

HKKD250A 1800V...SERIES

FEATURES

- * International standard package

- * Planar passivated chips

- * Isolation voltage 3600 V~

ADVANTAGES

- * Space and weight savings

- * Simple mounting with two screws

- * Improved temperature and power cycling

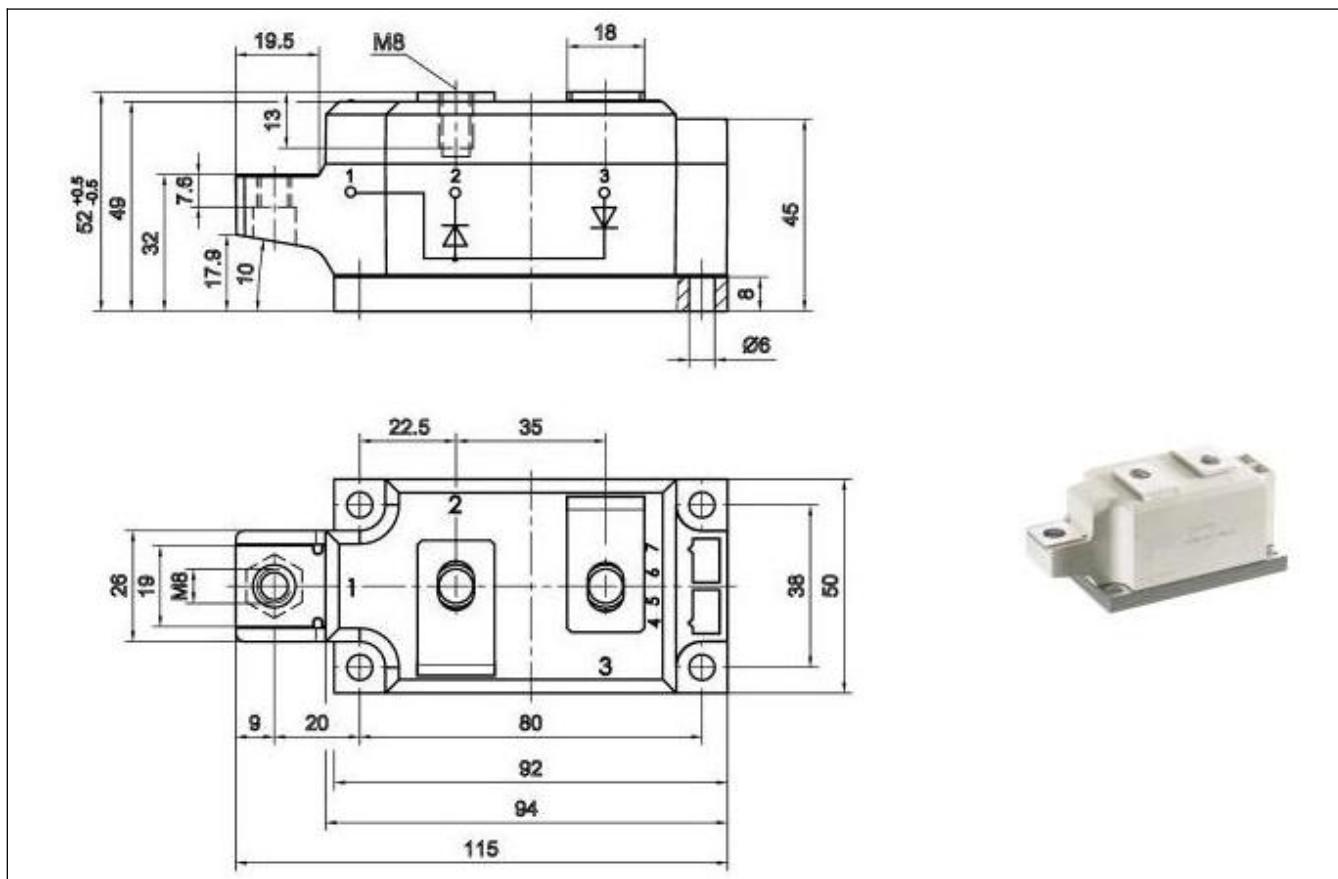
- * Reduced protection circuits

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS}	T _{VJ} =T _{VJM}	400	
I_{FAVM}	T _C =100°C; 180° sine	250	A
I_{TSM}, I_{2t}	T _{VJ} =45°C t=10ms (50Hz), sine V _R =0 t=8.3ms (60Hz), sine	11500 12200	A
	T _{VJ} =T _{VJM} t=10ms(50Hz), sine V _R =0 t=8.3ms(60Hz), sine	9600 10200	
I_{i2dt}	T _{VJ} =45°C t=10ms (50Hz), sine V _R =0 t=8.3ms (60Hz), sine	662000 620000	A _{2s}
	T _{VJ} =T _{VJM} t=10ms(50Hz), sine V _R =0 t=8.3ms(60Hz), sine	460000 430000	
T_{VJ} T_{VJM} T_{stg}		-40...+125 150 -40...+125	°C
V_{ISOL}	50/60Hz, RMS t=1min I _{ISOL} ≤1mA t=1s	3000 3600	V~
