

FEATURES

* International standard package

APPLICATIONS

* DC motor control

* Softstart AC motor controller

* Light, heat and temperature control

ADVANTAGES

* Space and weight savings

* Simple mounting with two screws

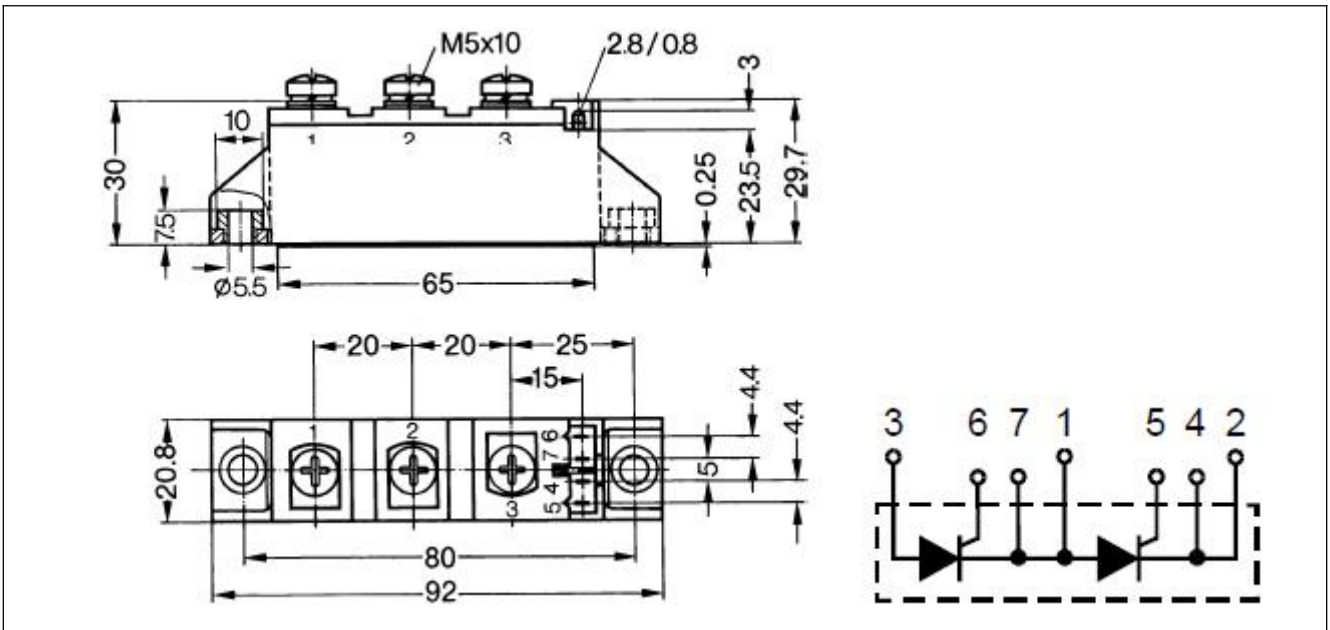
* Improved temperature and power cycling

* Reduced protection circuits

Symbol	Test Conditions	Maximum Ratings	Unit
I_{TRMS} , I_{FRMS} I_{TAVM} , I_{FAVM}	$T_{VJ}=T_{VJM}$ $T_C=85^{\circ}C$; 180° sine	152 95	A
I_{TSM} , I_{FSM}	$T_{VJ}=45^{\circ}C$ t=10ms (50Hz), sine $V_R=0$ t=8.3ms (60Hz), sine	2250 2400	A
	$T_{VJ}=T_{VJM}$ t=10ms(50Hz), sine $V_R=0$ t=8.3ms(60Hz), sine	2000 2150	
i_{zdt}	$T_{VJ}=45^{\circ}C$ t=10ms (50Hz), sine $V_R=0$ t=8.3ms (60Hz), sine	25300 23900	A _{2s}
	$T_{VJ}=T_{VJM}$ t=10ms(50Hz), sine $V_R=0$ t=8.3ms(60Hz), sine	20000 19100	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ repetitive, $I_T=45A$ f=50Hz, $t_p=200\mu s$ $V_D=2/3V_{DRM}$	150	A/us
	$I_G=0.45A$ non repetitive, $I_T=I_{TAVM}$ $di_G/dt=0.45A/\mu s$	500	
$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM}$; $V_{DR}=2/3V_{DRM}$ $R_{GK}=\ ;$ method 1 (linear voltage rise)	1000	V/us
P_{GM}	$T_{VJ}=T_{VJM}$ $t_p=30\mu s$	10	W
	$I_T=I_{TAVM}$ $t_p=300\mu s$	5	
P_{GAV}		0.5	W
V_{RGM}		10	V
T_{VJ} T_{VJM} T_{stg}		-40...+125 125 -40...+125	°C
V_{ISOL}	50/60Hz, RMS t=1min	3000	V~
	$I_{ISOL}<1mA$ t=1s	3600	
M_d	Mounting torque (M5)	2.5-4.0/22-35	Nm/lb.in.
	Terminal connection torque (M5)	2.5-4.0/22-35	
Weight	Typical including screws	90	g

