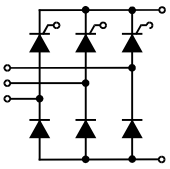
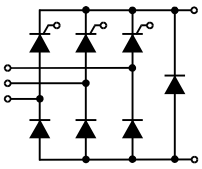
S3PHB70, S3PHBD70, S3PFB70

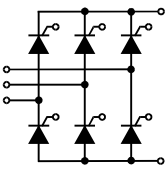
Three Phase Half Controlled Bridge Modules/Full Controlled Bridge



S3PHB70

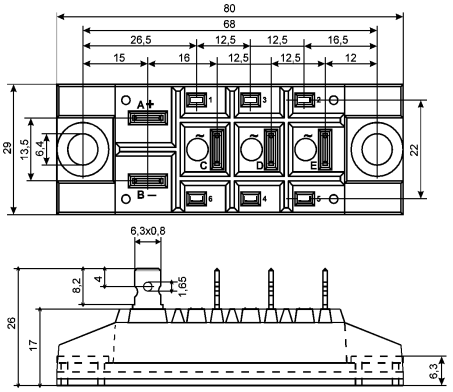


S3PHBD70



S3PFB70

Dimensions in mm (1mm=0.0394")



Type			V_{RSM} V	V_{RRM} V
S3PHB70G08	S3PHBD70G08	S3PFB70G08	900	800
S3PHB70G12	S3PHBD70G12	S3PFB70G12	1300	1200
S3PHB70G14	S3PHBD70G14	S3PFB70G14	1500	1400
S3PHB70G16	S3PHBD70G16	S3PFB70G16	1700	1600

Symbol	Test Conditions		Maximum Ratings	Unit
I_{dav} I_{davm} I_{FRMS},I_{TRMS}	T_C=85°C, module module per leg		70 70 36	A
I_{FSM},I_{TSM}	T_{VJ}=45°C V_R=0	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	550 600	A
	T_{VJ}=T_{VJM} V_R=0	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	500 550	
I^2t	T_{VJ}=45°C V_R=0	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1520 1520	A^2s
	T_{VJ}=T_{VJM} V_R=0	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1250 1250	
$(di/dt)_{cr}$	T_{VJ}=125°C f=50Hz, t_p=200us V_D=2/3V_{DRM} I_G=0.3A di_G/dt=0.3A/us	repetitive, I_T=50A non repetitive, I_T=1/2· I_{dav}	150 500	A/us
$(dv/dt)_{cr}$	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} I_T=I_{TAVM}	t_p=30us t_p=500us t_p = 10ms	10 5 1	W
T_{VJ} T_{VJM} T_{stg}			-40...+125 125 -40...+125	°C
V_{ISOL}	50/60Hz, RMS I_{ISOL}≤1mA	t=1min t=1s	2500 3000	V~
M_d	Mounting torque (M5) (10-32 UNF)		5 ± 15 % 44 ± 15 %	Nm/lb.in.
Weight			50	g

Sirectifier®

S3PHB70, S3PHBD70, S3PFB70

Three Phase Half Controlled Bridge Modules/Full Controlled Bridge

Symbol	Test Conditions	Characteristic Values	Unit
I_D,I_R	$T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$; $V_D=V_{DRM}$	5	mA
V_T, V_F	I_T, I_F=300A; $T_{VJ}=25^oC$	1.64	V
V_{TO}	For power-loss calculations only	0.85	V
r_T		11	mΩ
V_{GT}	V_D=6V; $T_{VJ}=25^oC$ $T_{VJ}=-40^oC$	1.5 1.6	V
I_{GT}	V_D=6V; $T_{VJ}=25^oC$ $T_{VJ}=-40^oC$	100 200	mA
V_{GD}	$T_{VJ}=T_{VJM}$; $V_D=2/3V_{DRM}$	0.2	V
I_{GD}		5	mA
I_L	$T_{VJ}=25^oC$; t_p=10us I_G=0.45A; di_G/dt=0.45A/us	450	mA
I_H	$T_{VJ}=25^oC$; V_D=6V; $R_{GK}=\infty$	200	mA
t_{gd}	$T_{VJ}=25^oC$; $V_D=1/2V_{DRM}$ I_G=0.45A; di_G/dt=0.45A/us	2	us
t_q	$T_{VJ}=T_{VJM}$; I_T=20A; t_p=200us; -di/dt=10A/us typ. V_R=100V; dv/dt=15V/us; $V_D=2/3V_{DRM}$	250	us
I_{RM}		45	A
R_{thJC}	per thyristor/diode; DC current per module	0.9 0.15	K/W
R_{thJK}	per thyristor/diode; DC current per module	1.1 0.157	K/W
d_S	Creeping distance on surface	16.1	mm
d_A	Strike distance through air	7.5	mm
a	Maximum allowable acceleration	50	m/s^2

FEATURES
* Low forward voltage drop
* Package with copper base plate
* Planar passivated chips
* Isolation voltage 3000 V~
* 1/4''fast-on power terminals

APPLICATIONS
* Input rectifiers for PWM inverter
* Supplies fir DC power equipment
* Field supply for DC motors
* Battery DC power supplies

ADVANTAGES
* Space and weight savings
* Easy to mount with two screws
* Improved temperature and power cycling capability
* Small and light weight

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