

FEATURES

- * International standard package

APPLICATIONS

- * DC motor control
- * Softstart AC motor controller
- * Light, heat and temperature control

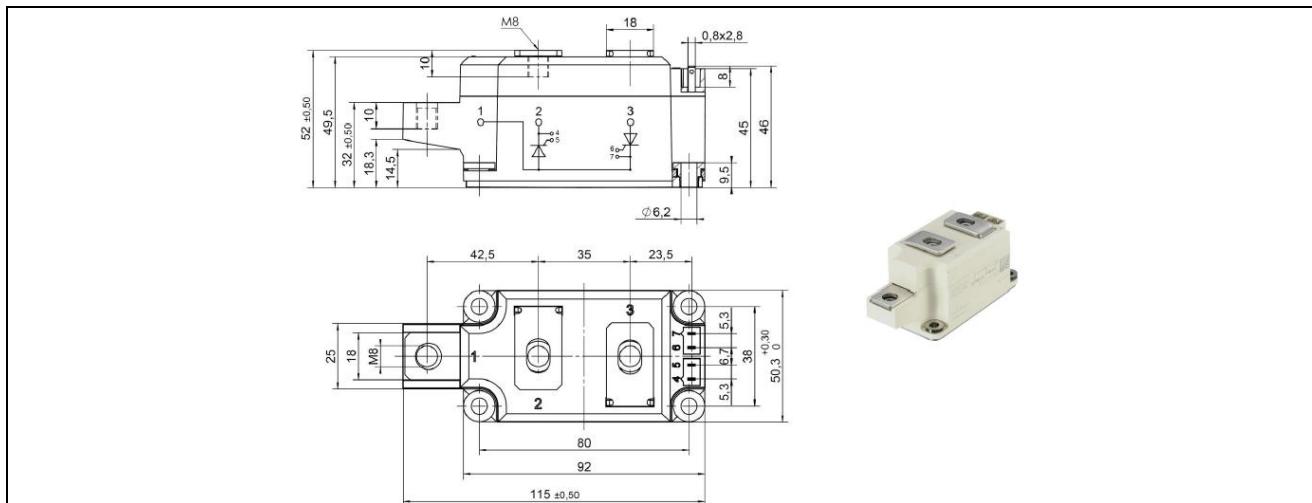
ADVANTAGES

- * Space and weight savings
- * Simple mounting with two screws
- * Improved temperature and power cycling

Symbol	Test Conditions	Maximum Ratings	Unit
I_{TRMS} , I_{FRMS}	$T_{VJ}=T_{VJM}$	560	
I_{TAVM} , I_{FAVM}	$T_c=85^\circ C$; 180° sine	350	A
I_{TSM} , I_{FSM}	$T_{VJ}=45^\circ C$ $t=10ms$ (50Hz), sine	9200	A
	$V_R=0$ $t=8.3ms$ (60Hz), sine	10100	
i_{2dt}	$T_{VJ}=T_{VJM}$ $t=10ms$ (50Hz), sine	8000	A_{2s}
	$V_R=0$ $t=8.3ms$ (60Hz), sine	8800	
	$T_{VJ}=45^\circ C$ $t=10ms$ (50Hz), sine	423000	
	$V_R=0$ $t=8.3ms$ (60Hz), sine	423000	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ repetitive, $I_T=45A$	320000	A/us
	$f=50Hz$, $t_p=200us$	321000	
	$V_D=2/3V_{DRM}$	100	
	$I_G=0.45A$ non repetitive, $I_T=I_{TAVM}$	500	
$(dv/dt)_{cr}$	$I_G/di/dt=0.45A/us$		
	$T_{VJ}=T_{VJM}$; $V_{DR}=2/3V_{DRM}$	1000	V/us
P_{GM}	$R_{GK}=?$; method 1 (linear voltage rise)		
	$T_{VJ}=T_{VJM}$ $t_p=30us$	120	W
P_{GAV}	$I_T=I_{TAVM}$ $t_p=300us$	60	W
		20	W
V_{RGM}		10	V
T_{VJ}		-40...+125	
T_{VJM}		125	$^\circ C$
T_{stg}		-40...+125	
V_{ISOL}	50/60Hz, RMS $t=1min$	3000	$V\sim$
	$I_{ISOL}<1mA$ $t=1s$	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	750	g

