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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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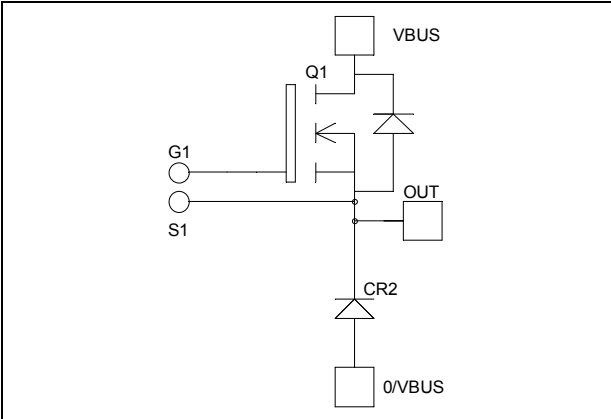
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Buck chopper MOSFET Power Module

$V_{DSS} = 200V$
 $R_{DSon} = 4m\Omega \text{ typ @ } T_j = 25^\circ C$
 $I_D = 372A \text{ @ } T_c = 25^\circ C$

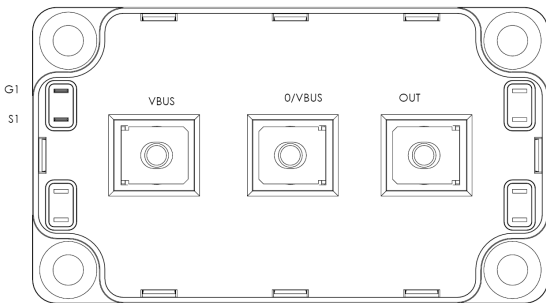


Application

- AC and DC motor control
- Switched Mode Power Supplies

Features

- Power MOS 7[®] MOSFETs
 - Low R_{DSon}
 - Low input and Miller capacitance
 - Low gate charge
 - Avalanche energy rated
 - Very rugged
- Kelvin source for easy drive
- Very low stray inductance
 - Symmetrical design
 - M5 power connectors
- High level of integration




Benefits

- Outstanding performance at high frequency operation
- Direct mounting to heatsink (isolated package)
- Low junction to case thermal resistance
- Low profile
- RoHS Compliant

Absolute maximum ratings

Symbol	Parameter	Max ratings	Unit
V_{DSS}	Drain - Source Breakdown Voltage	200	V
I_D	Continuous Drain Current	$T_c = 25^\circ C$	372
		$T_c = 80^\circ C$	278
			A
I_{DM}	Pulsed Drain current	1488	
V_{GS}	Gate - Source Voltage	± 30	V
R_{DSon}	Drain - Source ON Resistance	5	$m\Omega$
P_D	Maximum Power Dissipation	$T_c = 25^\circ C$	1250
I_{AR}	Avalanche current (repetitive and non repetitive)	100	A
E_{AR}	Repetitive Avalanche Energy	50	mJ
E_{AS}	Single Pulse Avalanche Energy	3000	


