



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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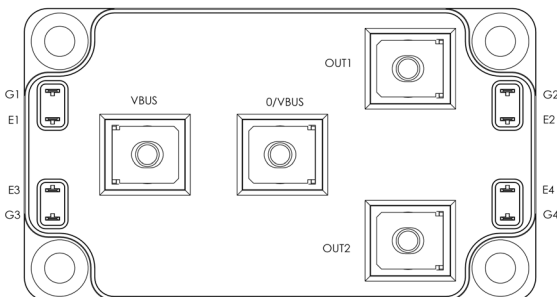
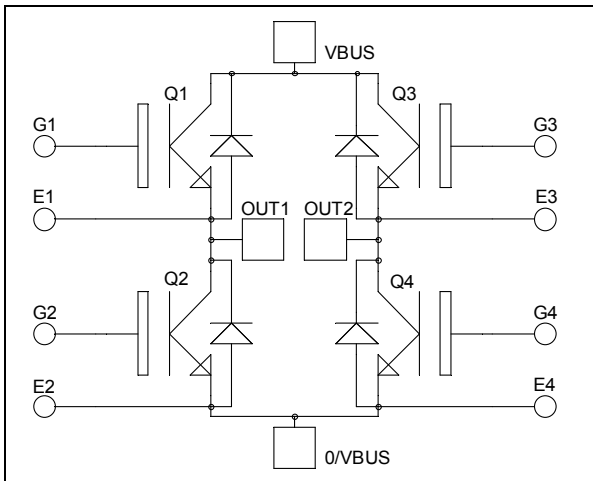
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**Full bridge  
High speed Trench + Field Stop IGBT4  
Power module**

**$V_{CES} = 1200V$   
 $I_C = 200A @ T_c = 80^\circ C$**


**Application**

- Welding converters
- Switched Mode Power Supplies
- Uninterruptible Power Supplies
- Motor control

**Features**

- High speed Trench + Field Stop IGBT 4 Technology
  - Low voltage drop
  - Low leakage current
  - Low switching losses
  - Soft recovery parallel diodes
  - Low diode VF
  - RBSOA and SC SOA rated
- Kelvin source for easy drive
- Very low stray inductance
  - Symmetrical design
  - M5 power connectors
- High level of integration

**Benefits**

- Stable temperature behavior
- Very rugged
- Direct mounting to heatsink (isolated package)
- Low junction to case thermal resistance
- Easy paralleling due to positive TC of VCEsat
- Low profile
- RoHS Compliant

**All ratings @  $T_j = 25^\circ C$  unless otherwise specified**

**Absolute maximum ratings (Per IGBT)**

Symbol	Parameter	Max ratings	Unit
$V_{CES}$	Collector - Emitter Voltage	1200	V
$I_C$	Continuous Collector Current	$T_c = 25^\circ C$	350
		$T_c = 80^\circ C$	200
$I_{CM}$	Pulsed Collector Current	$T_c = 25^\circ C$	700
$V_{GE}$	Gate - Emitter Voltage	$\pm 20$	V
$P_D$	Maximum Power Dissipation	$T_c = 25^\circ C$	1000
RBSOA	Reverse Bias Safe Operating Area	$T_j = 125^\circ C$	400A @ 1100V

**CAUTION:** These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on [www.microsemi.com](http://www.microsemi.com)

**Electrical Characteristics (Per IGBT)**

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
$I_{CES}$	Zero Gate Voltage Collector Current	$V_{GE} = 0V, V_{CE} = 1200V$			100	$\mu A$
$V_{CE(sat)}$	Collector Emitter saturation Voltage	$V_{GE} = 15V$ $I_C = 200A$		2.05 2.6	2.4	V
$V_{GE(th)}$	Gate Threshold Voltage	$V_{GE} = V_{CE}, I_C = 7 mA$	5.2	5.8	6.4	V
$I_{GES}$	Gate – Emitter Leakage Current	$V_{GE} = 20V, V_{CE} = 0V$			340	nA

