

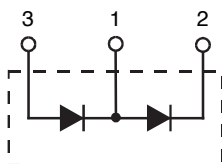
MDD95

Features

- International standard package, JEDEC TO-240 AA
- Direct copper bonded Al_2O_3 -ceramic base plate
- Isolation voltage 3600 V~

Typical Applications

- Supplies for DC power equipment
- DC supply for PWM inverter
- Field supply for DC motors
- Battery DC power supplies



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Symbol	MDD95-08N1B	MDD95-12N1B	MDD95-16N1B	MDD95-18N1B	MDD95-22N1B	Units
VRRM, VDRM	800	1200	1600	1800	2200	V
VRSM, VDSM	900	1300	1700	1900	2300	V

Symbol	Conditions	Values	Units
IFRMS	$T_{vj}=T_{vjM}$	180	A
IFAVM	sin.180; $T_c=105^\circ\text{C}$;	120	A
IFSM	$T_{vj}=45^\circ\text{C}$; $t=10\text{ms}(50\text{Hz})$	2800	A
	$V_R=0$; $t=8.3\text{ms}(60\text{Hz})$	3300	A
	$T_{vj}=T_{vjM}$; $t=10\text{ms}(50\text{Hz})$	2500	A
	$V_R=0$; $t=8.3\text{ms}(60\text{Hz})$	2750	A
I ² t	$T_{vj}=45^\circ\text{C}$; $t=10\text{ms}(50\text{Hz})$	39200	A ² s
	$V_R=0$; $t=8.3\text{ms}(60\text{Hz})$	45000	A ² s
	$T_{vj}=T_{vjM}$; $t=10\text{ms}(50\text{Hz})$	31200	A ² s
	$V_R=0$; $t=8.3\text{ms}(60\text{Hz})$	31300	A ² s
Tvj		-40...+150	°C
TvjM		150	°C
T _{stg}		-40...+150	°C
V _{isol}	a.c.50Hz/60Hz; I _{ISOL} < 1 mA t=1s/1min.	3600/3000	V~
M _d	Mounting torque (M5)	2.5-4	Nm
	Terminal connection torque (M5)	2.5-4	Nm
Weight	Typical including screws	90	g

Symbol	Conditions	Values		Units
		typ.	max.	
I _R	V _R /V _D =V _{RRM} /V _{DRM} T _{vj} =T _{vjM}		15	mA
V _F	I _T , I _F =300A T _{vj} =25°C		1.43	V
V _{T0}	For power-loss calculations only 			

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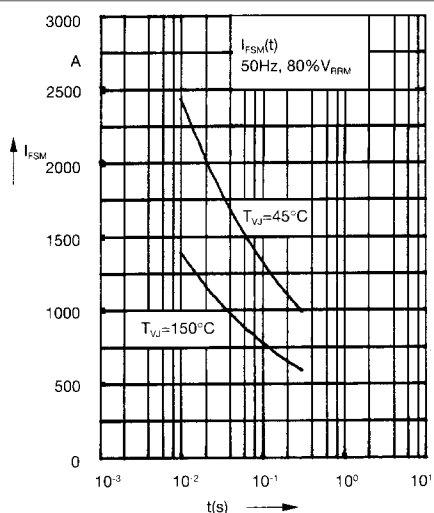


Fig. 1 Surge overload current
 I_{FSM} : Crest value, t : duration

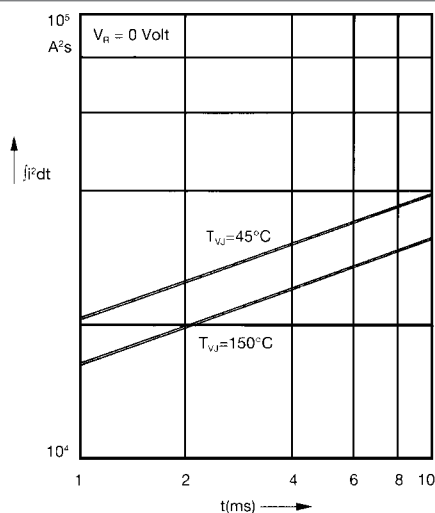


Fig. 2 j^2dt versus time (1-10 ms)

