"HALF-BRIDGE" IGBT

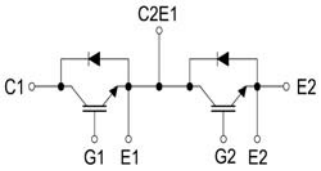
V_{CES} = 1200V
Ic= 75A
$V_{CE(ON)}$ typ. = 1.7V
@Ic= 75A

Feature

- IGBT New Technology
- Low V_{CE} (sat)
- Low Turn-off losses
- Short tail current
- Positive temperature coefficient

Application

- AC & DC Motor controls
- General purpose inverters
- Optimized for high current inverter
- Servo Controls
- UPS, Robotics



Package : V1

Absolute Maximum Ratings @ Tj=25℃ (Per Leg)

Symbol	Parameter	Condition	Ratings	Unit
V_{CES}	Collector-to-Emitter Voltage	T_C = 25℃	1200	V
V_{GE}	Gate emitter voltage		± 20	V
I_C	Continuous Collector Current	T_C = 80℃ (25℃)	75 (100)	A
I_{CP}	Pulsed collector current	T_C = 25℃	200	A
I_F	Diode Continuous Forward Current	T_C = 80℃ (25℃)	75 (100)	A
I_{FM}	Diode Maximum Forward Current	T_C = 25℃	200	A
V_{iso}	Isolation Voltage test	AC @ 1 minute	2500	V
Weight	Weight of Module		190	g
Tj	Junction Temperature		-40 ~ 150	℃
Tstg	Storage Temperature		-40 ~ 125	℃
Md	Mounting torque with screw : M5		2.0	N.m
	Terminal connection torque : M5		2.0	N.m

Static Characteristics @ Tj = 25℃ (unless otherwise specified)

Parameters		Min	Typ	Max	Unit	Test conditions
$V_{CE(ON)}$	Collector-to-Emitter Saturation Voltage	1.4	1.7	2.1	V	I_C = 100A, V_{GE} = 15V
$V_{GE(th)}$	Gate Threshold Voltage	5.0	5.8	6.5		V_{CE} = V_{GE}, I_C = 3㎃
I_{CES}	Zero Gate Voltage Collector Current	—	—	5.0	㎃	V_{GE} = 0V, V_{CE} = 1200V
I_{GES}	Gate-to-Emitter Leakage Current	—	—	400	㎁	V_{CE} = 0V , V_{GE} = 20V
V_F	Forward voltage drop	1.4	1.7	2.1	V	I_F = 75A
R_{GINT}	Integrated gate resistor	—	10	—	Ω	

Electrical Characteristic Values (IGBT / DIODE) @ Tj = 25℃ (unless otherwise specified)

Parameters		Min	Typ	Max	Unit	Test conditions
C_{iss}	Input capacitance	—	5345	—	pF	V_{CE} = 25V, V_{GE} = 0V f = 1 MHz
C_{oss}	Output capacitance	—	280	—		
C_{rss}	Reverse transfer capacitance	—	242	—		
$t_{d(on)}$	Turn-on delay time	—	285	—	ns	Inductive Switching (125℃) V_{CC} = 600V I_C = 75A, V_{GE} = ±15V R_G = 4.7Ω
tr	Rise time	—	45	—		
$t_{d(off)}$	Turn-off delay time	—	520	—		
tf	Fall time	—	90	—		
V_{BR}	Cathode-Anode breakdown Voltage	1200	—	—	V	
I_{RM}	Maximum Reverse Leakage Current	—	—	250	㎂	V_R = 1200V
t_{rr}	Reverse Recovery Time	—	170	—	ns	I_F = 100A, V_R = 600V
Qrr	Reverse Recovery Charge	—	7	—	㎌	di / dt = 2000A / ㎲

Thermal Characteristics

Symbol	Parameter	Min	Typ	Max	Unit
$R_{\Theta JC}$	Junction-to-Case (IGBT Part, Per 1/2 Module)	-	-	0.35	℃/W
$R_{\Theta JC}$	Junction-to-Case (Diode Part, Per 1/2 Module)	-	-	0.58	
$R_{\Theta CS}$	Case-to-Heat Sink (Conductive grease applied)	-	0.05	-	

※ Data and **specifications** subject to change without notice.