**Dynamic Characteristics (Per IGBT)**

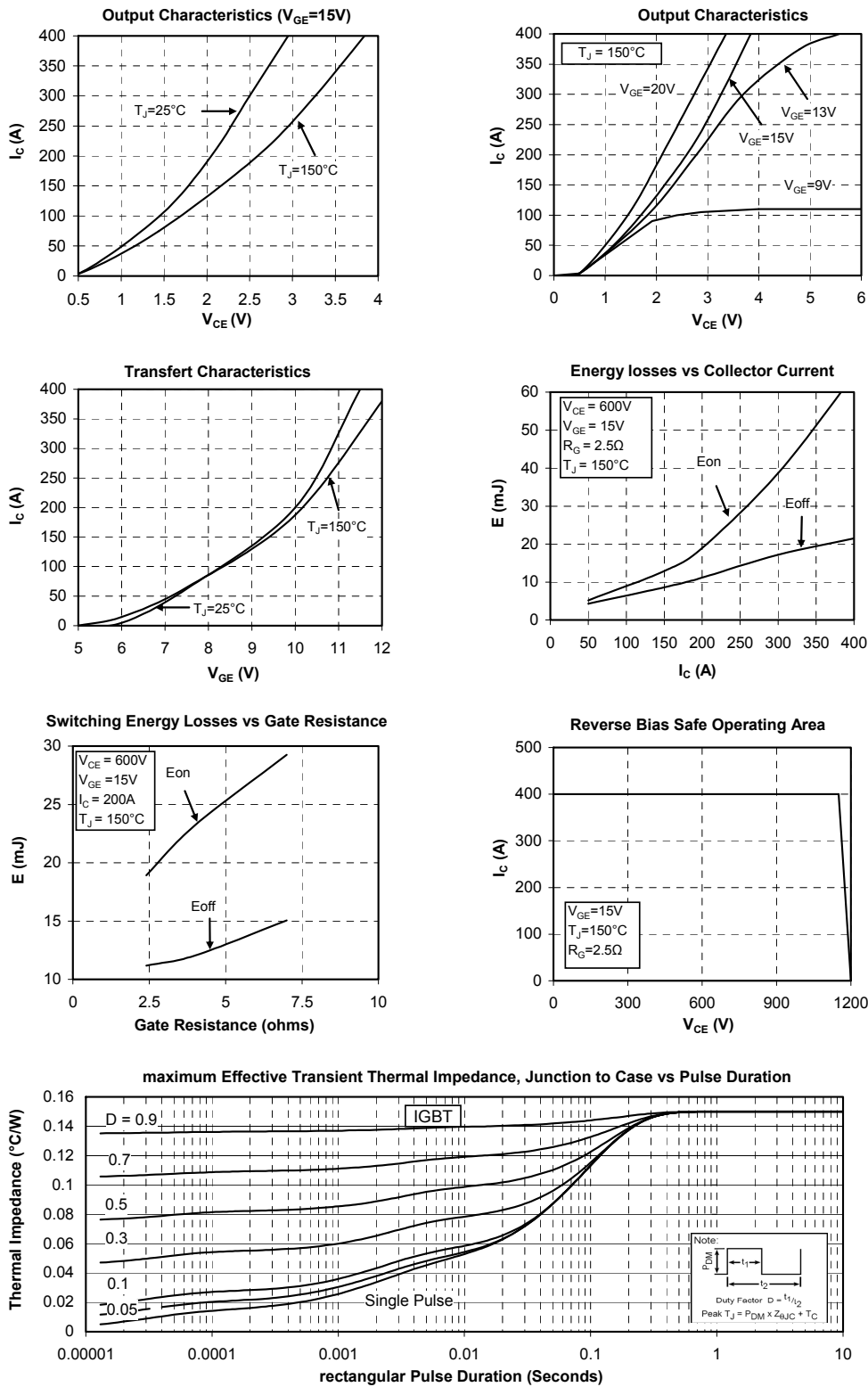
Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
$C_{ies}$	Input Capacitance	$V_{GE} = 0V$		12.3		nF
$C_{oes}$	Output Capacitance	$V_{CE} = 25V$		0.7		
$C_{res}$	Reverse Transfer Capacitance	$f = 1MHz$		0.6		
$Q_G$	Gate charge	$V_{GE} = 15V ; V_{CE} = 960V$ $I_C = 200A$		900		nC
$T_{d(on)}$	Turn-on Delay Time	Inductive Switching (25°C) $V_{GE} = \pm 15V$ $V_{CE} = 600V$ $I_C = 200A$ $R_G = 2.5\Omega$		30		ns
$T_r$	Rise Time			57		
$T_{d(off)}$	Turn-off Delay Time			290		
$T_f$	Fall Time			16		
$T_{d(on)}$	Turn-on Delay Time	Inductive Switching (150°C) $V_{GE} = \pm 15V$ $V_{CE} = 600V$ $I_C = 200A$ $R_G = 2.5\Omega$		30		ns
$T_r$	Rise Time			49		
$T_{d(off)}$	Turn-off Delay Time			366		
$T_f$	Fall Time			48		
$E_{on}$	Turn-on Switching Energy	$V_{GE} = \pm 15V$ $V_{CE} = 600V$ $I_C = 200A$	$T_j = 150^\circ C$	18		mJ
$E_{off}$	Turn-off Switching Energy	$R_G = 2.5\Omega$	$T_j = 150^\circ C$	11		mJ
$I_{sc}$	Short Circuit data	$V_{GE} \leq 15V ; V_{Bus} = 600V$ $t_p \leq 10\mu s ; T_j = 150^\circ C$		700		A
$R_{thJC}$	Junction to Case Thermal Resistance				0.15	$^\circ C/W$

