

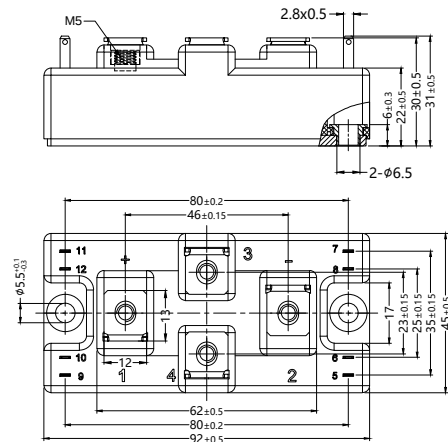
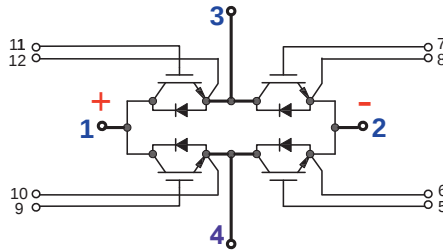
S4G75T120SC9

4 Units H bridge IGBT modules



Dimension: mm

$V_{CES}=1200V$
 $I_{C100}=4 \times 75A$
 $V_{CE(sat)} \leq 1.90V$



Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
IGBT				
V _{CES}	T _j = 25 °C		1200	V
I _C	T _j = 175 °C	T _C = 25 °C	150	A
		T _C = 100 °C	75	A
I _{Cnom}	T _C = 100 °C Every chip		75	A
I _{CRM}	I _{CRM} = 3xI _{Cnom}		225	A
V _{GES}			-20 ~ +20	V
tpsc	V _{CC} = 800 V V _{GE} ≤ 15 V V _{CES} ≤ 1200 V	T _j = 150 °C	10	μs
T _j			-40 ... 175	°C
Inverse diode				
I _F	T _j = 175 °C	T _C = 25 °C	70	A
		T _C = 100 °C	35	A
I _{Fnom}			35	A
I _{FRM}	I _{FRM} = 3xI _{Fnom}		105	A
I _{FSM}	t _p = 10 ms, sin 180°, T _j = 25 °C		105	A
T _j			-40 ... 175	°C
Module				
I _{t(RMS)}	T _{terminal} = 80 °C		300	A
T _{stg}			-40 ... 125	°C
V _{Isol}	AC sinus 50 Hz, t = 1 min		4000	V

S4G75T120SC9

4 Units H bridge IGBT modules

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
IGBT						
V _{CE(sat)}	I _C =75A V _{GE} =15V chiplevel	T _j =25°C		1.90	2.50	V
		T _j =150°C		2.25	2.65	V
V _{CE0}	chiplevel	T _j =25°C		0.80	0.90	V
		T _j =150°C		0.70	0.80	V
r _{CE}	V _{GE} =15V	T _j =25°C		14.00	16.00	mΩ
	chiplevel	T _j =150°C		21.00	22.00	mΩ
V _{GE(th)}	V _{GE} =V _{CE} , I _C = 3mA		5	5.8	6.5	V
I _{CES}	V _{GE} =0V V _{CE} = 1200 V	T _j =25°C	1			mA
		T _j =150°C				mA
C _{ies}	V _{CE} =25V V _{GE} =0V	f=1MHz	4.30			nF
C _{oes}		f=1 MHz	0.28			nF
C _{res}		f=1MHz	0.22			nF
Q _G	V _{GE} = - 8 V...+ 15 V		415			nC
R _{Gint}	T _j =25°C		10			Ω
t _{d(on)}	V _{CC} = 600 V I _C =75A V _{GE} =±15V R _{G on} =1Ω R _{G off} =1 Ω di/dt _{on} = 1600 A/ μs di/dt _{off} =950A/ μs	T _j =150°C	144			ns
t _r		T _j =150°C	37			ns
E _{on}		T _j =150°C	10			mJ
t _{d(off)}		T _j =150°C	355			ns
t _f		T _j =150°C	49			ns
E _{off}		T _j =150°C	6.3			mJ
R _{th(j-c)}	per IGBT		0.375			K/W



S4G75T120SC9

4 Units H bridge IGBT modules

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
Inverse diode						
V _F = V _{EC}	I _F =35A	T _J =25°C	2.20		2.80	V
	V _{GE} =0V	T _J =150°C	2.10		2.50	V
	chiplevel					
V _{F0}	chiplevel	T _J =25°C	1.30		1.50	V
		T _J =150°C	0.90		1.10	V
r _F	chiplevel	T _J =25°C	12		13	mΩ
		T _J =150°C	16		18	mΩ
I _{RRM}	I _F =75A di/dt _{off} =990A/μs V _{GE} =±15V V _{CC} = 600 V	T _J =150°C	37			A
Q _{rr}		T _J =150°C	12.6			μC
E _{rr}		T _J =150°C	4.7			mJ
R _{th(j-c)}	per diode		0.57			K/W
Module						
L _{CE}			30			nH
R _{CC'+EE'}	measured per	T _C =25°C	0.65			mΩ
	switch	T _C =125°C	1.09			mΩ
R _{th(c-s)}	calculated without thermal coupling (λ _{grease} =0.81 W/(m*K))		0.04		0.05	K/W
M _s	to heat sink M5		3	5		Nm
M _t		to terminals M5	2.5	5		Nm
						Nm
w			170			g