Symbol	Test Conditions	Maximum Ratings	Unit
IRRM, IDRM	TVJ=TVJM; VR=VRM; VD=VDRM	70	mA
VT, VF	IT, IF=350A; TVJ=25oC	1.20	V
VTO	For power-loss calculations only (TVJ=125oC)	1.7	V
rT		0.85	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	0.25	V
IGD		10	mA
IL	TVJ=25oC; tp=10us; VD=6V IL IG=0.45A; diG/dt=0.45A/us	300	mA
IH	TVJ=25oC; VD=6V; RGK=	150	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	200	us
QS	TVJ=TVJM; IT, IF=25A; -di/dt=0.64A/us	760	uC
IRM		275	A
RthJC	per thyristor/diode; DC current per module	0.129 0.0645	K/W
RthJK	per thyristor/diode; DC current per module	0.169 0.0845	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



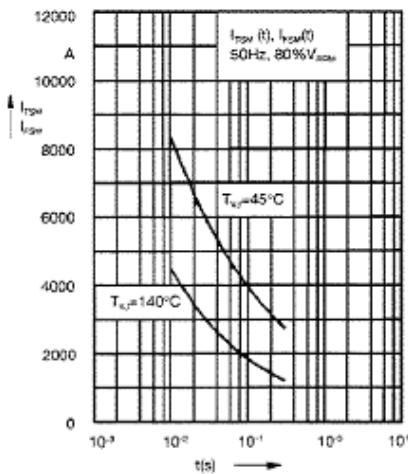


Fig. 1 Surge overload current
 I_{TSM}, I_{FSM} : Crest value, t : duration

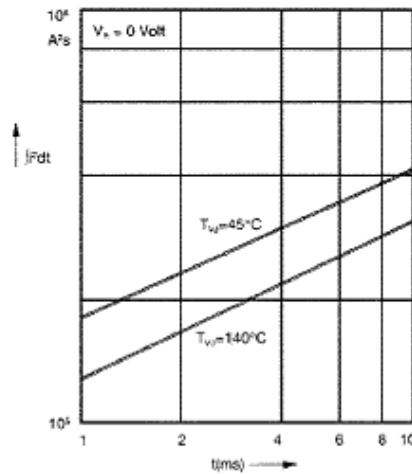


Fig. 2 $\int i^2 dt$ versus time (1-10 ms)

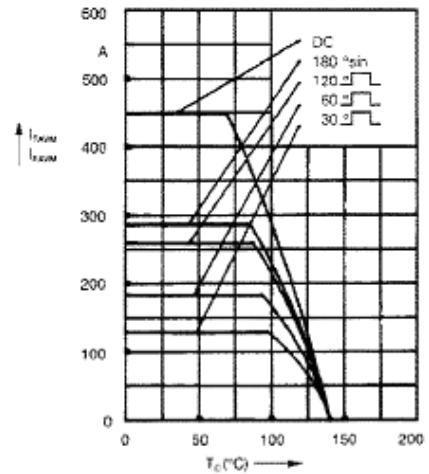


Fig. 2a Maximum forward current
at case temperature

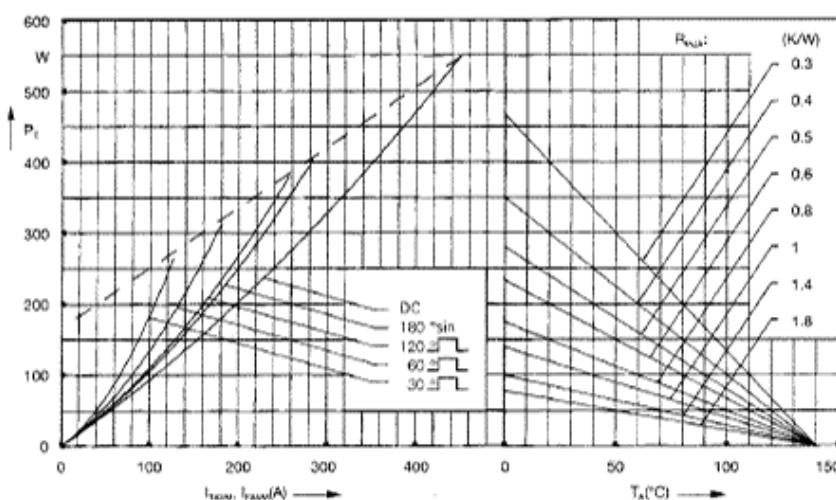


Fig. 3 Power dissipation versus on-state current and ambient temperature
(per thyristor or diode)