M_d	Mounting torque (M5) Terminal connection torque (M8)	2.5-5/22-24 12-13/106-132	Nm/lb.in.
Weight	Typical including screws	800	g

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Symbol	Test Conditions	Maximum Ratings	Unit
IRRM	TVJ=TVJM; VR=VRRM; VD=VDRM	40	mA
VF	I _F =600A; TVJ=25°C	1.2	V
VTO	For power-loss calculations only	0.75	V
rT	TVJ=TVJM	0.63	mΩ
Qs	TVJ=125°C; I _F =400A; -di/dt=50A/us	760	uC
IRM		275	A
Rthjc	Per diode;DC current	0.129	K/W
	Per module	0.065	
Rthjk	Per diode;DC current	0.169	K/W
	Per module	0.0845	
ds	Creepage distance on surface	12.7	mm
dA	Strike distance through air	9.6	mm
a	Maximum allowable acceleration	50	m/s ²

Outline Table



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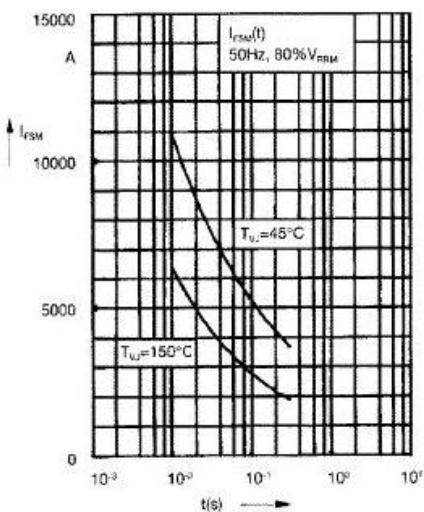


Fig. 1 Surge overload current
 I_{FSM} : Crest value, t : duration

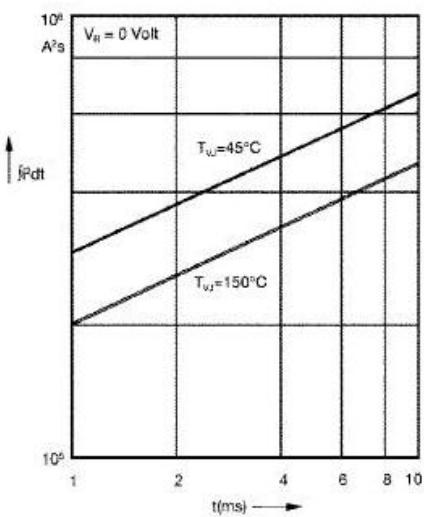


Fig. 2 $\int i^2 dt$ versus time (1-10 ms)

