

HCG200FF170A2A

$V_{CES}=1700V$, 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

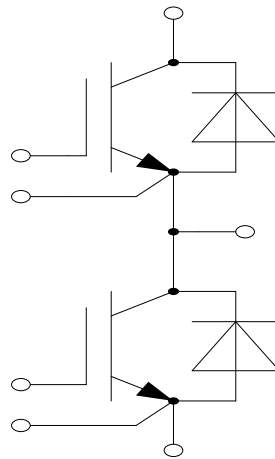
- Higher System Efficiency
- Reduce cooling requirements
- Increased power density
- Enabling higher frequency

Applications

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



Package



IGBT-inverter Characteristics $T_c = 25^\circ\text{C}$ unless otherwise noted

IGBT- inverter

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage	1700	V
V_{GES}	Gate-Emitter Voltage	± 20	V
I_C	Collector Current @ $T_c=25^\circ\text{C}$, $T_{vj}=150^\circ\text{C}$	200	A
I_{CM}	Pulsed Collector Current $t_p=1\text{ms}$	400	A

Diode - inverter

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	1700	V
I_F	Diode Continuous Forward Current	200	A
I_{FM}	Diode Maximum Forward Current $t_p=1\text{ms}$	400	A

Diode-inverter Characteristics $T_c = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
V_F	Diode Forward Voltage		1.75	2.25	V	$I_F=200\text{A}, V_{GE}=0\text{V}, T_j=25^\circ\text{C}$
			1.85			$I_F=200\text{A}, V_{GE}=0\text{V}, T_j=125^\circ\text{C}$
			1.90			$I_F=200\text{A}, V_{GE}=0\text{V}, T_j=150^\circ\text{C}$
Q_r	Recovered Charge	--	40.3		μC	$V_R=900\text{V}, I_F=200\text{A},$ $-di/dt=2700\text{A}/\mu\text{s}, V_{GE}=-15\text{V}$ $T_j=25^\circ\text{C}$
I_{RM}	Peak Reverse Recovery Current	--	123		A	
E_{rec}	Reverse Recovery Energy	--	22.7		mJ	
R_{thJC}	Thermal resistance, junction to case		TBD		K/W	<i>per DIODE</i>
R_{thCH}	Thermal resistance, case to heatsink		TBD		K/W	<i>per DIODE</i>
$T_{vj op}$	Temperature under switching conditions	-40		150	$^\circ\text{C}$	

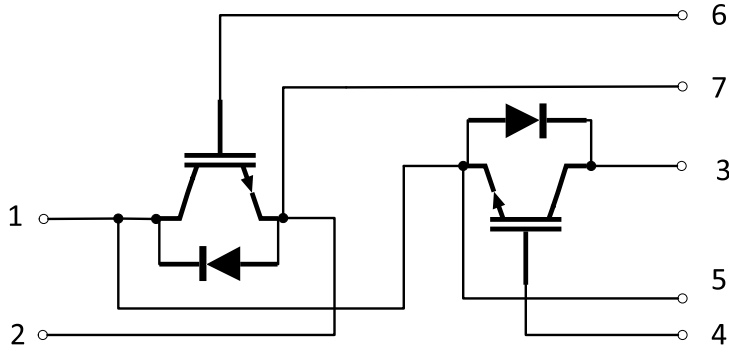
IGBT-inverter Characteristics $T_c = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
$V_{CE(sat)}$	Collector to Emitter Saturation Voltage		2.35	2.60	V	$I_C=200\text{A}, V_{GE}=15\text{V}, T_j=25^\circ\text{C}$
			2.60			$I_C=200\text{A}, V_{GE}=15\text{V}, T_j=125^\circ\text{C}$
			2.70			$I_C=200\text{A}, V_{GE}=15\text{V}, T_j=150^\circ\text{C}$
$V_{GE(th)}$	Gate-Emitter Threshold Voltage	5.0	5.94	6.5	V	$I_C=12\text{mA}, V_{CE}=V_{GE}, T_j=25^\circ\text{C}$
I_{CES}	Collector Cut-Off Current			1.0	mA	$V_{CE}=V_{CES}, V_{GE}=0\text{V}, T_j=25^\circ\text{C}$
I_{GES}	Gate-Emitter Leakage Current			400	nA	$V_{GE}=V_{GES}, V_{CE}=0\text{V}, T_j=25^\circ\text{C}$
C_{ies}	Input Capacitance	--	12.5	--	nF	$V_{CE}=25\text{V}, f=1\text{MHz}, V_{GE}=0\text{V}$
C_{rSS}	Reverse Transfer Capacitance	--	0.33	--		
E_{On}	Turn-On Switching Energy	--	54.4	--	mJ	$V_{CC}=900\text{V}, I_C=200\text{A}, R_G=5.1\Omega, V_{GE}=\pm 15\text{V}, T_j=25^\circ\text{C}$
E_{Off}	Turn Off Switching Energy	--	30.2	--		
$t_{d(on)}$	Turn-on Delay Time	--	382	--	ns	
t_r	Turn-on Rise Time	--	119	--		
$t_{d(off)}$	Turn-off Delay Time	--	354	--		
t_f	Turn-off Fall Time	--	346	--		
I_{SC}	SC Data		840		A	
R_{thJC}	Thermal resistance, junction to case		TBD		K/W	<i>per IGBT</i>
R_{thCH}	Thermal resistance, case to heatsink		TBD		K/W	<i>per IGBT</i>
$T_{vj op}$	Temperature under switching conditions	-40		150	$^\circ\text{C}$	