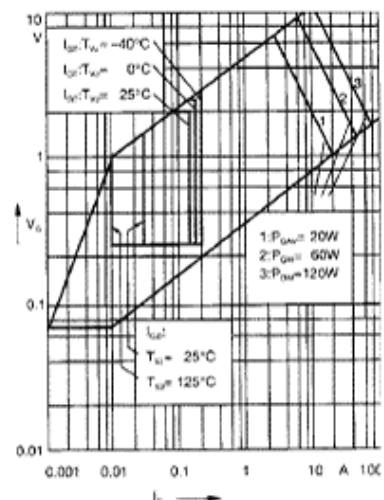


Fig. 4 Gate trigger characteristics

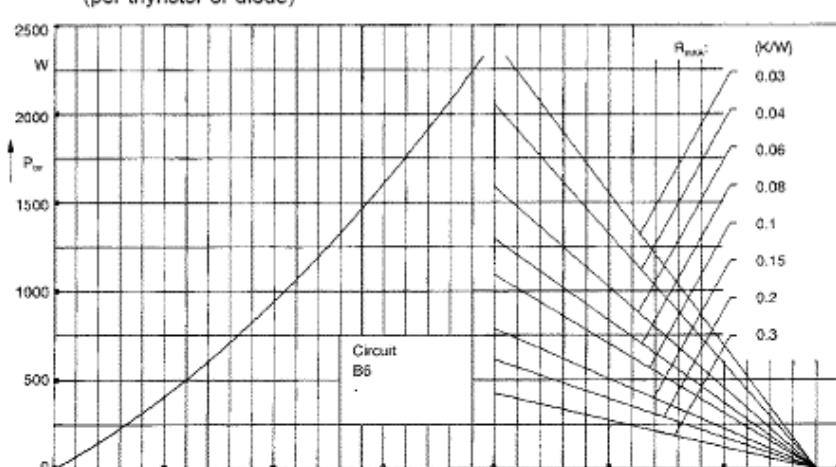


Fig. 5 Three phase rectifier bridge: Power dissipation versus direct output current
and ambient temperature