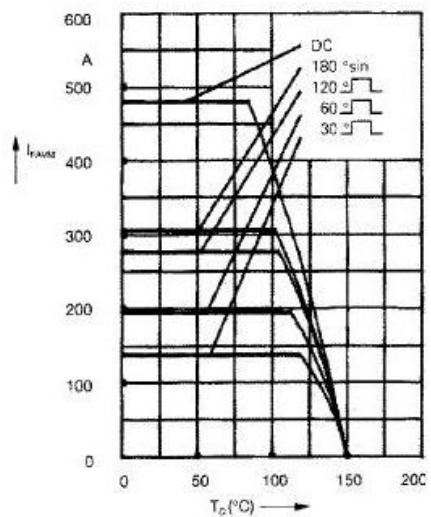


Fig. 2a Maximum forward current at case temperature

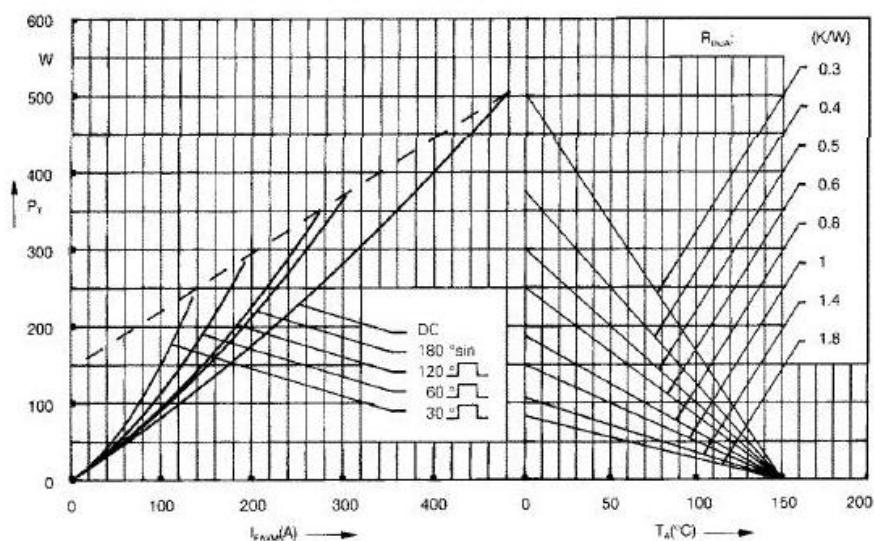


Fig. 3 Power dissipation versus forward current and ambient temperature (per diode)

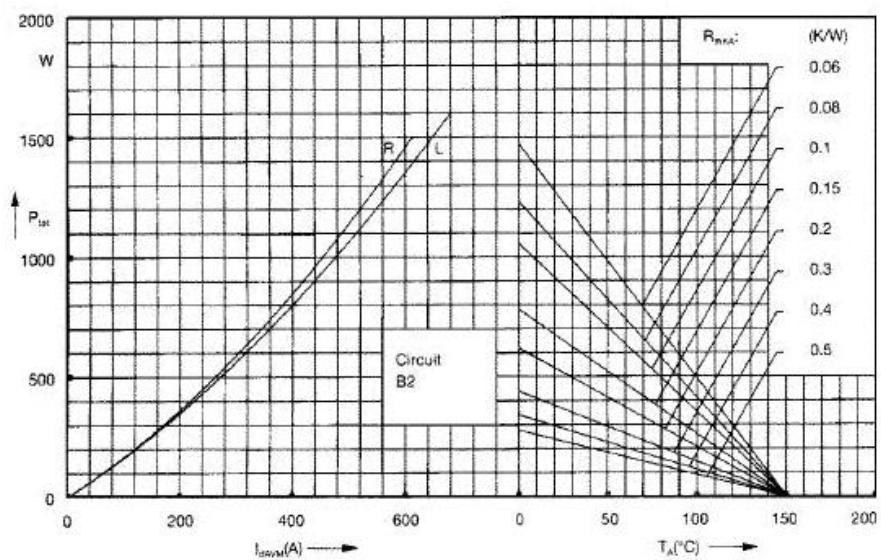


Fig. 4 Single phase rectifier bridge:
Power dissipation versus direct output current and ambient temperature
R = resistive load
L = inductive load

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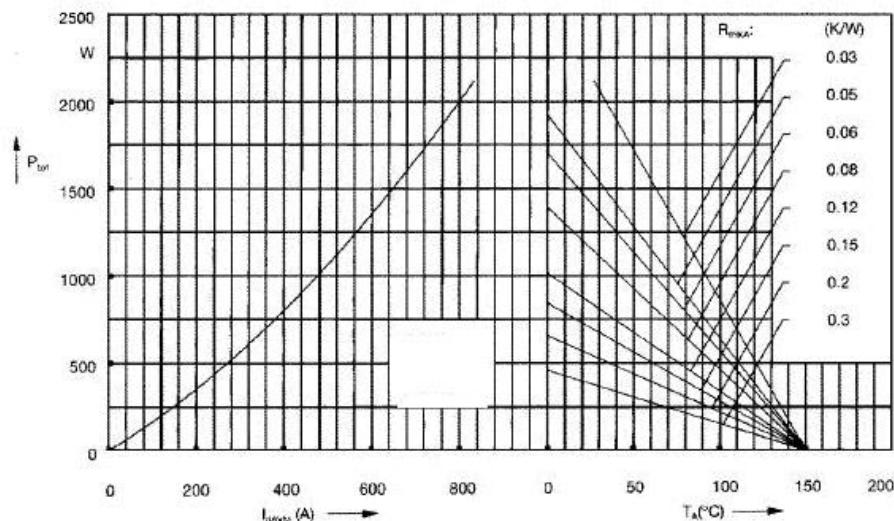