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

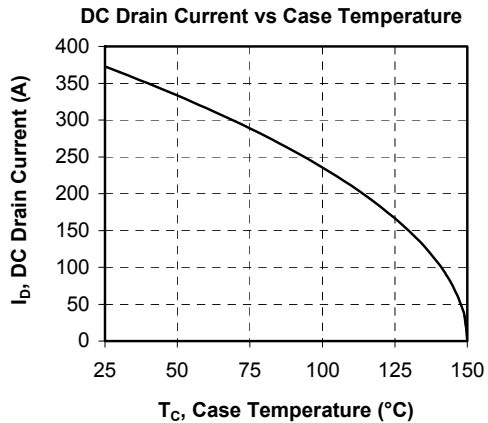
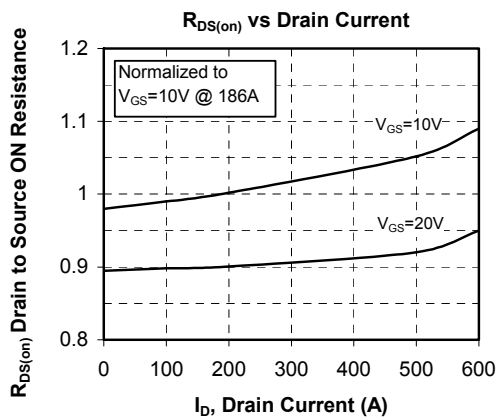
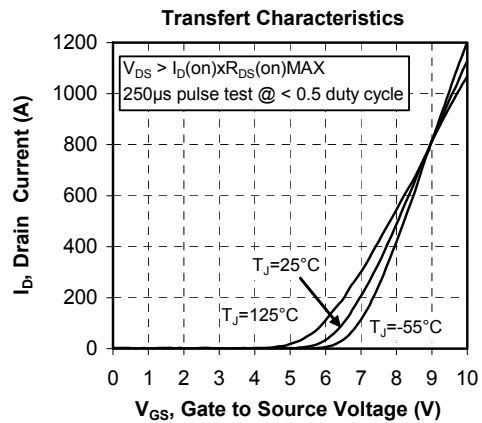
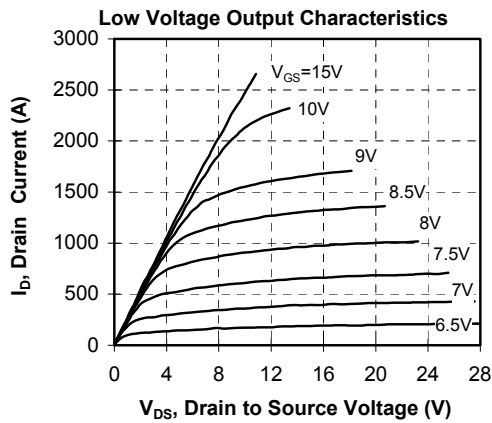
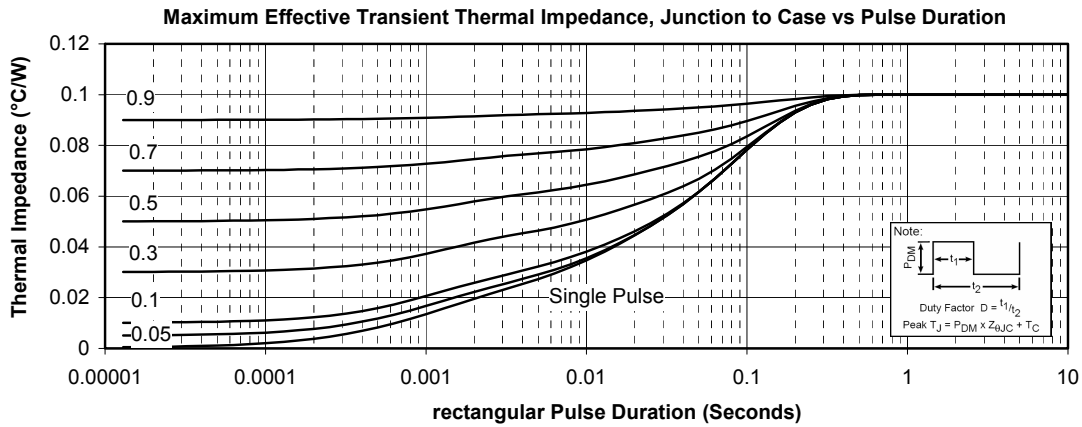
Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0V, V_{DS} = 200V$			500	μA
		$V_{GS} = 0V, V_{DS} = 160V$	$T_j = 25^\circ\text{C}$		2000	
$R_{DS(on)}$	Drain – Source on Resistance	$V_{GS} = 10V, I_D = 186A$		4	5	$\text{m}\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS} = V_{DS}, I_D = 10\text{mA}$	3		5	V
I_{GSS}	Gate – Source Leakage Current	$V_{GS} = \pm 30V, V_{DS} = 0V$			± 200	nA