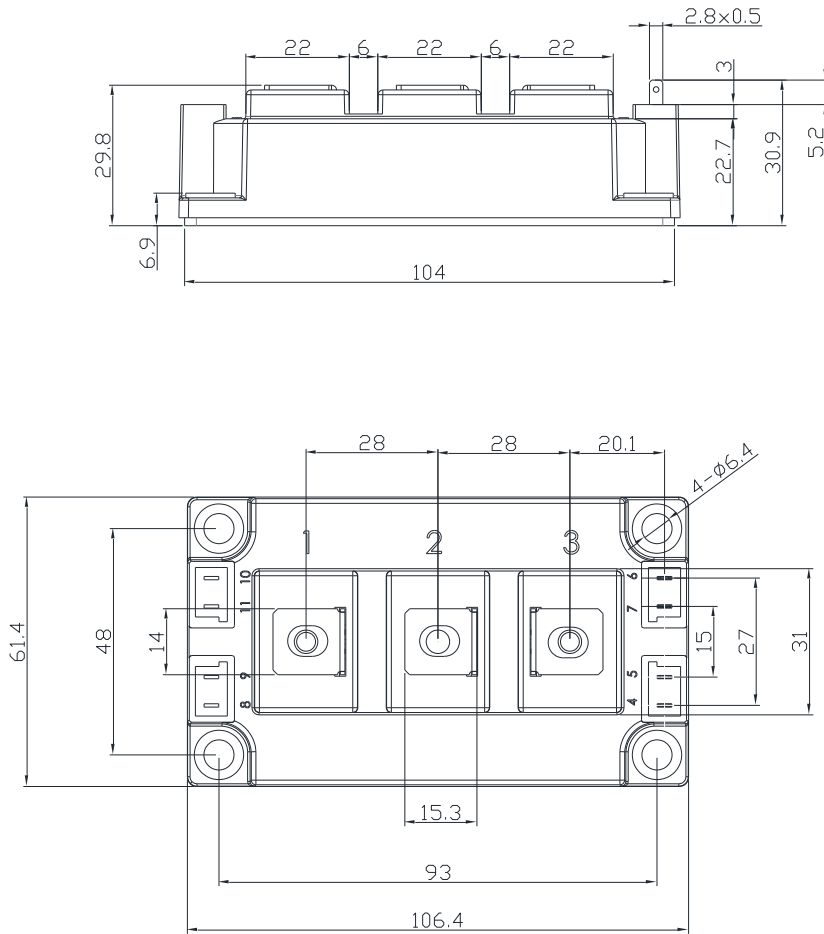
Package

Symbol	Parameter	Test Conditions	Values	Unit
V_{ISOL}	Isolation test voltage	RMS, $f=50\text{Hz}, t=1\text{min}$	2.5	kV
d_{Creep}	Creepage distance		10.0	mm
d_{Clear}	Clearance		7.5	mm
CTI	Comparative tracking index		> 200	
L_{sCE}	Stray inductance module		20	nH
T_{stg}	Storage temperature		-40~125	$^\circ\text{C}$
M	Terminal connection torque	M6, Screw	2.5~5.0	Nm
	Mounting torque	M6, Screw	3.0~5.0	
G	Weight		300	g

Circuit diagram



Package Dimensions (Dimensions in Millimeters)



Revision History

Document Version	Description of Changes
RevX.0.1	Released

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