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}	$T_{VJ}=T_{VJM}$	800	A
I_{TAVM}, I_{FAVM}	$T_C=85^oC$; 180° sine	500	
I_{TSM}, I_{FSM}	$T_{VJ}=45^oC$ t=10ms (50Hz), sine	15000	A
	$V_R=0$ t=8.3ms (60Hz), sine	16000	
	$T_{VJ}=T_{VJM}$ t=10ms(50Hz), sine	13000	
	$V_R=0$ t=8.3ms(60Hz), sine	14400	
i_2dt	$T_{VJ}=45^oC$ t=10ms (50Hz), sine	1125000	A_2s
	$V_R=0$ t=8.3ms (60Hz), sine	1062600	
	$T_{VJ}=T_{VJM}$ t=10ms(50Hz), sine	845000	
	$V_R=0$ t=8.3ms(60Hz), sine	813000	
(di/dt)cr	$T_{VJ}=T_{VJM}$ repetitive, $I_T=45A$ f=50Hz, $t_P=200us$ $V_D=2/3V_{DRM}$	100	A/us
	$I_G=0.45A$ non repetitive, $I_T=I_{TAVM}$ $di_G/dt=0.45A/us$	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}	$T_{VJ}=T_{VJM}$ $t_p=30us$	120	W
	$I_T=I_{TAVM}$ $t_p=300us$	60	
P_{GAV}		20	W
V_{RGM}		10	V
T_{VJ}		-40...+125	
T_{VJM}		125	^oC
T_{stg}		-40...+125	
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	1.6	kg

| Symbol	Test Conditions	Maximum Ratings	Unit
IRRM, IDRM	TVJ=TVJM; VR=VRRM; VD=VDRM	40	mA
VT, VF	IT, IF=630A; TVJ=25oC	1.40	V
VTO	For power-loss calculations only (TVJ=125oC)	1.10	V
rT		0.38	mΩ
VGT	VD=6V; TVJ=25oC	2	V
	TVJ=-40oC	3	
IGT	VD=6V; TVJ=25oC	300	mA
	TVJ=-40oC	400	
VGD	TVJ=TVJM; VD=2/3VDRM	0.25	V
IGD		10	mA
IL	TVJ=25oC; tp=10us; VD=6V IL IG=0.45A; diG/dt=0.45A/us	400	mA
IH	TVJ=25oC; VD=6V; RGK=	300	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	350	us
QS	TVJ=TVJM; IT, IF=25A; -di/dt=0.64A/us	760	uC
IRM		275	A
RthJC	per thyristor/diode; DC current	0.129	K/W
	per module	0.0645	
RthJK	per thyristor/diode; DC current	0.169	K/W
	per module	0.0845	
dS	Creeping distance on surface	12.7	mm
dA	Strike distance through air	9.6	mm
a	Maximum allowable acceleration	50	m/s2

