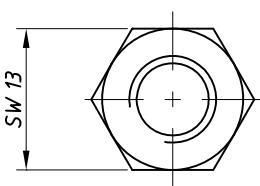
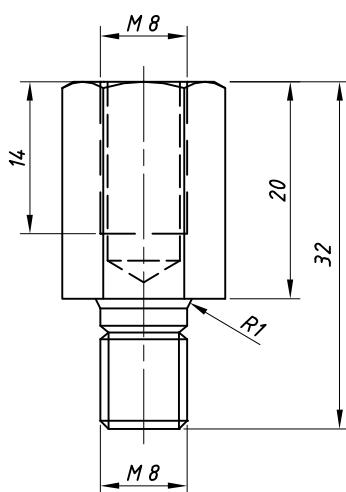
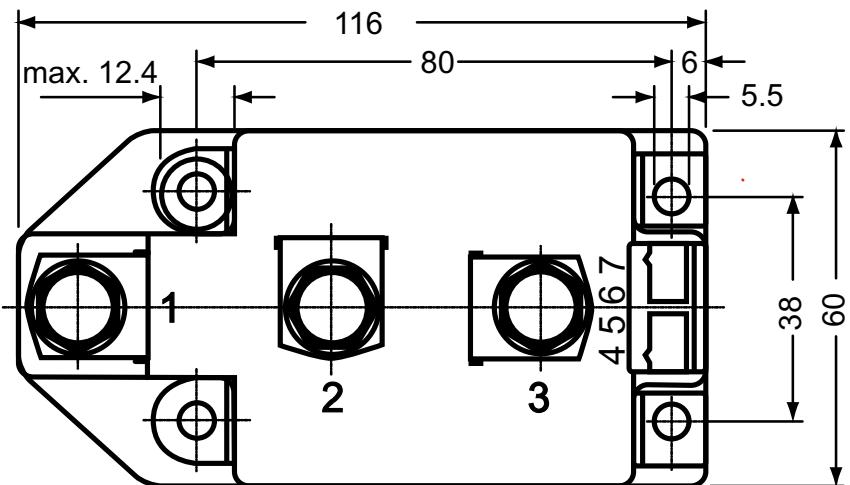
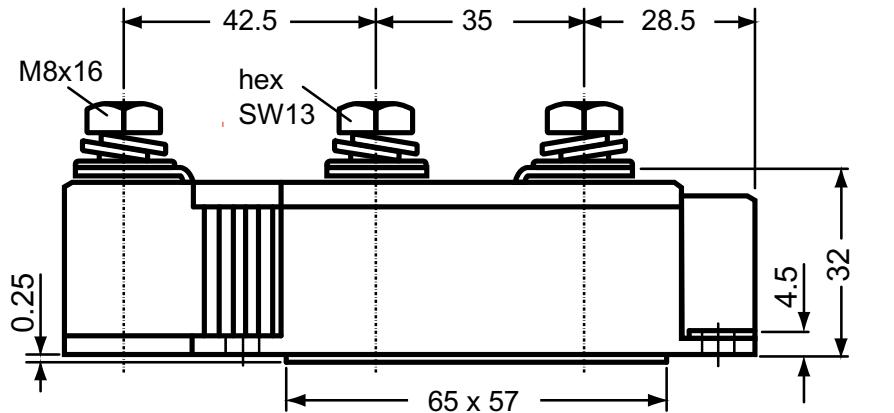
E72873

Symbol	Conditions	Maximum Ratings		
I _{FRMS}	T _{VJ} = T _{VJM}	480	A	
I _{FAVM}	T _C = 100°C; 180° sine	305	A	
I _{FSM}	T _{VJ} = 45°C; t = 10 ms (50 Hz) V _R = 0 t = 8.3 ms (60 Hz)	11,5	kA	
	T _{VJ} = T _{VJM} ; t = 10 ms (50 Hz) V _R = 0 t = 8.3 ms (60 Hz)	9,6	kA	
I ² t	T _{VJ} = 45°C; t = 10 ms (50 Hz) V _R = 0 t = 8.3 ms (60 Hz)	662	kA ² s	
	T _{VJ} = T _{VJM} ; t = 10 ms (50 Hz) V _R = 0 t = 8.3 ms (60 Hz)	620	kA ² s	
		460	kA ² s	
		430	kA ² s	
T _{VJ}		-40...+150	°C	
T _{VJM}		150	°C	
T _{stg}		-40...+125	°C	
V _{ISOL}	50/60 Hz, RMS t = 1 min	3000	V~	
	I _{ISOL} ≤ 1 mA t = 1 s	3600	V~	
M _d	Mounting torque (M5)	2.5 - 5	Nm	
	Terminal connection torque (M8)	12 - 15	Nm	
Weight	Typical including screws	320	g	

