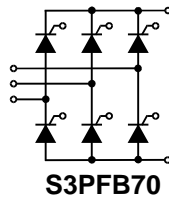
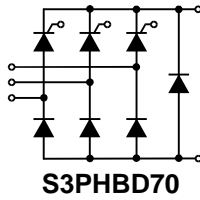
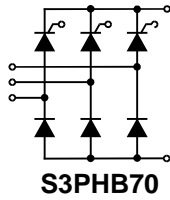
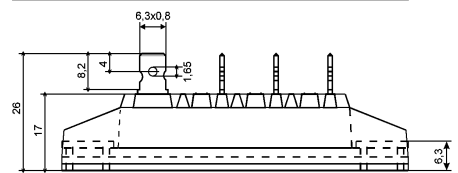
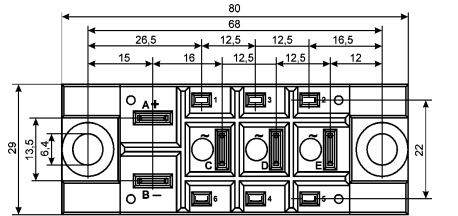


# S3PHB70, S3PHBD70, S3PFB70

## Three Phase Half Controlled Bridge Modules/Full Controlled Bridge



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	
$I_{dAV}$ $I_{dAVM}$ $I_{FRMS}, I_{TRMS}$	$T_C=85^{\circ}C$ , module module per leg	70 70 36	A	
$I_{FSM}, I_{TSM}$	$T_{VJ}=45^{\circ}C$ $V_R=0$ $t=10ms$ (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		
$I^2t$	$T_{VJ}=45^{\circ}C$ $V_R=0$ $t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	1520 1520	A <sup>2</sup> s	
	$T_{VJ}=T_{VJM}$ $V_R=0$ $t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	1250 1250		
$(di/dt)_{cr}$	$T_{VJ}=125^{\circ}C$ $f=50Hz, t_p=200\mu s$ $V_D=2/3V_{DRM}$ $I_G=0.3A$ $di_G/dt=0.3A/\mu s$	repetitive, $I_T=50A$ non repetitive, $I_T=1/2 \cdot I_{dAV}$	150 500	A/ $\mu s$
	$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM};$ $R_{GK}=\infty$ ; method 1 (linear voltage rise)	$V_{DR}=2/3V_{DRM}$	1000
$P_{GM}$	$T_{VJ}=T_{VJM}$ $I_T=I_{TAVM}$	$t_p=30\mu s$ $t_p=500\mu s$ $t_p=10ms$	10 5 1	W
$T_{VJ}$ $T_{VJM}$ $T_{stg}$			-40...+125 125 -40...+125	$^{\circ}C$
$V_{ISOL}$	50/60Hz, RMS $I_{ISOL} \leq 1mA$	$t=1min$ $t=1s$	2500 3000	V~
$M_d$	Mounting torque (M5) (10-32 UNF)		$5 \pm 15\%$ $44 \pm 15\%$	Nm/lb.in.
Weight			50	g

# S3PHB70, S3PHBD70, S3PFB70

## Three Phase Half Controlled Bridge Modules/Full Controlled Bridge

Symbol	Test Conditions	Characteristic Values	Unit
$I_{b,IR}$	$T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$	5	mA
$V_T, V_F$	$I_T, I_F=300A; T_{VJ}=25^\circ C$	1.64	V
$V_{TO}$	For power-loss calculations only	0.85	V
$r_T$		11	$m\Omega$
$V_{GT}$	$V_D=6V;$ $T_{VJ}=25^\circ C$ $T_{VJ}=-40^\circ C$	1.5 1.6	V
$I_{GT}$	$V_D=6V;$ $T_{VJ}=25^\circ C$ $T_{VJ}=-40^\circ C$	100 200	mA
$V_{GD}$	$T_{VJ}=T_{VJM};$ $V_D=2/3V_{DRM}$	0.2	V
$I_{GD}$		5	mA
$I_L$	$T_{VJ}=25^\circ C; t_p=10\mu s$ $I_G=0.45A; di_G/dt=0.45A/\mu s$	450	mA
$I_H$	$T_{VJ}=25^\circ C; V_D=6V; R_{GK}=\infty$	200	mA
$t_{gd}$	$T_{VJ}=25^\circ C; V_D=1/2V_{DRM}$ $I_G=0.45A; di_G/dt=0.45A/\mu s$	2	$\mu s$
$t_q$	$T_{VJ}=T_{VJM}; I_T=20A; t_p=200\mu s; -di/dt=10A/\mu s$ $V_R=100V; dv/dt=15V/\mu s; V_D=2/3V_{DRM}$	250	$\mu s$
$I_{RM}$		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 for 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

**Sirectifier**®