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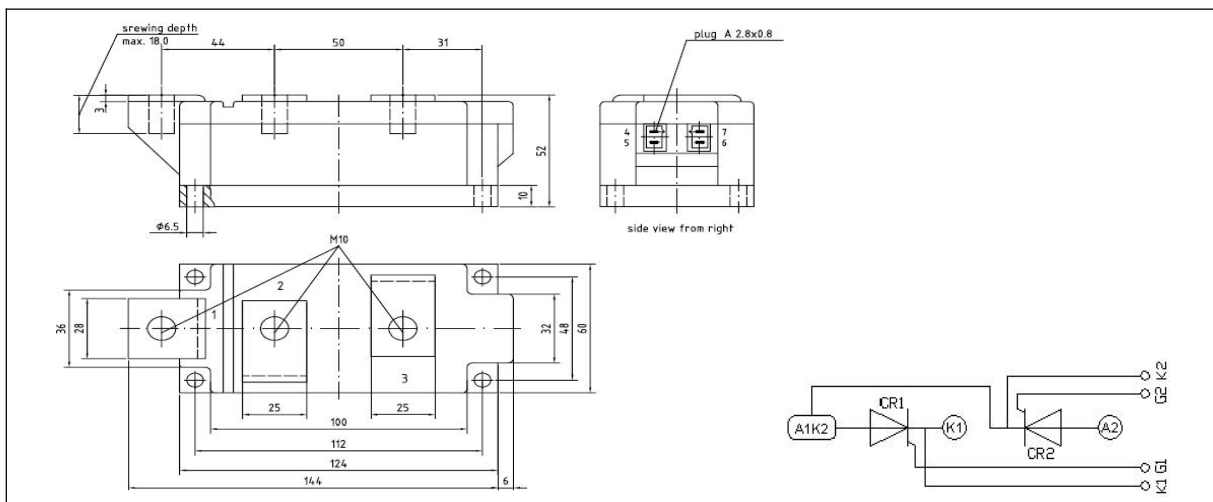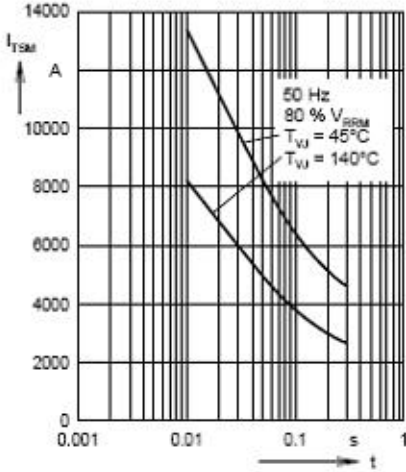
Fig. 1 Surge overload current
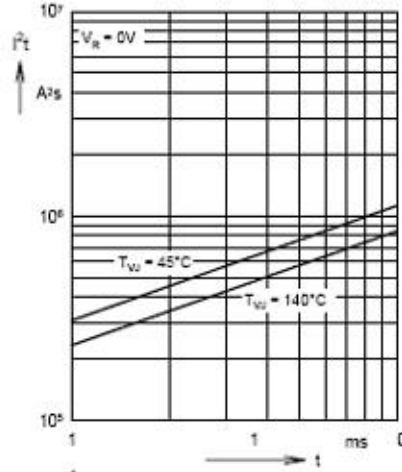I_{TSM}, I_{FSM}: Crest value, t: duration

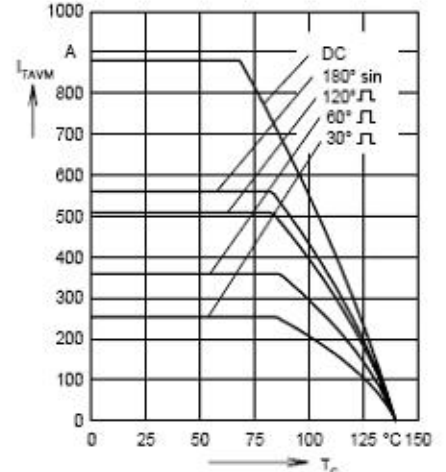Fig. 2 $\int i^2 dt$ versus time (1-10 ms)

Fig. 3 Maximum forward current
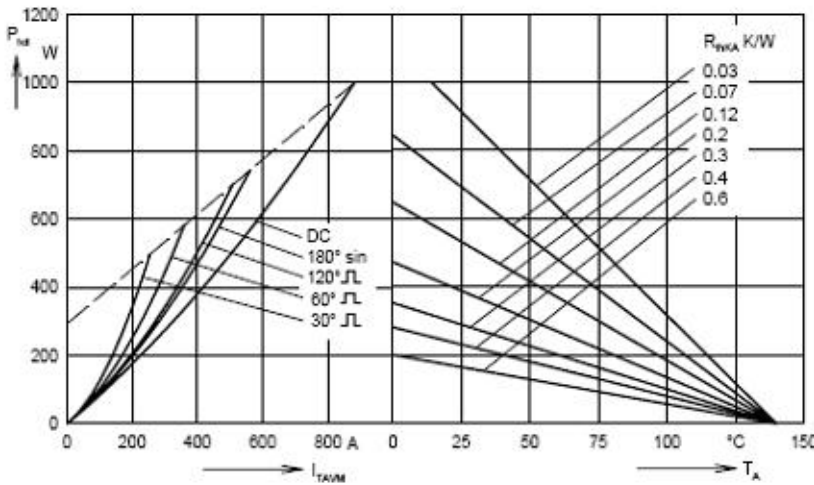at case temperature

