

HCG200FH120A2D

$V_{CES}=1200V$, I_C (nom) =200A

Features

- Low inductive design
- Low V_{cesat} with high junction temperature
- Fast & soft reverse recovery anti-parallel FWD
- Low Switching Losses

Benefits

- Higher System Efficiency
- Reduce cooling requirements
- Increased power density
- Enabling higher frequency

Applications

- Inverter for motor drive
- AC and DC servo drive amplifier
- Uninterruptible power supply

Package



Absolute Maximum Ratings $T_c=25^{\circ}C$ unless otherwise noted

TI-T4 IGBT

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage	1200	V
V_{GES}	Gate - Emitter Voltage	± 20	V
I_C	Collector Current @ $T_C = 25^{\circ}C$, $T_{vj}=150^{\circ}C$	200	A
I_{CM}	Pulsed Collector Current $t_p=1ms$	400	A

D1-D4 Diode

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V
I_F	Diode Continuous Forward Current	200	A
I_{FM}	Diode Maximum Forward Current $t_p=1ms$	400	A

IGBT -inverter Characteristics Tc =25°C unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.		Test Conditions
$V_{CE(sat)}$	Collector to Emitter Saturation Voltage		2.15	2.60	V	$I_c=200A, V_{GE}=15V, T_j=25^{\circ}C$
			2.65			$I_c=200A, V_{GE}=15V, T_j=125^{\circ}C$
			2.10			$I_c=200A, V_{GE}=15V, T_j=150^{\circ}C$
$V_{GE(th)}$	Gate-Emitter Threshold Voltage	4.8	5.7	6.3	V	$I_c=2.0mA, V_{CE}=V_{GE}, T_j=25^{\circ}C$
I_{CES}	CollectorCut-Off Current			1.0	mA	$V_{CE}=V_{CES}, V_{GE}=0V, T_j=25^{\circ}C$
I_{GES}	Gate-Emitter Leakage Current			400	nA	$V_{GE}=V_{GES}, V_{GE}=0V, T_j=25^{\circ}C$
E_{On}	Turn -On Switching Energy	--	12.9	--	mJ	$V_{CC}=600V, I_c=200A$
E_{Off}	Turn Off Switching Energy	--	17.1	--		$R_G=5.1\Omega, V_{GE}=\pm 15V, T_j=25^{\circ}C$
$t_{d(on)}$	Turn-on Delay Time	--	373	--	ns	
t_r	Turn-on Rise Time	--	104	--		
$t_{d(off)}$	Turn-off Delay Time	--	459	--		
t_f	Turn- off Fall Time	--	168	--		
I_{SC}	SC Data		1200		A	$t_P\leq 10\mu s, V_{GE}=15V, T_j=125^{\circ}C, V_{CC}=900V, V_{CEM}\leq 1200V$
R_{thJC}	Thermal resistance,junction to case		0.092		K/W	<i>per IGBT</i>
R_{thCH}	Thermal resistance, case to heatsink		0.028		K/W	<i>per IGBT</i>
$T_{vj op}$	Temperature under switching conditions	-40		150	$^{\circ}C$	

D1-D4 Diode Characteristics Tc =25°C unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
V_F	Diode Forward Voltage		1.65	2.05	V	$I_c=200A, V_{GE}=0V, T_j=25^{\circ}C$
			1.65			$I_F=200A, V_{GE}=0V, T_j=125^{\circ}C$
Q_r	Recovered Charge	--	17.7	--	μC	$V_R=600V, I_F=200A, -di/dt=3500A/\mu s, V_{GE}=-15V, T_j=25^{\circ}C$
I_{RM}	Peak Reverse Recovery Current	--	145	--	A	
E_{rec}	Reverse Recovery Energy	--	8.06	--	mJ	
R_{thJC}	Thermal resistance, junction to case		0.219		K/W	per DIODE
R_{thCH}	Thermal resistance, case to heatsink		0.068		K/W	per DIODE
$T_{vj op}$	Temperature under switching conditions	-40		150	$^{\circ}C$	

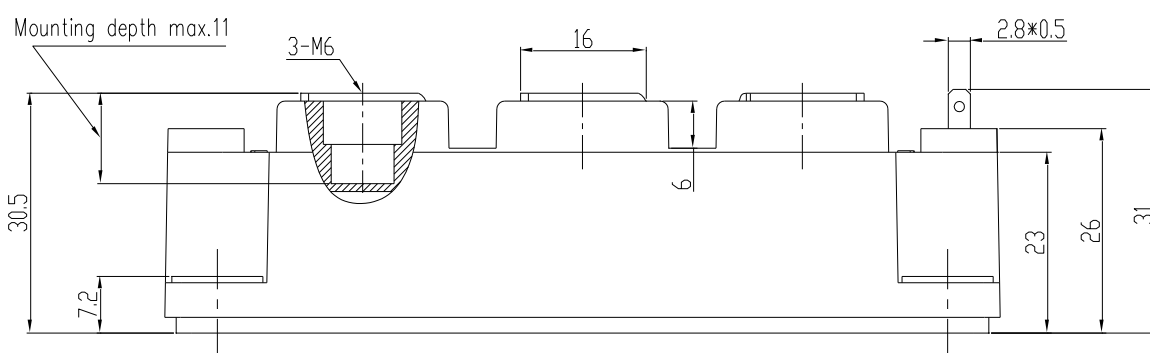
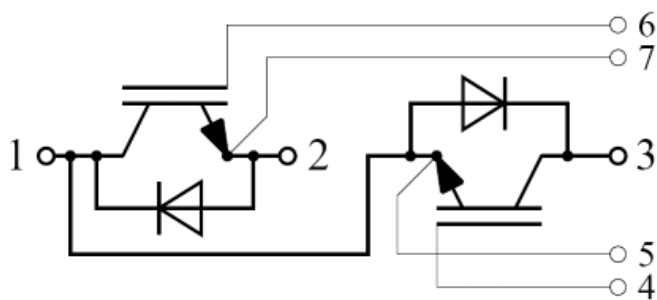
NTC-Thermistor Characteristics

