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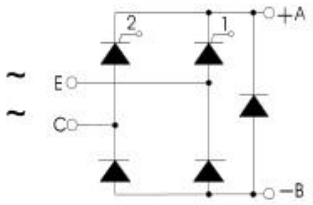
PSCH55

PRODUCT FEATURES

- Package with screw terminals
- Isolation voltage 3000V~
- Planar glass passivated chips
- Low forward voltage drop

APPLICATIONS

- Heat and temperature control for Industrial furnaces and chemical processes
- Motor control
- Power converter
- Lighting control



ABSOLUTE MAXIMUM RATINGS

T_C=25°C unless otherwise specified

Symbol	Parameter		Test Conditions	Values	Unit
$V_{RSM/DSM}$	Maximum None Repetitive Reverse Voltage		T_J =25°C	1700	V
$V_{RRM/DRM}$	Maximum Repetitive Reverse Voltage		T_J =25°C	1600	V
$I_{d(AV)}$	Average Forward Current		T_C=85°C	46	A
$I_{T(RMS)}$	RMS Forward Current		sin180°	72	A
$I_{TSM/FSM}$	Non-Repetitive Surge Forward Current		T_J = 45°C, 10ms(50Hz)	520	A
			T_J = 45°C, 8.3ms(60Hz)	560	A
			T_J = 125°C, 10ms(50Hz)	460	A
			T_J =125°C,8.3ms(60Hz)	500	A
I^2t	Value For Fusing		T_J = 45°C, 10ms(50Hz)	1350	A^2s
			T_J = 45°C, 8.3ms(60Hz)	1300	A^2s
			T_J = 125°C, 10ms(50Hz)	1050	A^2s
			T_J =125°C,8.3ms(60Hz)	1030	A^2s
V_{T0}	Threshold voltage	for power loss calculation only	T_J =125°C	0.85	V
r_T	Slope resistance		T_J =125°C	11	mΩ
I_{DD}	Reverse current ,drain current		V_{DD} = V_{RRM}	5	mA
V_T	Forward voltage drop		I_T =200A,T_J =25°C	1.64	V
P_{GM}	Max,gate power dissipation		tp=30us,T_c =125°C	10	W
			tp=500us,T_c =125°C	5	W
P_{GAV}	Average gate power dissipation			0.5	W
di/dt	Critical rate of rise of current		T_J =125°C repetitive ,I_T =150A	100	A/us

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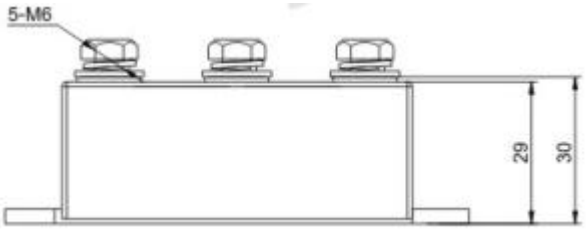
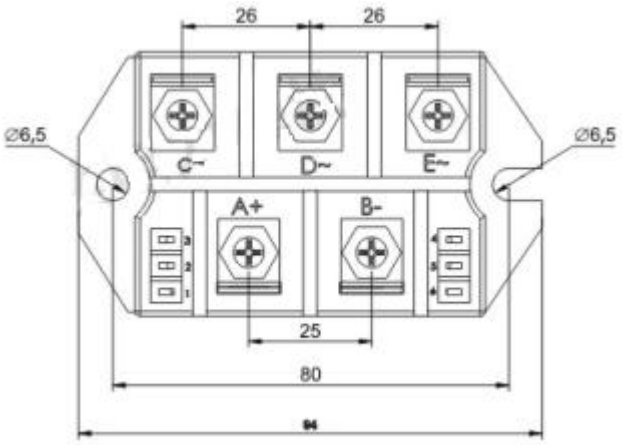
		T_J =125°C no-repet. ,I_T =23A	500	A/us
dv/dt	Critical rate of rise of voltage	T_J =125°C V = 2/3V_{RRM}	1000	V/us
I_H	Holding current	T_J = 25°C V_D= 6V	150	mA
I_L	Latching current	T_J = 25°C tp=30us I_G= 0.3A	200	mA
V_{GT}	Gate trigger voltage	V_D= 6V T_J = 25°C	1.0	V
		V_D= 6V T_J = -40°C	1.6	V
I_{GT}	Gate trigger current	V_D= 6V T_J = 25°C	100	mA
		V_D= 6V T_J = -40°C	150	mA
V_{GD}	Gate non-trigger voltage	V_D = 2/3V_{RRM} T_J =125°C	0.2	V
I_{GD}	Gate non-trigger current		5	mA
t_{gd}		T_J =25°C V = 1/2V_{RRM}	2	us
t_q		T_J =125°C,I_T =150A	150	us
T_J	Junction Temperature		-40 to +125	°C
T_{STG}	Storage Temperature Range		-40 to +125	°C
Torque	Module-to-Sink	Recommended（M6）	2.5-3.9(25-40)	Nm(kgfcm)
Torque	Module Electrodes	Recommended（M6）	2.5-3.9(25-40)	Nm(kgfcm)
$R_{\theta JC}$	Thermal resistance junction to case	Per module	0.24	k /W
$R_{\theta CH}$	Thermal resistance case to heatsink	Per module	0.262	k /W
V_{ISOL}	Isolation voltage	50/60Hz I_{ISOL}<1mA t=1s/1min	3000 / 2500	V