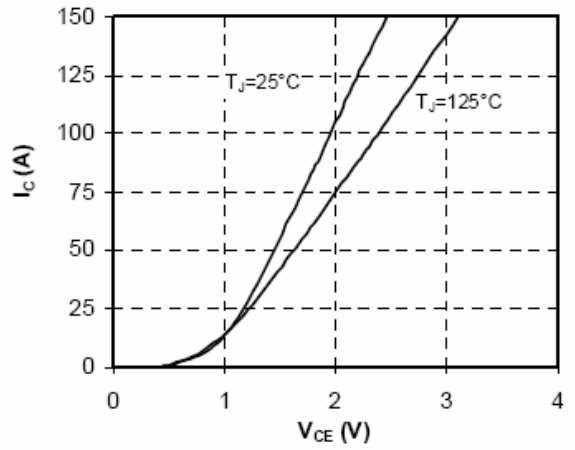


Fig 1. Typ. IGBT Output Characteristics

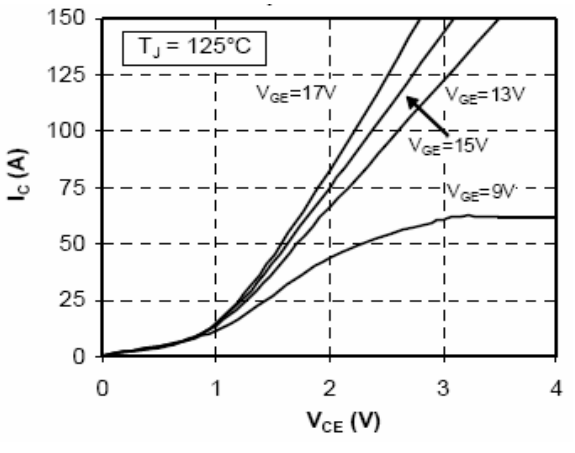


Fig 2. Typ. IGBT Out Characteristics

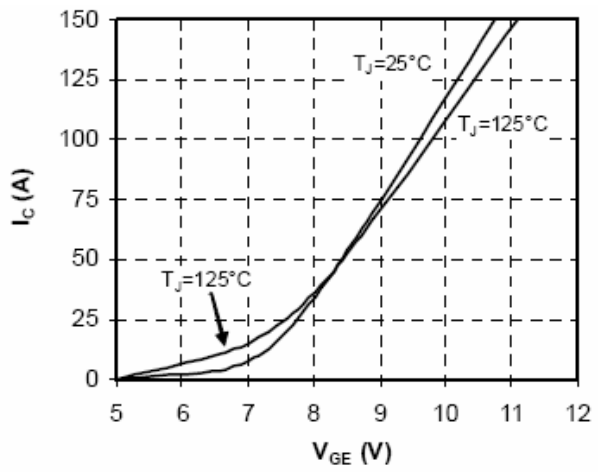


Fig 3. Typ. Transfer Characteristics

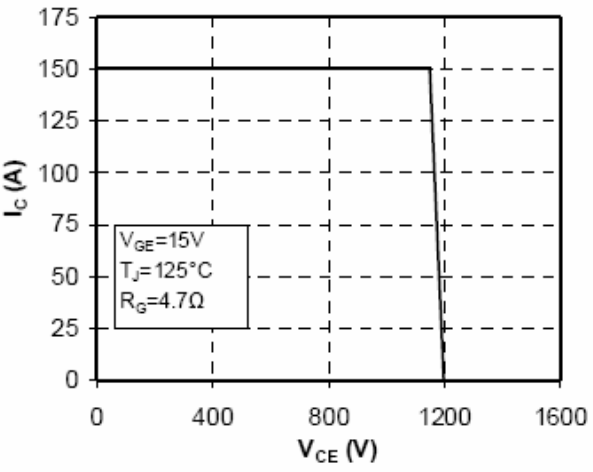


Fig 4. Reverse Bias Operating Area

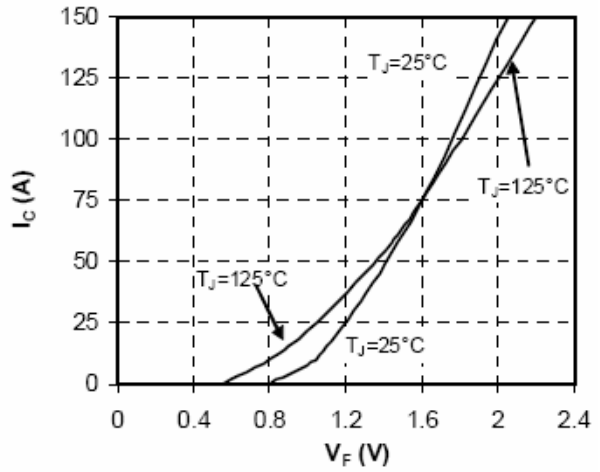


