

Features

- High Speed IGBT in NPT Technology
- Low Switching Losses
- High Short Circuit Capability(10us)
- Including Ultra Fast & Soft Recovery Anti-parallel FWD
- Low Inductance
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Applications

- High Frequency Drivers
- Solar Inverters
- UPS(Uninterruptible Power Supplies)
- Electric Welding Machine

Maximum Ratings

- Maximum Junction Temperature : 150°C
- Operating Junction Temperature Range : -40°C to +150°C
- Storage Temperature Range: -40°C to +125°C
- IGBT Thermal Resistance: 0.20 °C/W Junction to Case
- Diode Thermal Resistance: 0.38 °C/W Junction to Case
- Type Conductive Grease Applied Thermal Resistance: 0.05°C/W Junction to Case-To-Sink

Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CES}	1200	V
DC Collector Current	I_C	$T_C=25^\circ\text{C}$	100
		$T_C=80^\circ\text{C}$	75
Peak Collector Current Repetitive ⁽¹⁾ @ $T_j=125^\circ\text{C}$	I_{CM}	150	A
Diode Continuous Forward Current @ $T_j=125^\circ\text{C}$	I_F	75	A
Isolation Voltage (All Terminals Shorted)@ $f=50\text{Hz}$, 1min	V_{iso}	3000	V
Gate-Emitter Voltage	V_{GE}	± 20	V
Power Terminals Screw:M5	Mounting	2.5~5	N*m
Mounting Screw:M6	Torque	3~5	N*m
Maximum Power Dissipation (IGBT)	P_D	$T_C=25^\circ\text{C}$	625
		$T_{jmax}=150^\circ\text{C}$	W
Weight of Module	G	155	g

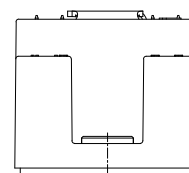
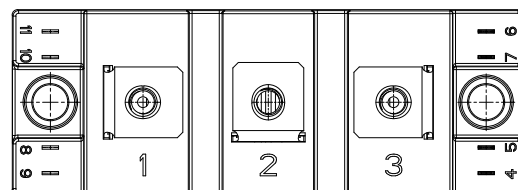
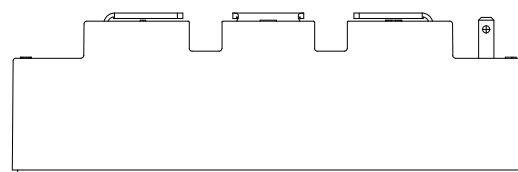
Note:

1. Repetitive Rating: Pulse width limited by max. junction temperature

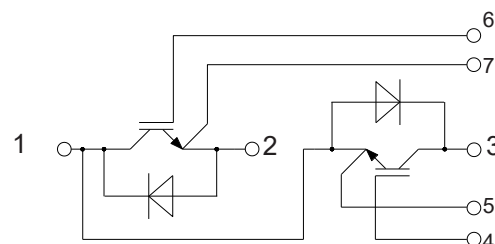
IGBT Modules

1200V 75A

C1



Circuit Diagram



Electrical Characteristics of IGBT @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	$V_{GE}=0V, I_C=1mA$	1200			V
Collector Leakage Current	I_{CES}	$V_{CE}=V_{CES}, V_{GE}=0V$			0.5	mA
		$V_{CE}=V_{CES}, V_{GE}=0V, T_J=125^\circ C$			5	
Gate Leakage Current	I_{GES}	$V_{CE}=0V, V_{GE}=\pm 20V$	-400		400	nA
ON Characteristics						
Gate-Emitter Threshold Voltage	$V_{GE(th)}$	$V_{CE}=V_{GE}, I_C=4mA$	5	5.8	6.6	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$V_{GE}=15V, I_C=75A$		3.0		V
		$V_{GE}=15V, I_C=75A, T_J=125^\circ C$		3.8		
Dynamic Characteristics						
Input Capacitance	C_{ies}	$V_{CE}=25V, V_{GE}=0V, f=1MHz$		5.2		nF
Output Capacitance	C_{oes}			0.82		
Reverse Transfer Capacitance	C_{res}			0.42		
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{CC}=600V, I_C=75A, V_{GE}=\pm 15V, R_G=10\Omega, \text{ Inductive load, } T_J=25^\circ C$		70		ns
Rise Time	t_r			57		
Turn-Off Delay Time	$t_{d(off)}$			253		
Fall Time	T_f			27		
Turn-On Switching Loss	E_{on}	$V_{CC}=600V, I_C=75A, V_{GE}=\pm 15V, R_G=10\Omega, \text{ Inductive load, } T_J=125^\circ C$		7.2		mJ
Turn-Off Switching Loss	E_{off}			1.80		
Turn-On Delay Time	$t_{d(on)}$			80		
Rise Time	t_r			65		
Turn-Off Delay Time	$t_{d(off)}$	$V_{CC}=600V, I_C=75A, V_{GE}=\pm 15V, R_G=10\Omega, \text{ Inductive load, } T_J=125^\circ C$		285		ns
Fall Time	T_f			32		
Turn-On Switching Loss	E_{on}			10.5		
Turn-Off Switching Loss	E_{off}			2.8		
Internal Gate Resistance	R_{g-int}			3.0		Ω
SC data	I_{SC}	$T_P \leq 10\mu s, V_{GE}=15V, V_{CC}=600, V_{CEM} \leq 1200V$		530		A

Electrical Characteristics of FWD @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_{FM}	$I_F=75A, V_{GE}=0V$	$T_j=25^{\circ}C$	1.9		V
			$T_j=125^{\circ}C$		2.0	
Recovered Charge	Q_{rr}	$I_F=75A,$ $-di/dt=1200A/us,$ $V_{rr}=600V$ $V_{GE} = -15V$	$T_j=25^{\circ}C$	4.8		uC
			$T_j=125^{\circ}C$		9.2	
Peak Reverse Recovery Current	I_{rr}	$I_F=75A,$ $-di/dt=1200A/us,$ $V_{rr}=600V$ $V_{GE} = -15V$	$T_j=25^{\circ}C$	65		A
			$T_j=125^{\circ}C$		80	
Reverse Recovery Energy	E_{rec}	$I_F=75A,$ $-di/dt=1200A/us,$ $V_{rr}=600V$ $V_{GE} = -15V$	$T_j=25^{\circ}C$	3.0		mJ
			$T_j=125^{\circ}C$		4.5	

Ordering Information

Device	Packing
Part Number-BP	Bulk: 24pcs/Box ; 120pcs/Ctn

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