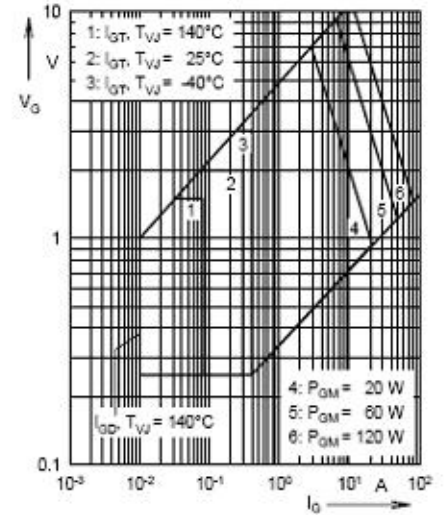Fig. 4 Power dissipation versus on-state current and ambient temperature
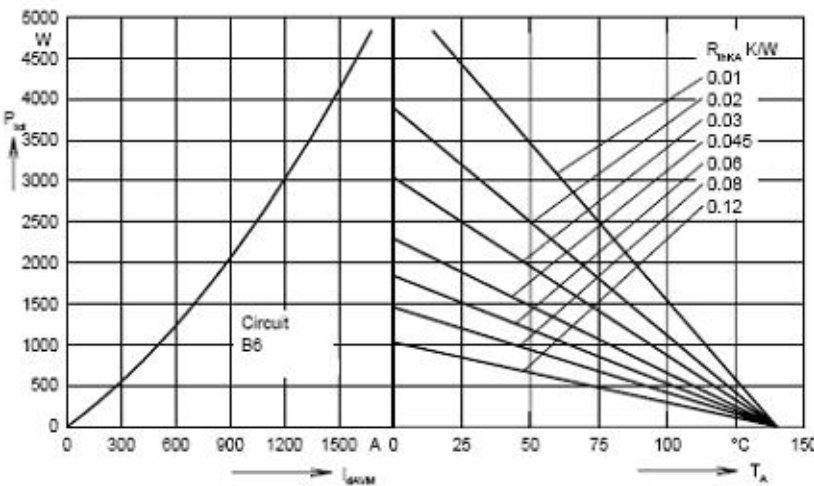
Fig. 5 Gate trigger characteristics

Fig. 6 Three phase rectifier bridge: Power dissipation versus direct output current
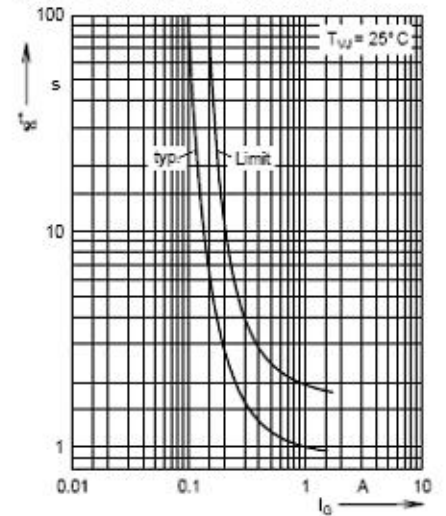and ambient temperature
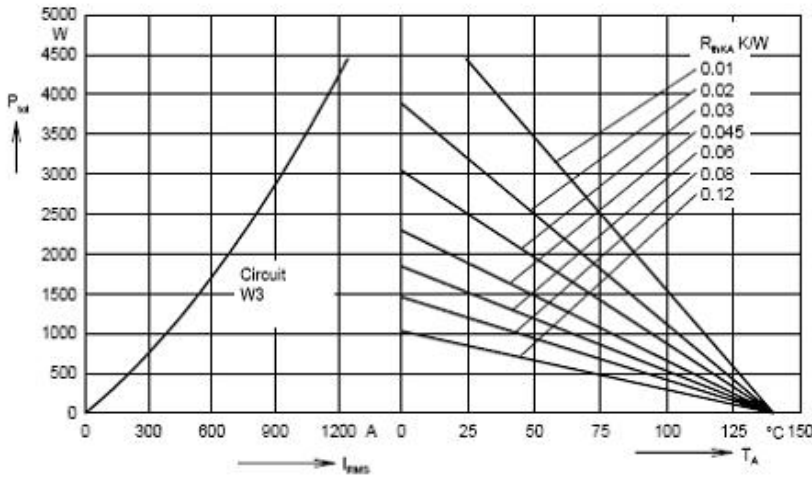
Fig. 7 Gate trigger delay time