Symbol	Conditions	Characteristics Values		
I _{RRM}	V _R = V _{RRM} ; T _{VJ} = T _{VJM}	40	mA	
V _F	I _F = 600 A; T _{VJ} = 25°C	1.2	V	
V _{TO}	For power-loss calculations only	0.75	V	
r _t	T _{VJ} = T _{VJM}	0.63	mΩ	
R _{thJC}	per diode; DC current	0.129	K/W	
	per module	0.065	K/W	
R _{thJK}	per diode; DC current	0.169	K/W	
	per module	0.0845	K/W	
Q _S	T _{VJ} = 125°C; I _F = 400 A; -di/dt = 50 A/μs	760	μC	
I _{RM}		275	A	
d _s	Creeping distance on surface	12.7	mm	
d _A	Creepage distance in air	9.6	mm	
a	Maximum allowable acceleration	50	m/s ²	

Data according to IEC 60747 and refer to a single diode unless otherwise stated.

Dimensions in mm (1 mm = 0.0394")



Threaded spacer for higher Anode /
Cathode construction:

Type **ZY 250** (material brass)

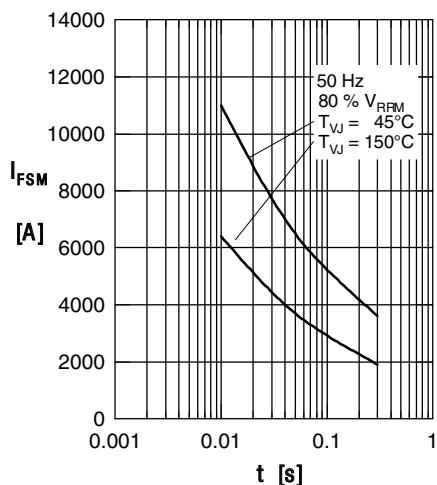


Fig. 1 Surge overload current
 I_{FSM} : Crest value, t : duration

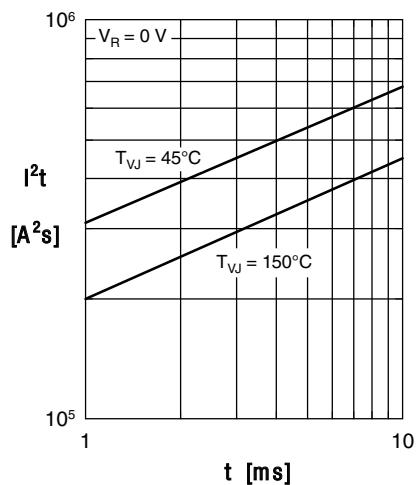


Fig. 2 I^2t versus time (1-10 ms)

