

## “HALF-BRIDGE” IGBT

**V<sub>CES</sub> = 600V**  
**I<sub>c</sub> = 150A**  
**V<sub>CE(ON)</sub> typ. = 1.5V**  
**@I<sub>c</sub> = 150A**

### Feature

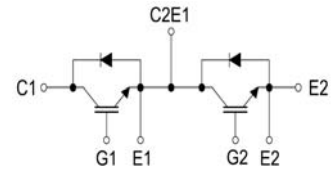
- IGBT New Technology
- Low V<sub>CE</sub> (sat)
- Low Turn-off losses
- Short tail current
- Positive temperature coefficient

### Application

- AC & DC Motor controls
- General purpose inverters
- Optimized for high current inverter (AC TIG Welding machines)
- Servo Controls
- UPS, Robotics



Package : V1



### Absolute Maximum Ratings @ T<sub>j</sub> = 25°C (Per Leg)

Symbol	Parameter	Condition	Ratings	Unit
V <sub>CES</sub>	Collector-to-Emitter Voltage	V <sub>GE</sub> = 0V, I <sub>c</sub> = 4mA	600	V
I <sub>c</sub>	Continuous Collector Current		150	A
I <sub>c(puls)</sub>	Pulsed collector current, t <sub>p</sub> limited by T <sub>jmax</sub>		450	A
V <sub>GE</sub>	Gate emitter voltage		± 20	V
t <sub>p</sub>	Short circuit test, V <sub>GE</sub> = 15V, V <sub>CC</sub> = 360V	T <sub>vj</sub> = 150°C	6	μs
		T <sub>vj</sub> = 25°C	8	
V <sub>iso</sub>	Isolation Voltage test	AC @ 1 minute	2500	V
T <sub>j</sub>	Junction Temperature		-40 ~ 150	°C
T <sub>stg</sub>	Storage Temperature		-40 ~ 125	°C
Md	Mounting torque with screw M5		2.0	N.m
	Terminal connection torque		2.0	N.m

### Static Characteristics @ T<sub>j</sub> = 25°C (unless otherwise specified)

Parameters		Min	Typ	Max	Unit	Test conditions
V <sub>(BR)CES</sub>	Collector-to-Emitter Breakdown Voltage	600	—	—	V	V <sub>GE</sub> = 0V, I <sub>c</sub> = 4mA
V <sub>CE(ON)</sub>	Collector-to-Emitter Saturation Voltage	1.05	1.50	1.85		I <sub>c</sub> = 150A, V <sub>GE</sub> = 15V
V <sub>GE(th)</sub>	Gate Threshold Voltage	5.0	5.8	6.5		V <sub>CE</sub> = V <sub>GE</sub> , I <sub>c</sub> = 2400μA
I <sub>CES</sub>	Zero Gate Voltage Collector Current	—	—	7.6	μA	V <sub>GE</sub> = 0V, V <sub>CE</sub> = 600V
I <sub>GES</sub>	Gate-to-Emitter Leakage Current	—	—	600	nA	V <sub>CE</sub> = 0V, V <sub>GE</sub> = 20V
R <sub>GINT</sub>	Integrated gate resistor	—	2	—	Ω	

**Electrical Characteristic Values (IGBT / DIODE) @ T<sub>j</sub> = 25°C (unless otherwise specified)**

Parameters		Min	Typ	Max	Unit	Test conditions
C <sub>iss</sub>	Input capacitance	—	9240	—	pF	V <sub>CE</sub> = 25V , V <sub>GE</sub> = 0V f = 1 MHz
C <sub>oss</sub>	Output capacitance	—	576	—		
C <sub>rss</sub>	Reverse transfer capacitance	—	274	—		
t <sub>d(on)</sub>	Turn-on delay time	—	125	—	ns	T <sub>j</sub> = 125°C , V <sub>CC</sub> = 300V I <sub>c</sub> = 150A , V <sub>GE</sub> = ±15V R <sub>G</sub> = 3.3Ω
t <sub>r</sub>	Rise time	—	30	—		
t <sub>d(off)</sub>	Turn-off delay time	—	340	—		
t <sub>f</sub>	Fall time	—	60	—		
I <sub>R</sub>	Reverse leakage current	—	—	27	μA	V <sub>R</sub> = 600V
V <sub>BR</sub>	Cathode-Anode breakdown Voltage	600	—	—	V	I <sub>R</sub> = 0.25mA
V <sub>f</sub>	Forward voltage drop	1.2	1.6	1.9		I <sub>F</sub> = 150A

※ Data and specifications subject to change without notice.

**Package Outline** (dimensions in mm)

