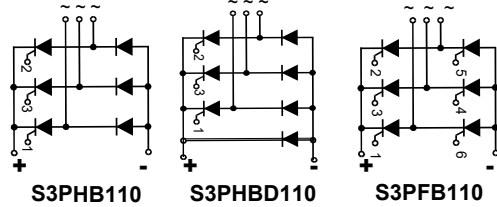
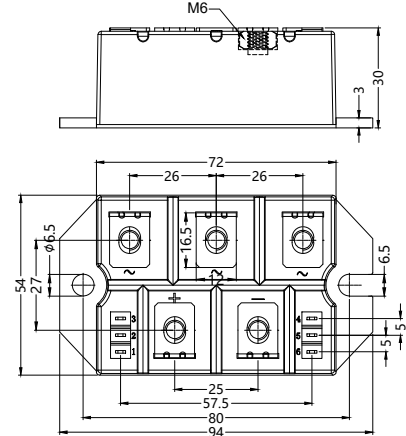


S3PHB110,S3PHBD110,S3PFB110

Three Phase Half Controlled Bridge Modules/Full Controlled Bridge



Dimensions in mm (1mm = 0.0394")



Type			V _{RSM} V	V _{RRM} V
S3PHB110G08B	S3PHBD110G08B	S3PFB110G08B	900	800
S3PHB110G12B	S3PHBD110G12B	S3PFB110G12B	1300	1200
S3PHB110G16B	S3PHBD110G16B	S3PFB110G16B	1700	1600
S3PHB110G18B	S3PHBD110G18B	S3PFB110G18B	1900	1800

Symbol	Test Conditions		Maximum Ratings	Unit
I _{dav} I _{davm} I _{FRMS} , I _{TRMS}	T _c =85°C, module module per leg		110 110 58	A
I _{FSM} , I _{TSM}	T _{VJ} =45°C V _R =0	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1150 1230	A
	T _{VJ} =T _{VJM} V _R =0	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1000 1070	
I ² _t	T _{VJ} =45°C V _R =0	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	6600 6280	A ² s
	T _{VJ} =T _{VJM} V _R =0	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	5000 4750	
(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	150	A/us
		non repetitive, I _T =1/2·I _{dav}	500	
(dv/dt) _{cr}	T _{VJ} =T _{VJM} ; R _{GK} =∞; method 1 (linear voltage rise)	V _{DR} =2/3V _{DRM}	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 (M6) (10-32 UNF)		5 ± 15 % 44 ± 15 %	Nm/lb.in.
Weight	typical		305	g

Sirectifier®

S3PHB110,S3PHBD110,S3PFB110

Three Phase Half Controlled Bridge Modules/Full Controlled Bridge

Symbol	Test Conditions	Characteristic Values	Unit
$I_{D,IR}$	$T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$	5	mA
V_{TM}/V_{FM}	$I_{TM}, I_{FM}=110A; T_{VJ}=25^{\circ}C$ for every chip	1.64	V
V_{TO}	For power-loss calculations only	0.85	V
r_T		11	m Ω
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	μs
t_q	$T_{VJ}=T_{VJM}; I_T=20A; t_p=200\mu s; -di/dt=10A/\mu s$ $V_R=100V; dv/dt=15V/\mu s; V_D=2/3V_{DRM}$ typ.	250	μs
I_{RM}		45	A
R_{thJC}	per thyristor/diode; DC current per module	0.65 0.108	K/W
R_{thJH}	per thyristor/diode; DC current per module	0.8 0.133	K/W
d_s	Creeping distance on surface	10	mm
d_A	Strike distance through air	9.4	mm
a	Maximum allowable acceleration	50	m/s ²

FEATURES

- * Low forward voltage drop
- * Package with copper base plate
- * Glass passivated chips
- * Isolation voltage 3000 V~
- * UL File NO.E310749
- * RoHS compliant