Fig 5. Forward Characteristics of Diode

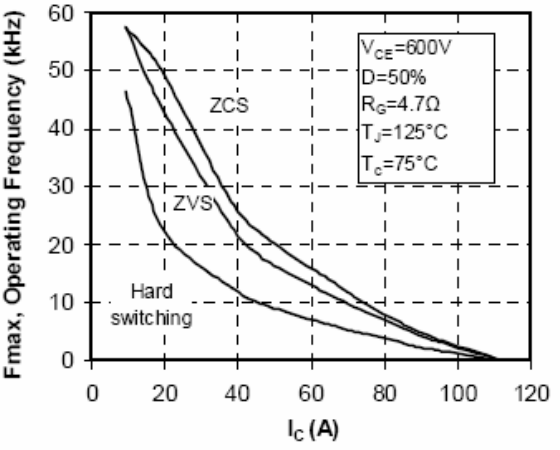
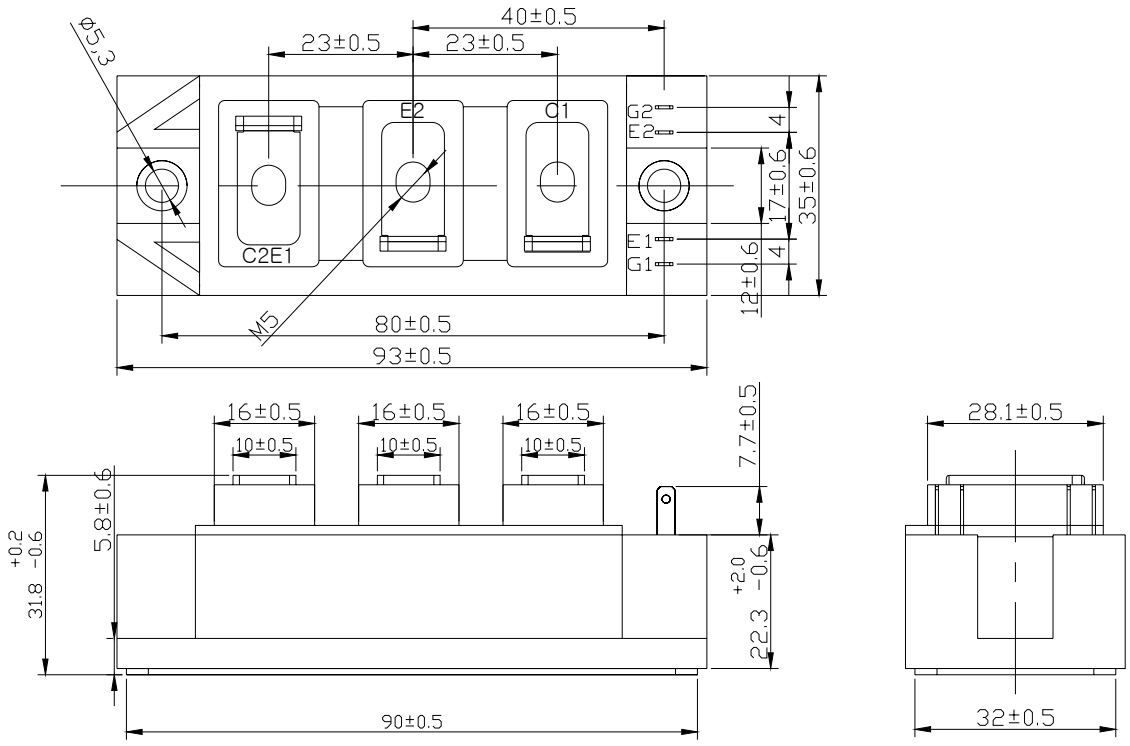


Fig 6. Operating Frequency vs Collector Current

Package Outline (dimensions in mm)



Data and specifications subject to change without notice. May 2006

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