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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.

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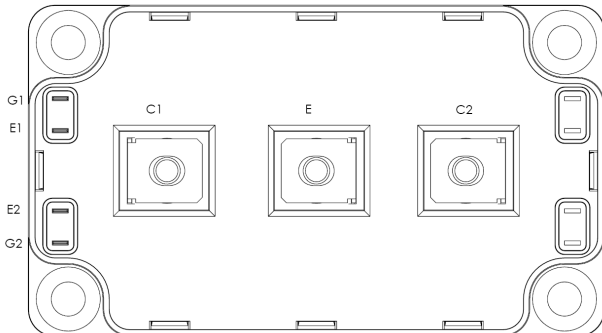
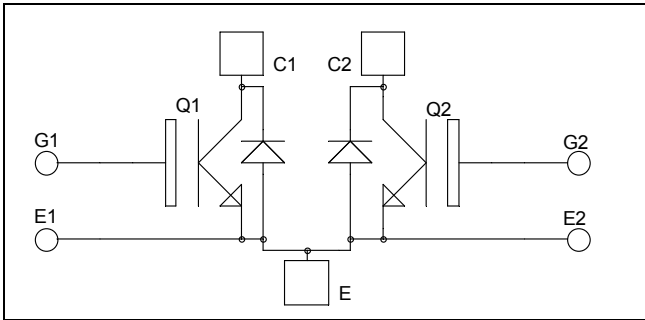
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**Dual common source
Trench + Field Stop IGBT3
Power Module**

**$V_{CES} = 600V$
 $I_C = 600A^* @ T_c = 80^\circ C$**



Application

- AC Switches
- Switched Mode Power Supplies
- Uninterruptible Power Supplies

Features

- Trench + Field Stop IGBT3 Technology
 - Low voltage drop
 - Low tail current
 - Switching frequency up to 20 kHz
 - Soft recovery parallel diodes
 - Low diode VF
 - Low leakage current
 - RBSOA and SCSOA rated
- Kelvin emitter 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

Absolute maximum ratings

Symbol	Parameter	Max ratings	Unit
V_{CES}	Collector - Emitter Breakdown Voltage	600	V
I_C	Continuous Collector Current	$T_C = 25^\circ C$	700 *
		$T_C = 80^\circ C$	600 *
I_{CM}	Pulsed Collector Current	$T_C = 25^\circ C$	800
V_{GE}	Gate - Emitter Voltage	± 20	V
P_D	Maximum Power Dissipation	$T_C = 25^\circ C$	2300
RBSOA	Reverse Bias Safe Operating Area	$T_j = 150^\circ C$	1200A @ 550V

* Specification of IGBT device but output current must be limited to 500A to not exceed a delta of temperature greater than 100°C for the connectors.

CAUTION: These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on www.microsemi.com

All ratings @ $T_j = 25^\circ\text{C}$ unless otherwise specified

Electrical Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
I_{CES}	Zero Gate Voltage Collector Current	$V_{GE} = 0\text{V}$, $V_{CE} = 600\text{V}$			750	μA
$V_{CE(sat)}$	Collector Emitter Saturation Voltage	$V_{GE} = 15\text{V}$ $I_C = 600\text{A}$		1.4 1.5	1.8	V
$V_{GE(th)}$	Gate Threshold Voltage	$V_{GE} = V_{CE}$, $I_C = 2\text{mA}$	5.0	5.8	6.5	V
I_{GES}	Gate – Emitter Leakage Current	$V_{GE} = 20\text{V}$, $V_{CE} = 0\text{V}$			800	nA