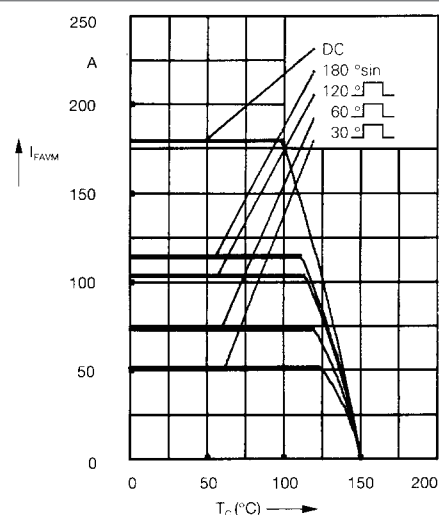


Fig. 2a Maximum forward current
at case temperature

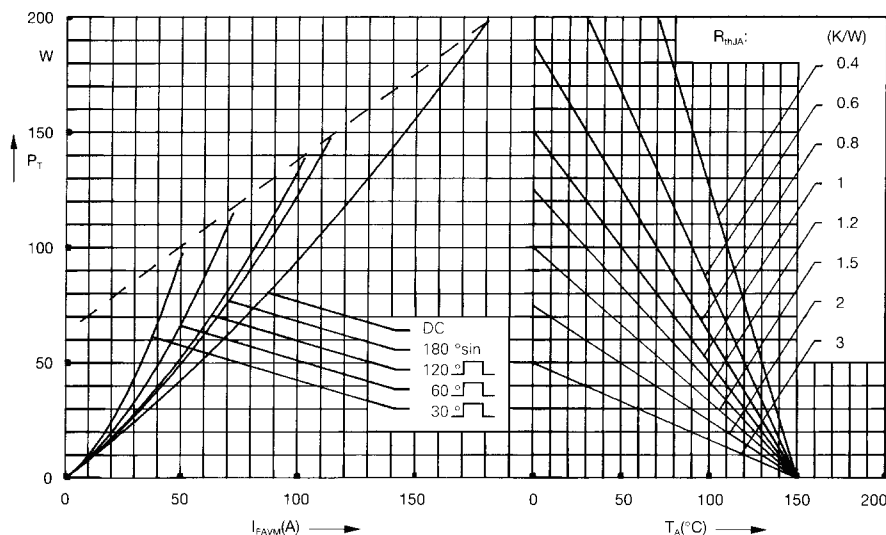


Fig. 3 Power dissipation versus
forward current and ambient
temperature (per diode)

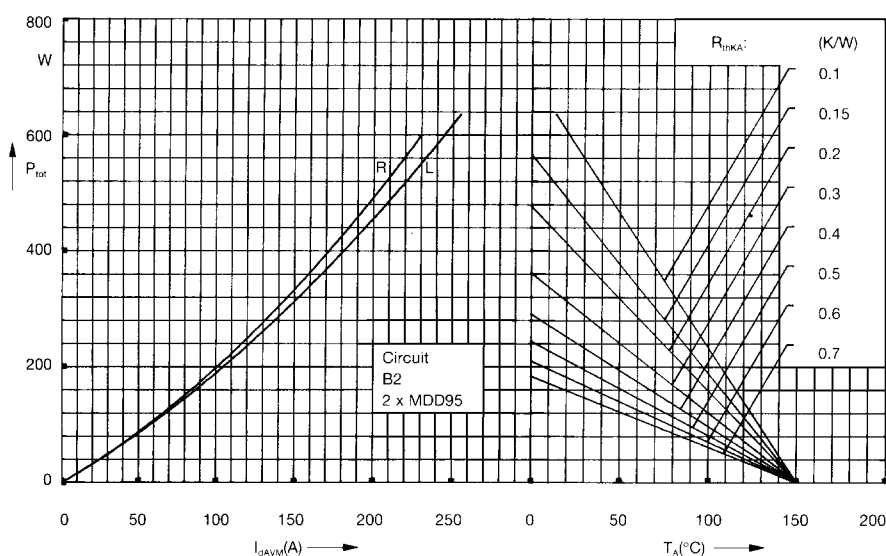


Fig. 4 Single phase rectifier bridge:
Power dissipation versus direct
output current and ambient
temperature
R = resistive load
L = inductive load

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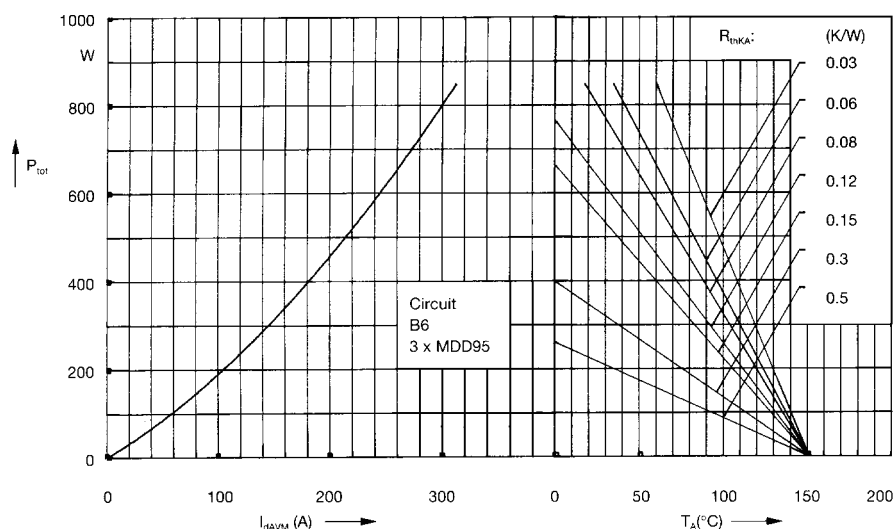