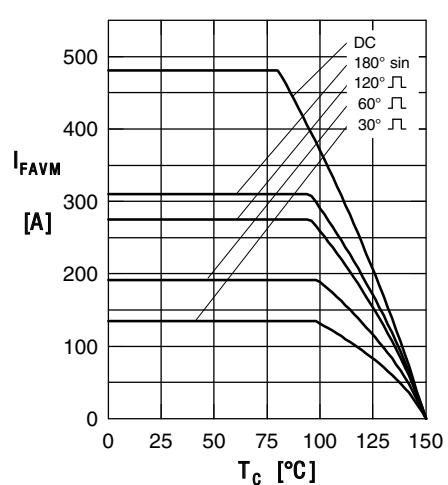


Fig. 3 Maximum forward current
at case temperature

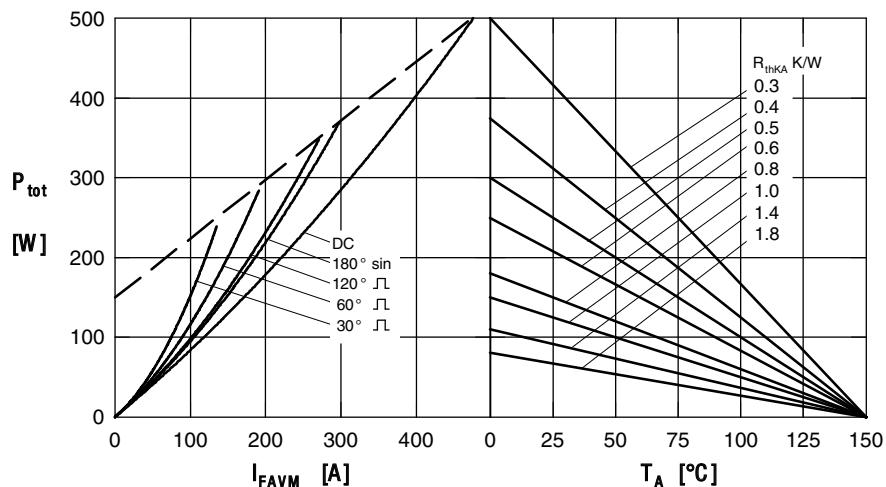


Fig. 4 Power dissipation versus forward current
and ambient temperature (per diode)

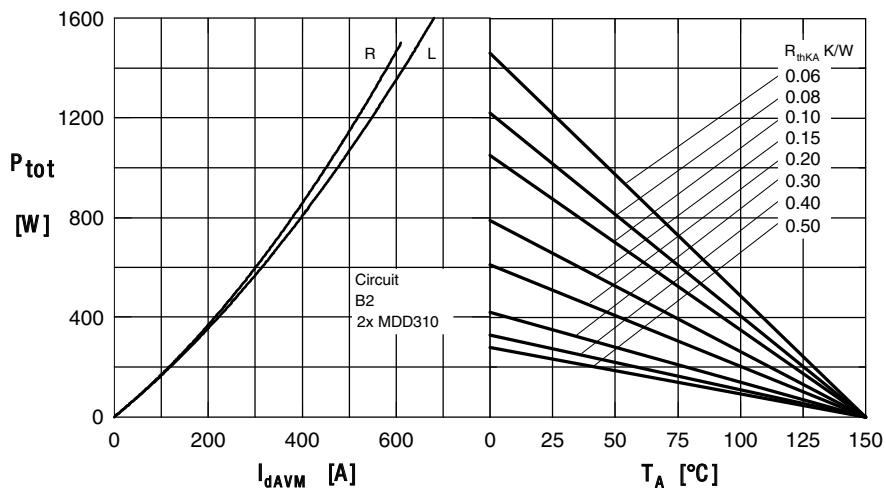


Fig. 5 Single phase rectifier bridge: Power dissipation vs. direct output current
and ambient temperature R = resistive load, L = inductive load

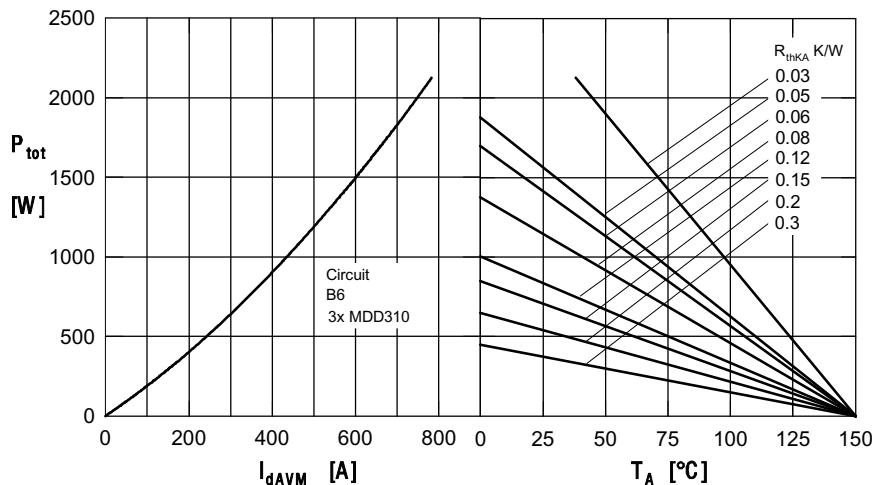


Fig.6 Three phase rectifier bridge: Power dissipation versus direct output current and ambient temperature