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
R_{25}	Rated Resistance	$T_{NTC}=25^{\circ}\text{C}$		5.0		k Ω
$B_{25/50}$	B-value	$R_2=R_{25\text{exp}}[B_{25/50} (1/T_2 - 1/(298,15\text{K}))]$		3380		K
$B_{25/80}$	B-value	$R_2=R_{25\text{exp}}[B_{25/80} (1/T_2 - 1/(298,15\text{K}))]$		3435		K

Package

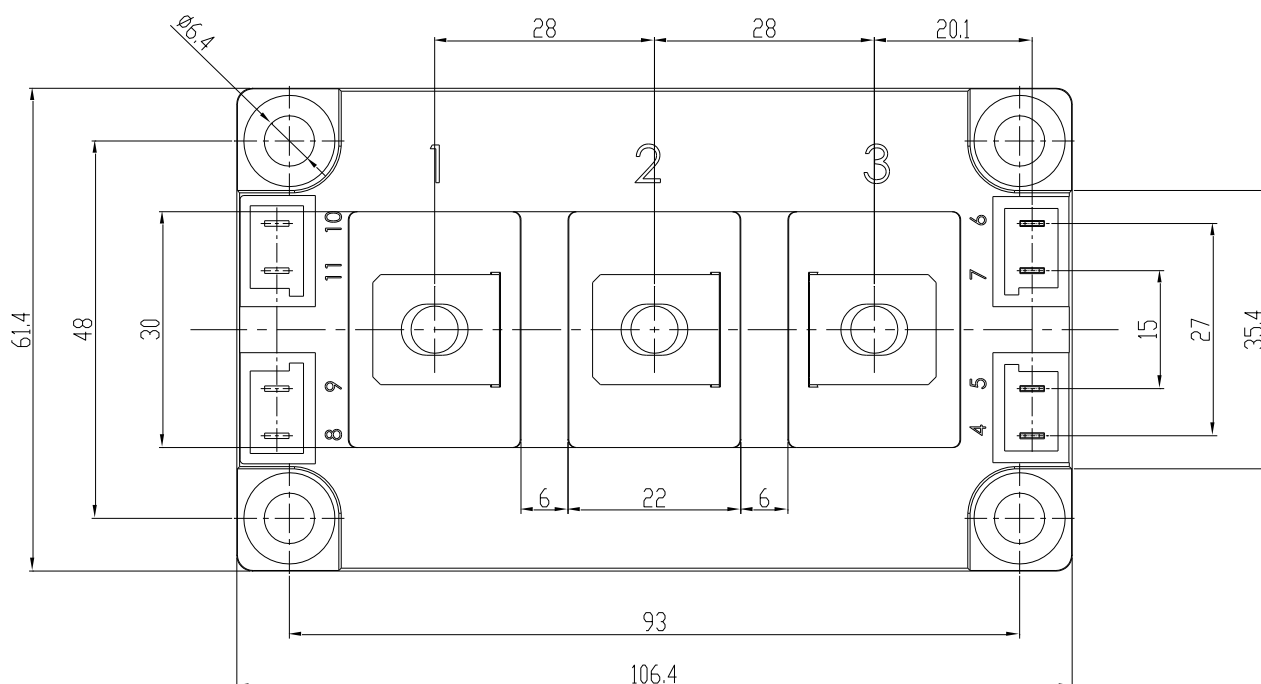
Symbol	Parameter	Test Conditions	Values	Unit
V_{ISOL}	Isolation test voltage	RMS, f=50Hz, t=1min	2.5	kV
CTI	Comparative tracking		> 200	
L_{sCE}	Stray inductance module		20	nH
T_{stg}	Storage temperature		-40~125	$^{\circ}\text{C}$
M	Mounting torque for module mounting	M5, Screw	2.5~5	Nm
G	Weight		300	g

Circuit diagram



Package Dimensions

Dimensions in Millimeters



Revision History

Document Version	Description of Changes
RevX.0.1	Released

Zhejiang HIITIO New Energy Co., Ltd

ADD : NO.1125 Zhixing Road,Qiaonan District, Xiaoshan Economic and
Technological Development Zone, Hangzhou, Zhejiang
TEL :400-667-9977