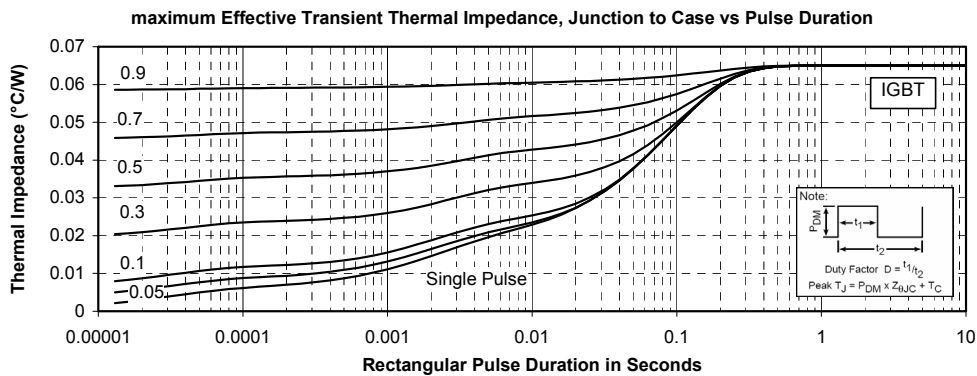
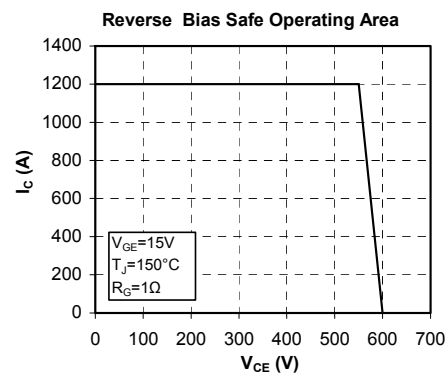
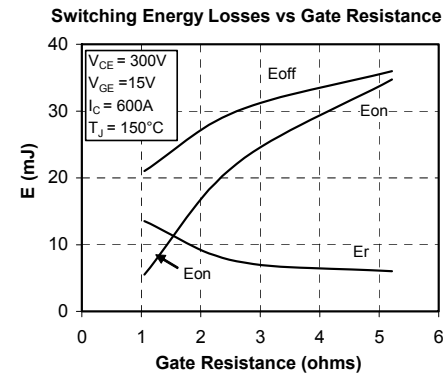
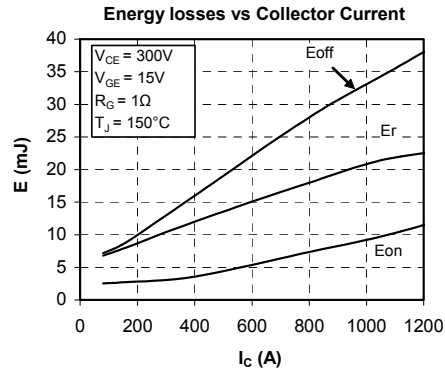
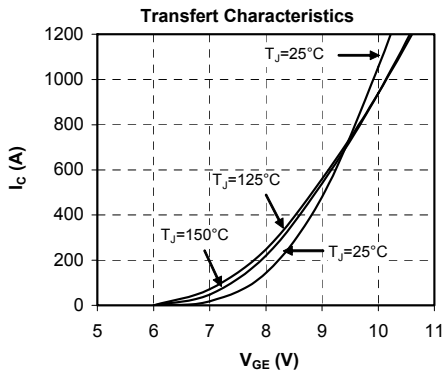
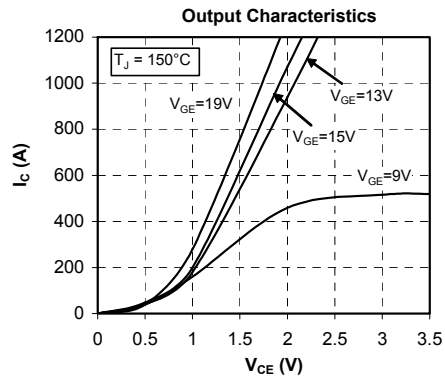
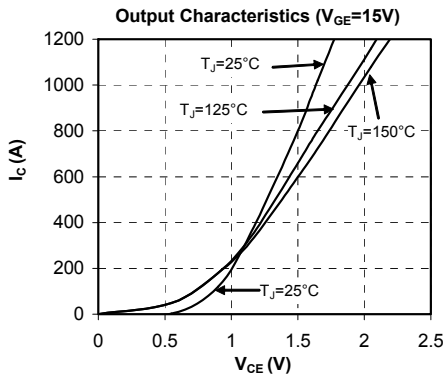
Dynamic Characteristics