Symbol	Test Conditions	Maximum Ratings	Unit
IRRM, IDRM	TVJ=TVJM; VR=VRRM; VD=VDRM	5	mA
VT, VF	IT, IF=95A; TVJ=25oC	1.30	V
VTO	For power-loss calculations only (TVJ=125oC)	0.8	V
rT		2.4	mΩ
VGT	VD=6V; TVJ=25oC TVJ=-40oC	2.5 2.6	V
IGT	VD=6V; TVJ=25oC TVJ=-40oC	150 200	mA
VGD	TVJ=TVJM; VD=2/3VDRM	0.2	V
IGD		10	mA
IL	TVJ=25oC; tp=10us; VD=6V IL IG=0.45A; diG/dt=0.45A/us	450	mA
IH	TVJ=25oC; VD=6V; RGK=	200	mA
tgD	TVJ=25oC; VD=1/2VDRM IG=0.45A; diG/dt=0.45A/us	2	us
tq	TVJ=TVJM; IT=20A; tp=200us; -di/dt=10A/us typ. VR=100V; dv/dt=20V/us; VD=2/3VDRM	185	us
QS	TVJ=TVJM; IT, IF=25A; -di/dt=0.64A/us	170	uC
IRM		45	A
RthJC	per thyristor/diode; DC current per module	0.22 0.11	K/W
RthJK	per thyristor/diode; DC current per module	0.42 0.21	K/W
dS	Creeping 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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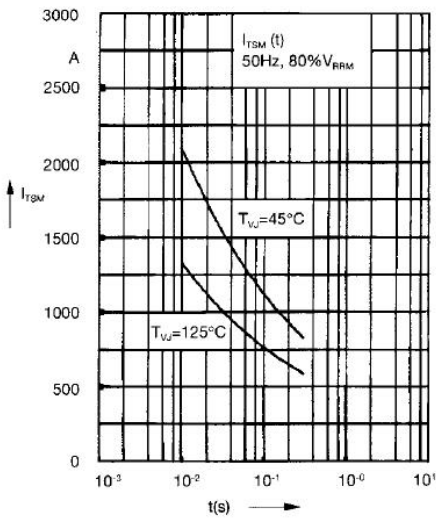


Fig. 3 Surge overload current
 I_{TSM} , I_{FSM} : Crest value, t: duration

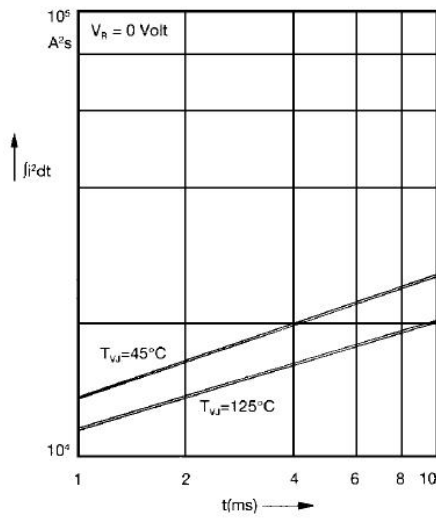


Fig. 4 $\int i^2 dt$ versus time (1-10 ms)