Fig. 8 Three phase AC-controller:
Power dissipation versus RMS
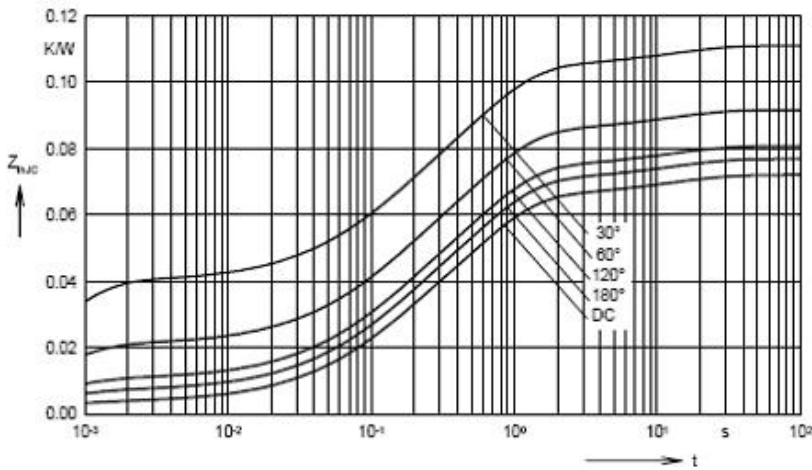output current and ambient
temperature

Fig. 9 Transient thermal impedance
junction to case (per thyristor)

R_{thJC} for various conduction angles d:

d	R_{thJC} (K/W)
DC	0.072
180ºC	0.0768
120ºC	0.081
60ºC	0.092
30ºC	0.111

Constants for Z_{thJC} calculation:

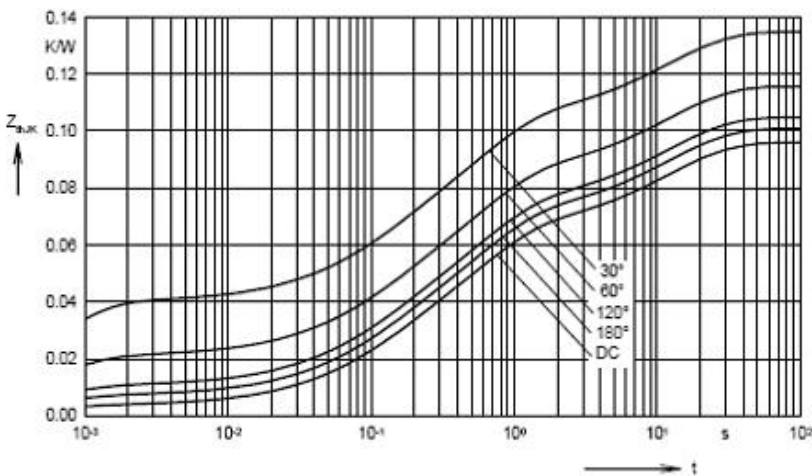| i	R_{thi} (K/W)	t_i (s)
1	0.0035	0.0054
2	0.0186	0.098
3	0.0432	0.54
4	0.0067	12

Fig.10 Transient thermal impedance
junction to heatsink (per thyristor)

R_{thJK} for various conduction angles d:

d	R_{thJK} (K/W)
DC	0.096
180ºC	0.1
120ºC	0.105
60ºC	0.116
30ºC	0.135

Constants for Z_{thJK} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.0035	0.0054
2	0.0186	0.098
3	0.0432	0.54
4	0.0067	12
5	0.024	12