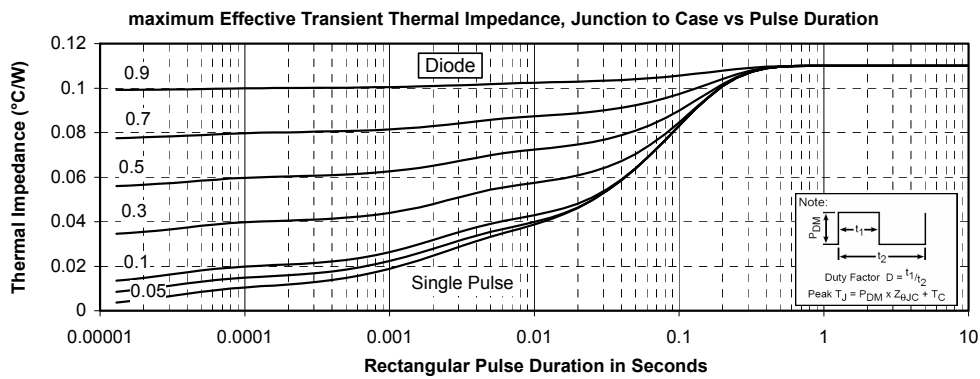
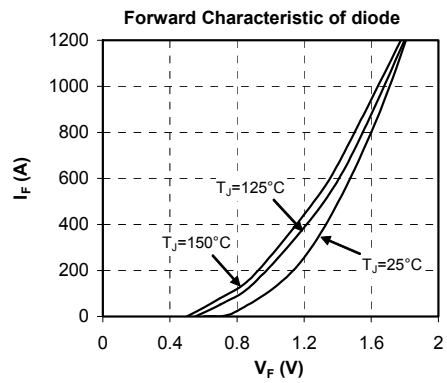
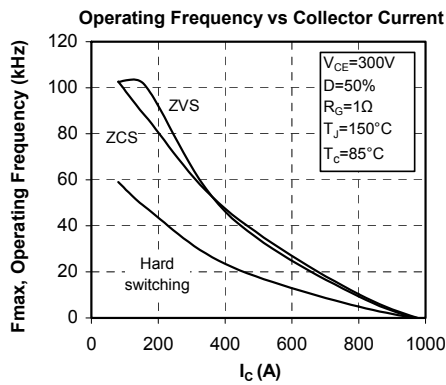
Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
C_{ies}	Input Capacitance	$V_{GE} = 0\text{V}$		49		nF
C_{oes}	Output Capacitance	$V_{CE} = 25\text{V}$		3.1		
C_{res}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		1.5		
$T_{d(on)}$	Turn-on Delay Time	Inductive Switching (25°C)		130		ns
T_r	Rise Time	$V_{GE} = \pm 15\text{V}$		55		
$T_{d(off)}$	Turn-off Delay Time	$V_{Bus} = 300\text{V}$ $I_C = 600\text{A}$		250		
T_f	Fall Time	$R_G = 2\Omega$		60		
$T_{d(on)}$	Turn-on Delay Time	Inductive Switching (150°C)		145		ns
T_r	Rise Time	$V_{GE} = \pm 15\text{V}$		60		
$T_{d(off)}$	Turn-off Delay Time	$V_{Bus} = 300\text{V}$ $I_C = 600\text{A}$		320		
T_f	Fall Time	$R_G = 2\Omega$		80		
E_{on}	Turn on Energy	$V_{GE} = \pm 15\text{V}$ $V_{Bus} = 300\text{V}$ $I_C = 600\text{A}$	$T_j = 25^\circ\text{C}$ $T_j = 150^\circ\text{C}$	3 5.5		mJ
E_{off}	Turn off Energy	$R_G = 2\Omega$	$T_j = 25^\circ\text{C}$ $T_j = 150^\circ\text{C}$	17 21		mJ

Reverse diode ratings and characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
V_{RRM}	Maximum Peak Repetitive Reverse Voltage		600			V
I_{RM}	Maximum Reverse Leakage Current	$V_R = 600\text{V}$			350 550	μA
I_F	DC Forward Current			600		A
V_F	Diode Forward Voltage	$I_F = 600\text{A}$ $V_{GE} = 0\text{V}$		1.5 1.4	1.9	V
t_{rr}	Reverse Recovery Time			120 210		ns
Q_{rr}	Reverse Recovery Charge	$I_F = 600\text{A}$ $V_R = 300\text{V}$ $di/dt = 5000\text{A}/\mu\text{s}$		27 57		μC
E_r	Reverse Recovery Energy			6.9 14.1		mJ

Typical Performance Curve





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