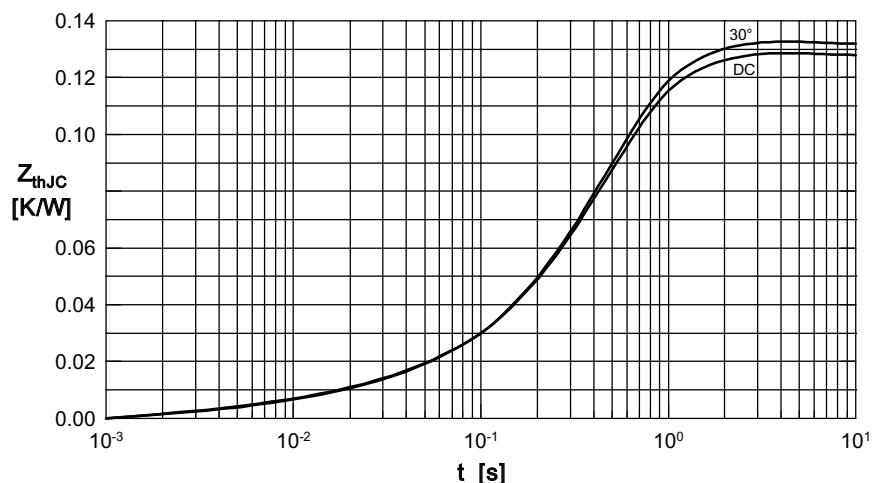


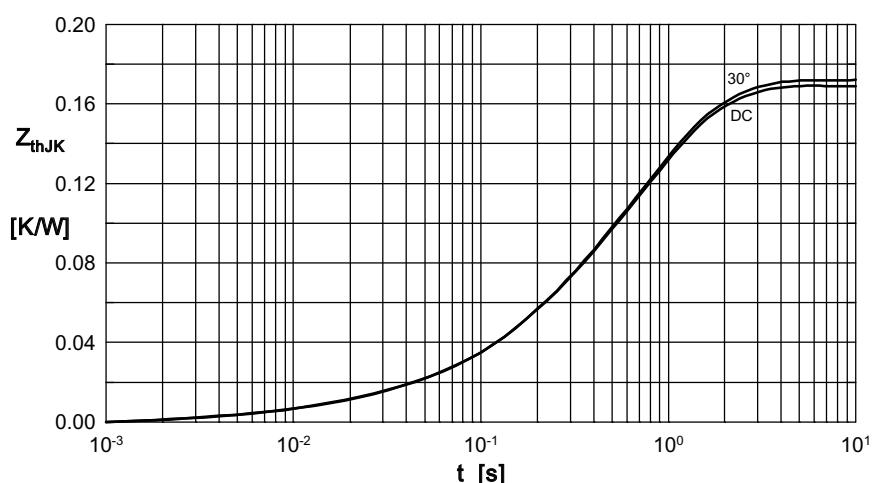
Fig. 7 Transient thermal impedance junction to case (per diode)

R_{thJC} for various conduction angles d:

d	R _{thJC} [K/W]
DC	0.129
180°	0.131
120°	0.132
60°	0.132
30°	0.133

Constants for Z_{thJC} calculation:

i	R _{thi} [K/W]	t _i [s]
1	0.0035	0.0099
2	0.0165	0.168
3	0.1091	0.456



R_{thJK} for various conduction angles d:

d	R _{thJK} (K/W)
DC	0.169
180°	0.171
120°	0.172
60°	0.172
30°	0.173

Constants for Z_{thJK} calculation:

i	R _{thi} (K/W)	t _i (s)
1	0.0035	0.0099
2	0.0165	0.168
3	0.1091	0.456
4	0.04	1.36

Fig. 8 Transient thermal impedance junction to heatsink (per diode)