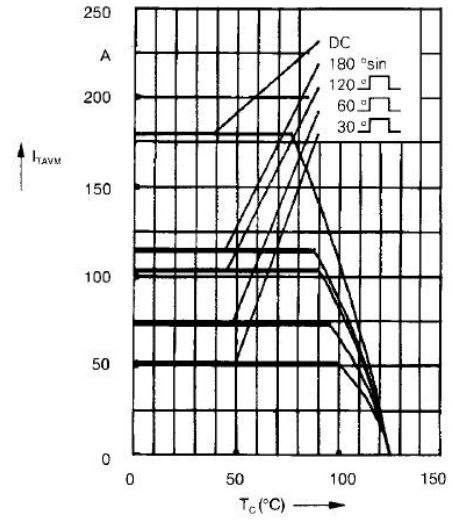


Fig. 4a Maximum forward current
at case temperature

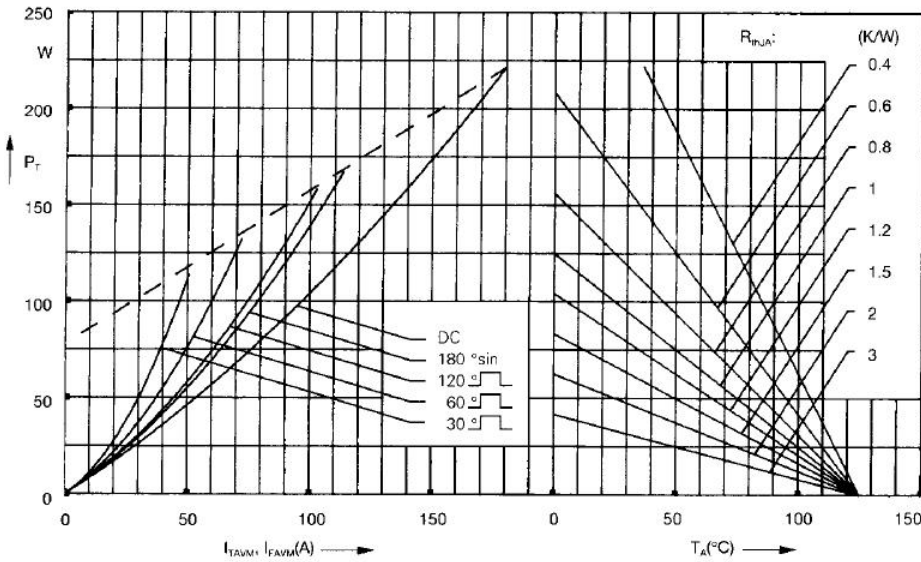


Fig. 5 Power dissipation versus on-state current and ambient temperature (per thyristor or diode)

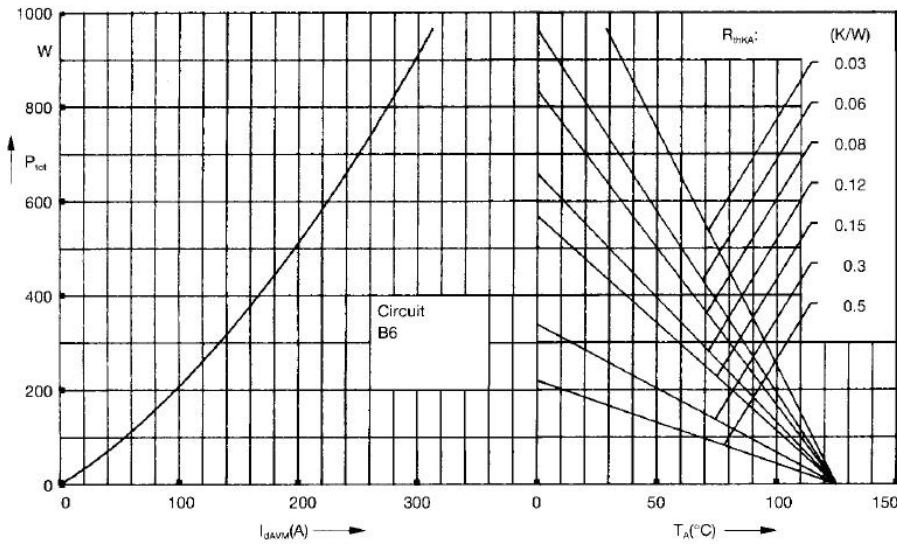


Fig. 6 Three phase rectifier bridge: Power dissipation versus direct output current and ambient temperature

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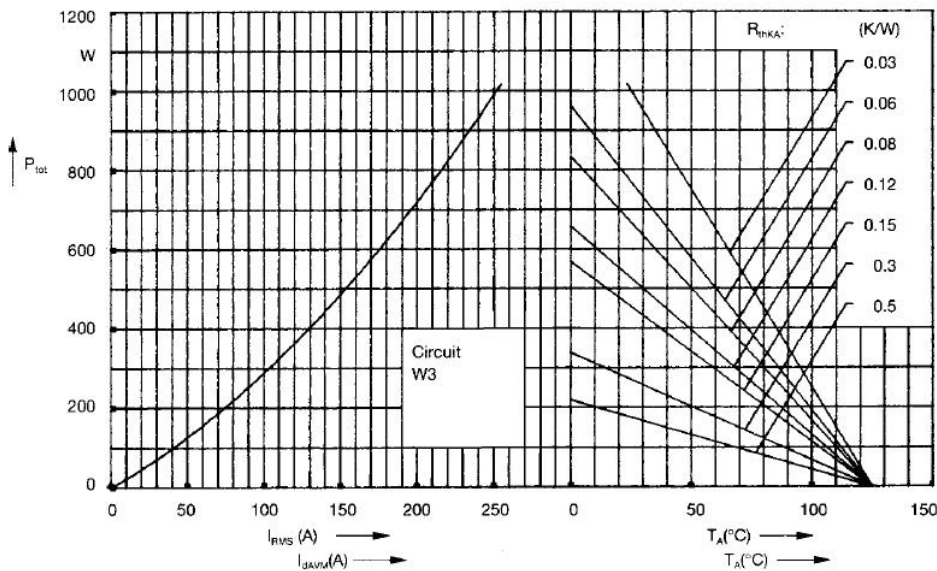