Fig. 5 Three phase rectifier bridge:
Power dissipation versus direct
output current and ambient
temperature

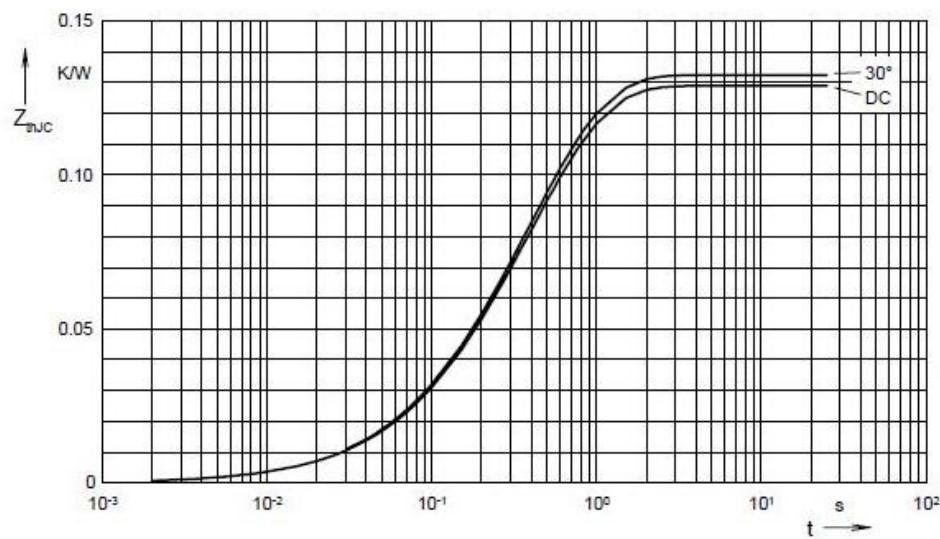


Fig. 6 Transient thermal impedance
junction to case (per diode)

R_{thJC} for various conduction angles d:

d	R_{thJC} (K/W)
DC	0.129
180°C	0.131
120°C	0.132
60°C	0.132
30°C	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

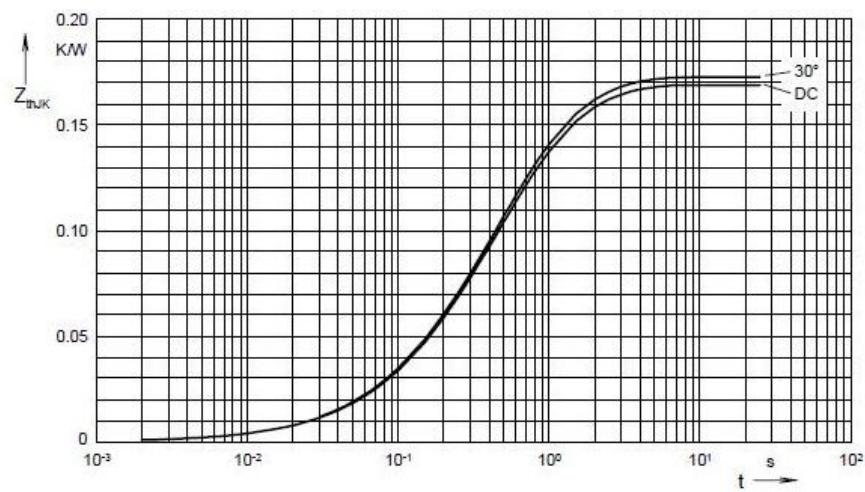


Fig. 7 Transient thermal impedance
junction to heatsink (per diode)

R_{thJK} for various conduction angles d:

d	R_{thJK} (K/W)
DC	0.169
180°C	0.171
120°C	0.172
60°C	0.172
30°C	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