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



S3PHB110,S3PHBD110,S3PFB110

Three Phase Half Controlled Bridge Modules/Full Controlled Bridge

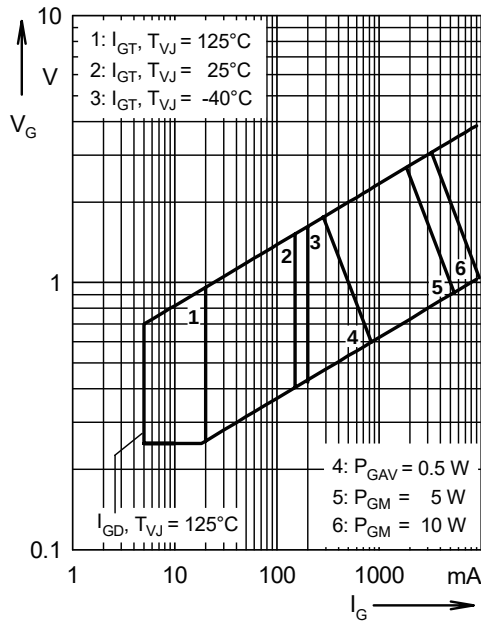


Fig. 1 Gate trigger characteristics

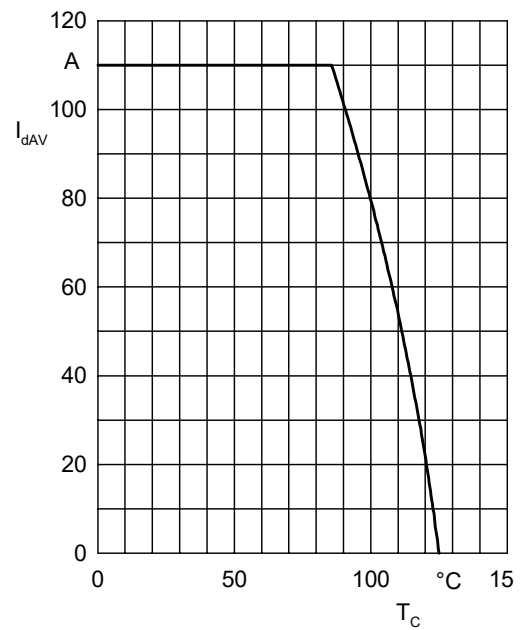


Fig. 2 DC output current at case temperature

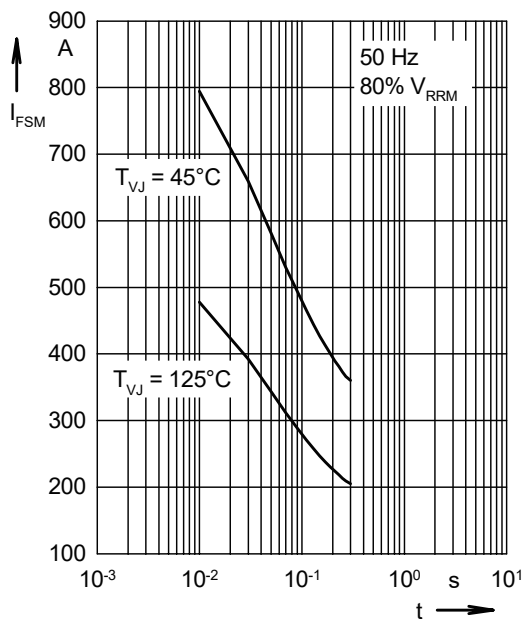


Fig. 3 Surge overload current
 I_{FSM} : Crest value, t : duration

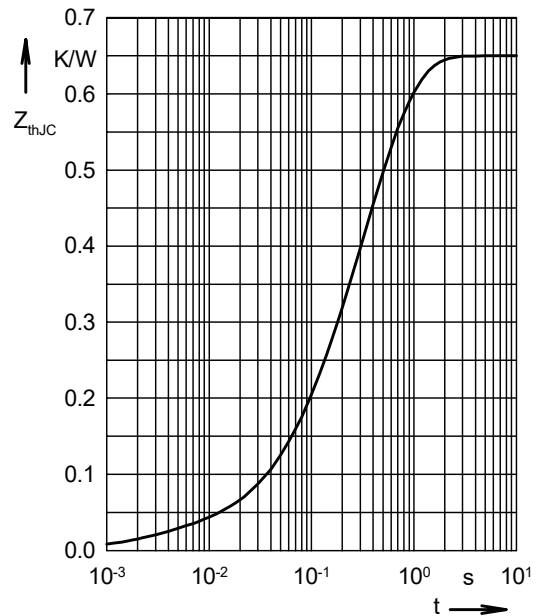


Fig. 4 Transient thermal impedance
junction to case (per leg)