Fig. 5 Three phase rectifier bridge: Power dissipation versus direct output current and ambient temperature

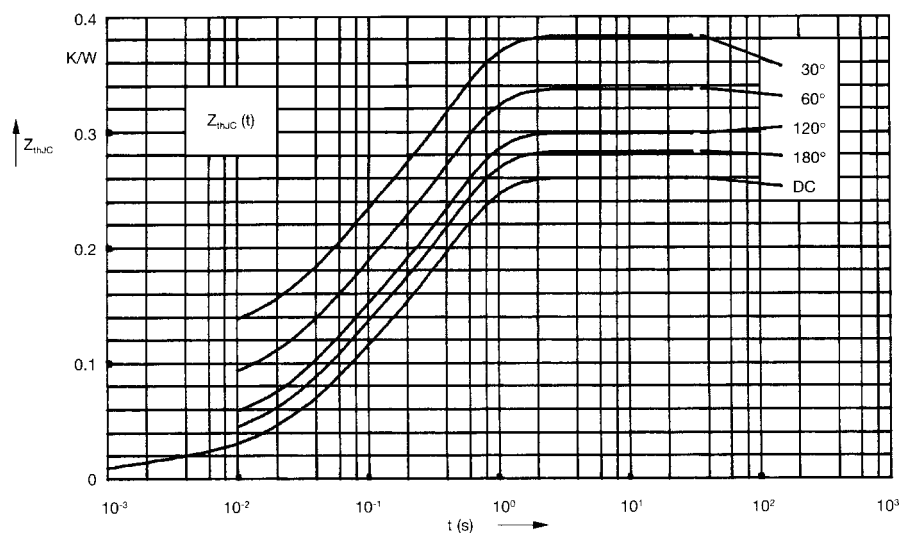


Fig. 6 Transient thermal impedance junction to case (per diode)

R_{thJC} for various conduction angles d:

d	R_{thJC} (K/W)
DC	0.26
180°	0.28
120°	0.30
60°	0.34
30°	0.38

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.013	0.0012
2	0.072	0.047
3	0.175	0.394

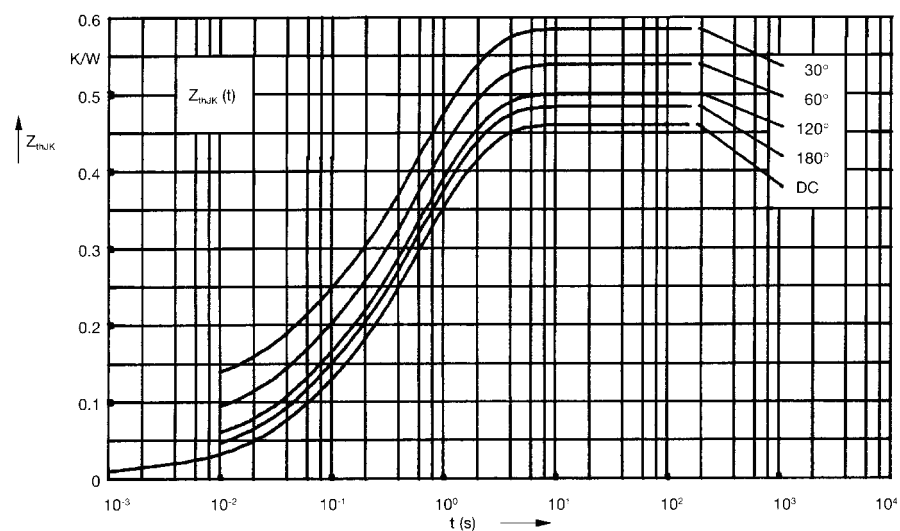


Fig. 7 Transient thermal impedance junction to heatsink (per diode)

R_{thJK} for various conduction angles d:

d	R_{thJK} (K/W)
DC	0.46
180°	0.48
120°	0.50
60°	0.54
30°	0.58

Constants for Z_{thJK} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.013	0.0012
2	0.072	0.047
3	0.175	0.394
4	0.2	1.32