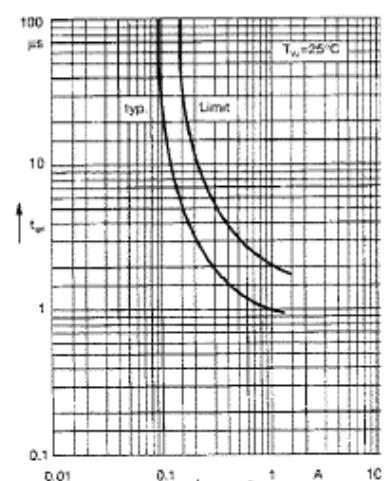


Fig. 6 Gate trigger delay time

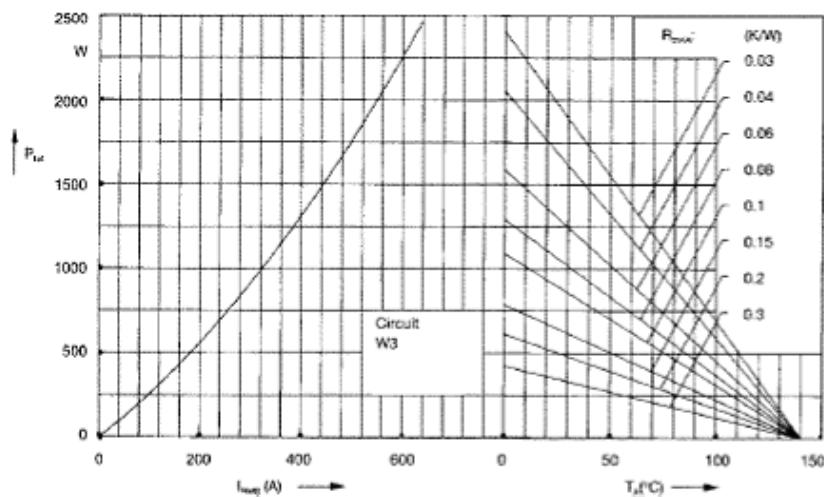


Fig. 7 Three phase AC-controller:
Power dissipation versus RMS
output current and ambient
temperature

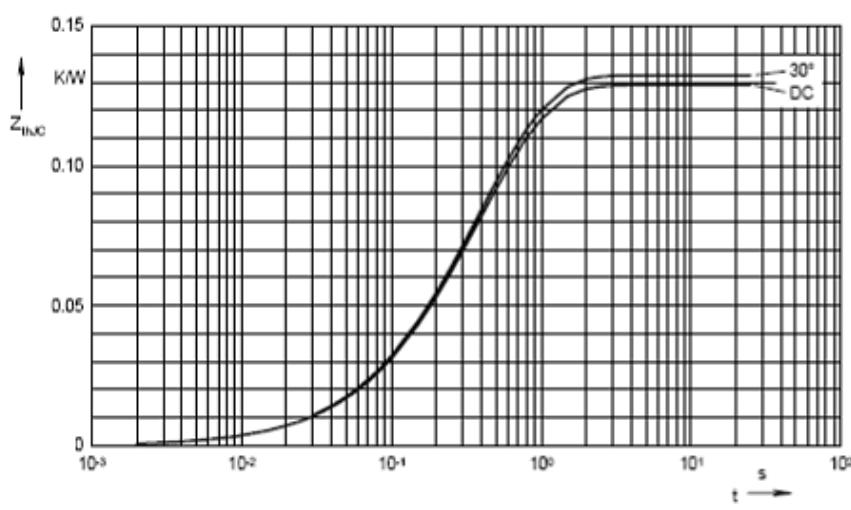


Fig. 8 Transient thermal impedance
junction to case (per thyristor or
diode)

R_{thJC} for various conduction angles d:

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

Constants for Z_{thJC} calculation:

i	R_{th} (K/W)	t_i (s)
1	0.0035	0.099
2	0.0165	0.168
3	0.1091	0.456

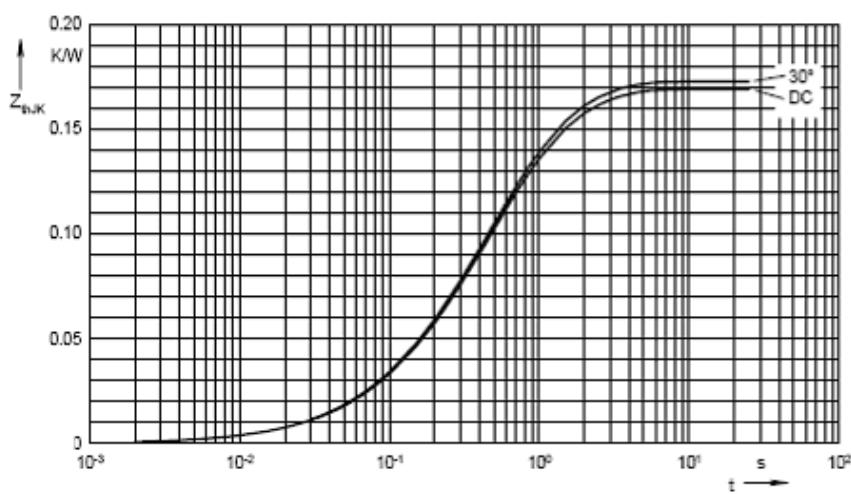


Fig. 9 Transient thermal impedance
junction to heatsink (per thyristor or
diode)

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_{th} (K/W)	t_i (s)
1	0.0033	0.099
2	0.0159	0.168
3	0.1053	0.456
4	0.04	1.36