Fig. 7 Three phase AC-controller: Power dissipation versus RMS output current and ambient temperature

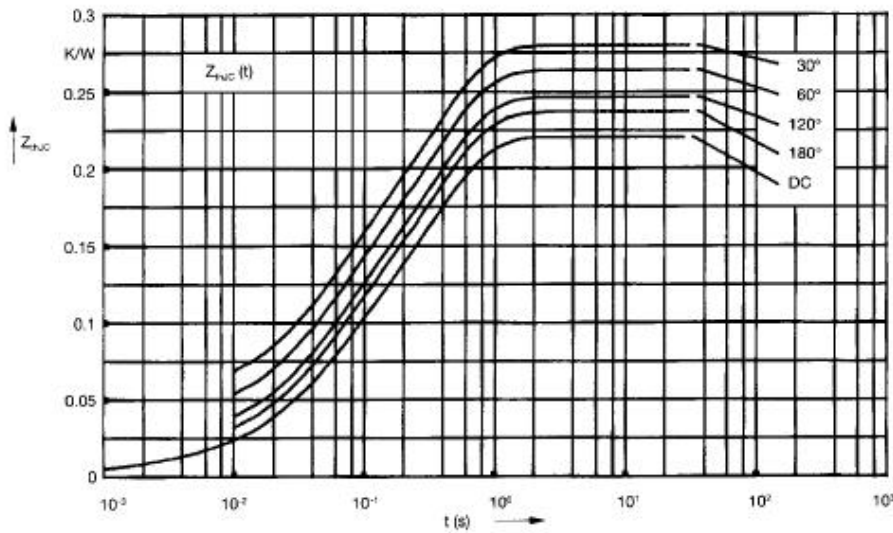


Fig. 8 Transient thermal impedance junction to case (per thyristor or diode)

R_{thJC} for various conduction angles d :

d	R_{thJC} (KW)
DC	0.22
180°	0.23
120°	0.25
60°	0.27
30°	0.28

Constants for Z_{thJC} calculation:

i	R_{thi} (KW)	t_i (s)
1	0.0066	0.0019
2	0.0678	0.0477
3	0.1456	0.344

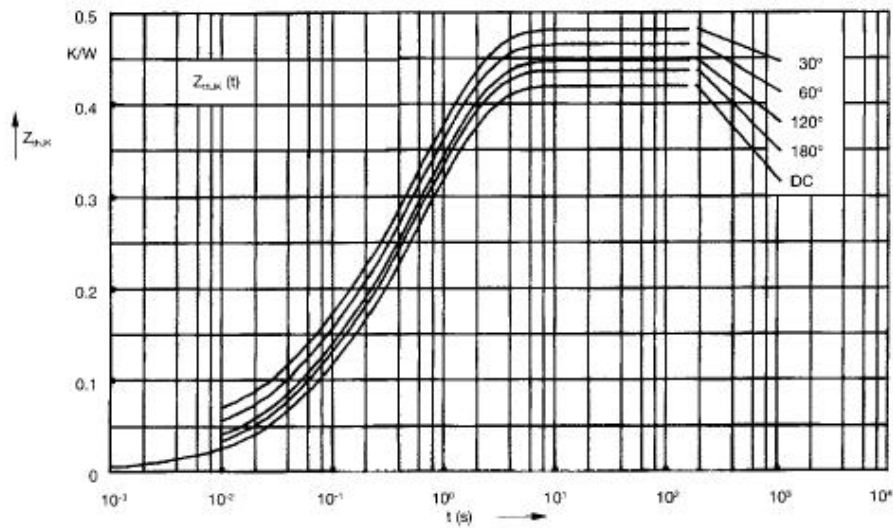


Fig. 9 Transient thermal impedance junction to heatsink (per thyristor or diode)

R_{thJK} for various conduction angles d :

d	R_{thJK} (KW)
DC	0.42
180°	0.43
120°	0.45
60°	0.47
30°	0.48

Constants for Z_{thJK} calculation:

i	R_{thi} (KW)	t_i (s)
1	0.0066	0.0019
2	0.0678	0.0477
3	0.1456	0.344
4	0.2	1.32