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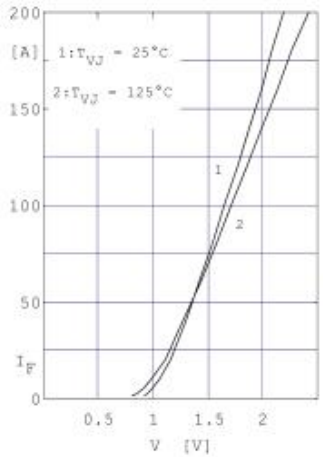

Fig. 1 Forward current vs. voltage drop per diode or thyristor

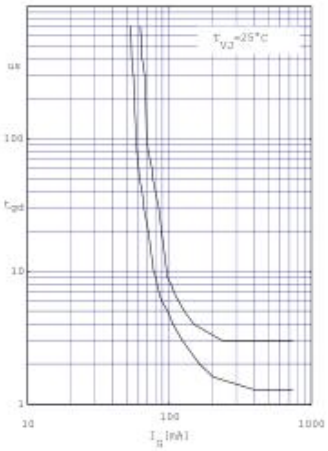

Fig. 2 Gate trigger delay time

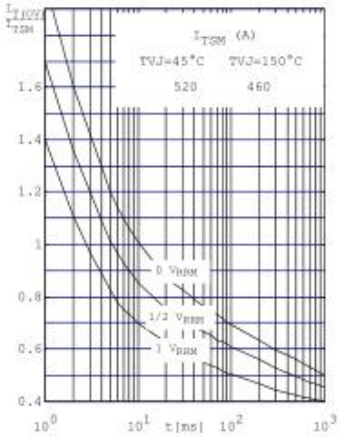

Fig. 3 Surge overload current per diode (or thyristor) I_{FSM}, I_{TSM}: Crest value t: duration

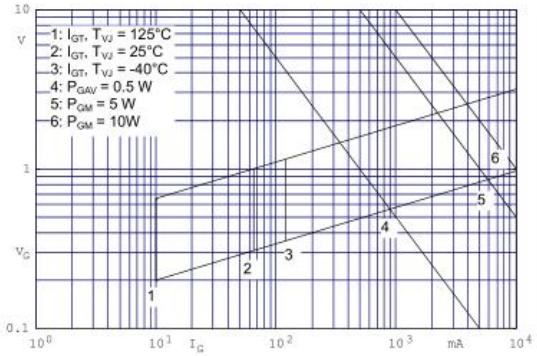

Fig.4 Gate trigger characteristic

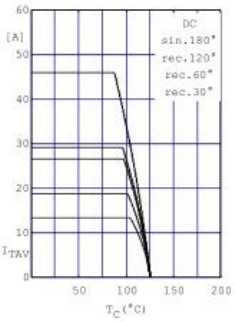

Fig.5 Maximum forward current at case temperature

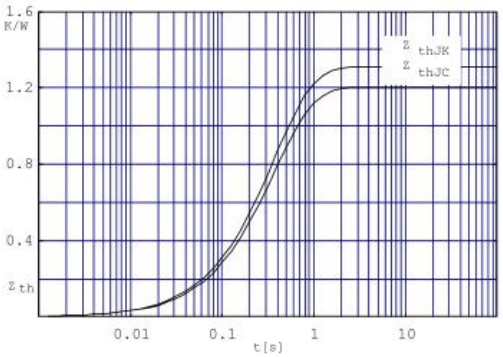

Fig.6 Transient thermal impedance per thyristor or diode (calculated)

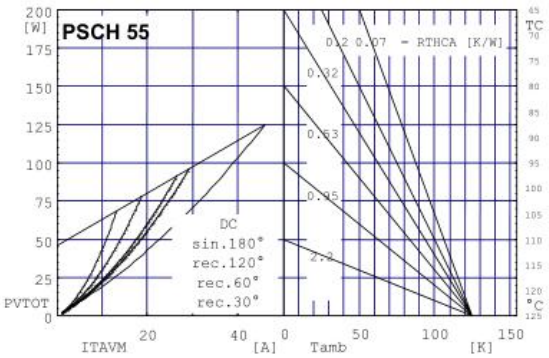

Fig. 7 Power dissipation vs. direct output current and ambient temperature