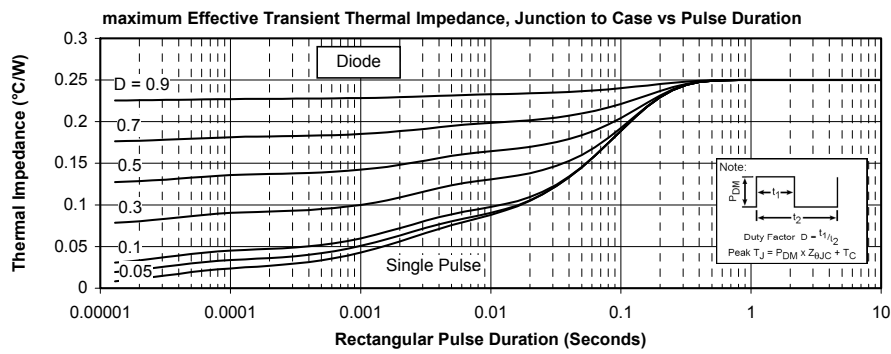
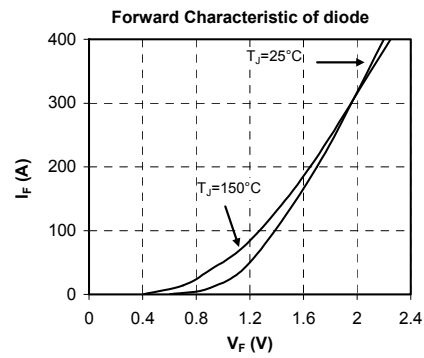
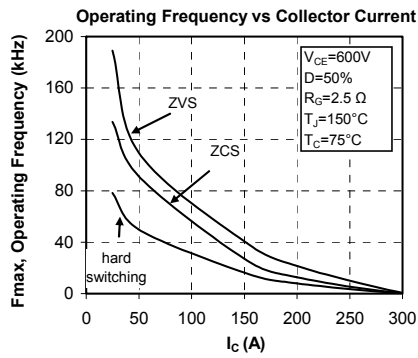
**Diode ratings and characteristics (Per diode)**

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit	
$V_{RRM}$	Repetitive Reverse Voltage		1200			V	
$I_{RM}$	Reverse Leakage Current	$V_R = 1200V$			150	$\mu A$	
$I_F$	DC Forward Current	$T_C = 60^\circ C$		200		A	
$V_F$	Diode Forward Voltage	$I_F = 200A$ $V_{GE} = 0V$	$T_j = 25^\circ C$ $T_j = 150^\circ C$	1.9 1.85	2.2	V	
$t_{rr}$	Reverse Recovery Time	$I_F = 200A$ $V_R = 600V$ $di/dt = 4000A/\mu s$	$T_j = 25^\circ C$ $T_j = 150^\circ C$	155 300		ns	
$Q_{rr}$	Reverse Recovery Charge		$T_j = 25^\circ C$ $T_j = 150^\circ C$	18.6 39		$\mu C$	
$E_r$	Reverse Recovery Energy		$T_j = 25^\circ C$ $T_j = 150^\circ C$	8 16		mJ	
$R_{thJC}$	Junction to Case Thermal Resistance					0.25	$^\circ C/W$



## Typical Performance Curve





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