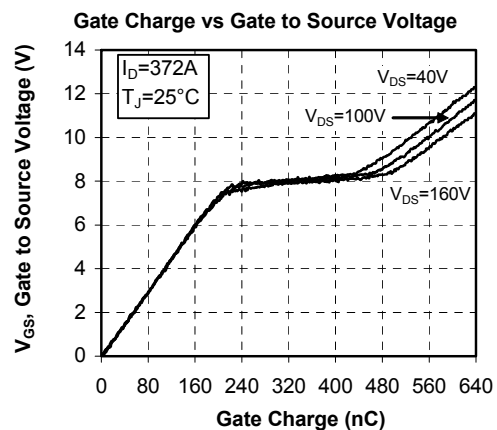
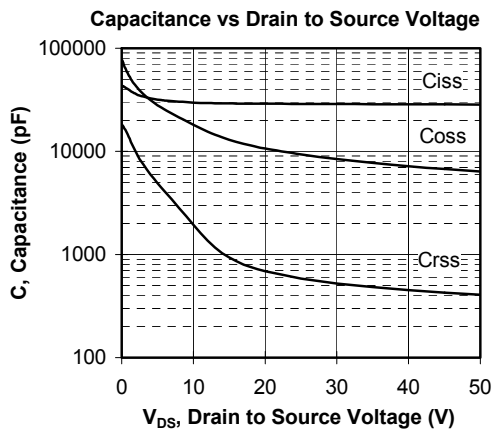
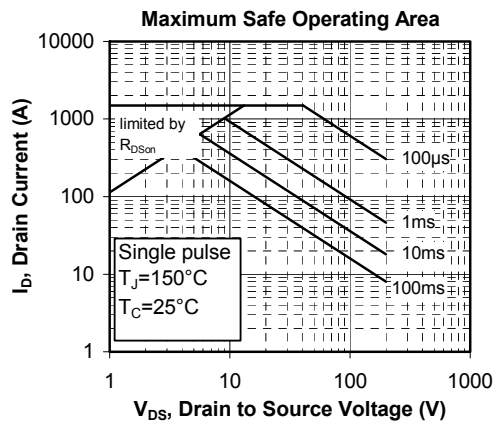
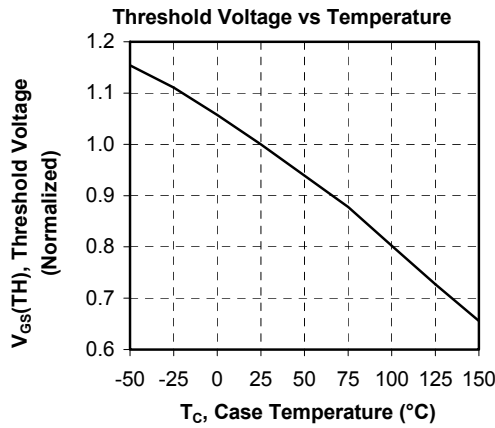
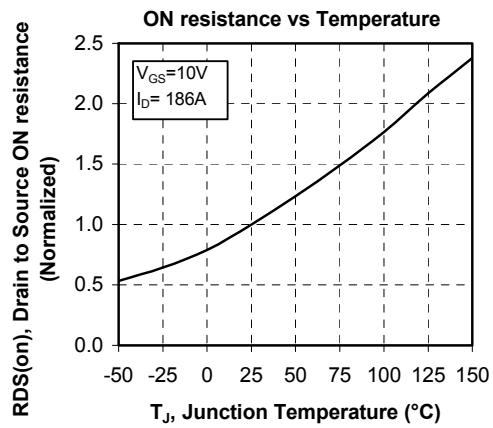
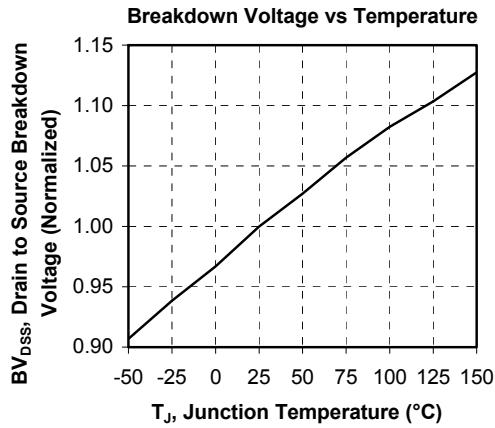
Dynamic Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
C_{iss}	Input Capacitance	$V_{GS} = 0V$		28.9		nF
C_{oss}	Output Capacitance	$V_{DS} = 25V$		9.32		
C_{rss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		0.58		
Q_g	Total gate Charge	$V_{GS} = 10V$		560		nC
Q_{gs}	Gate – Source Charge	$V_{Bus} = 100V$		212		
Q_{gd}	Gate – Drain Charge	$I_D = 372A$		268		
$T_{d(on)}$	Turn-on Delay Time	Inductive switching @ 125°C $V_{GS} = 15V$ $V_{Bus} = 133V$ $I_D = 372A$ $R_G = 1.2\Omega$		32		ns
T_r	Rise Time			64		
$T_{d(off)}$	Turn-off Delay Time			88		
T_f	Fall Time			116		
E_{on}	Turn-on Switching Energy	Inductive switching @ 25°C $V_{GS} = 15V, V_{Bus} = 133V$ $I_D = 372A, R_G = 1.2\Omega$		3396		μJ
E_{off}	Turn-off Switching Energy			3716		
E_{on}	Turn-on Switching Energy	Inductive switching @ 125°C $V_{GS} = 15V, V_{Bus} = 133V$ $I_D = 372A, R_G = 1.2\Omega$		3744		μJ
E_{off}	Turn-off Switching Energy			3944		

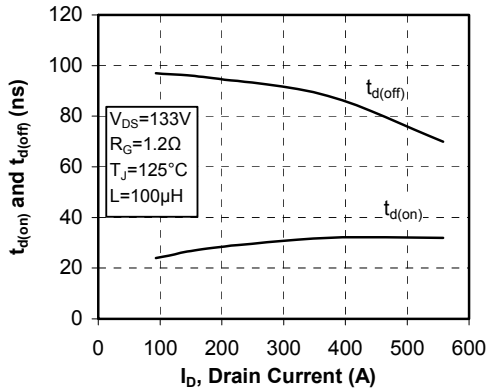
Chopper diode ratings and characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
V_{RRM}	Maximum Peak Repetitive Reverse Voltage		200			V
I_{RM}	Maximum Reverse Leakage Current	$V_R = 200V$	$T_j = 25^\circ\text{C}$		250	μA
			$T_j = 125^\circ\text{C}$		750	
I_F	DC Forward Current	$T_c = 80^\circ\text{C}$		300		A
V_F	Diode Forward Voltage	$I_F = 300A$		1	1.1	V
		$I_F = 600A$		1.4		
		$I_F = 300A$	$T_j = 125^\circ\text{C}$	0.9		
t_{rr}	Reverse Recovery Time	$I_F = 300A$ $V_R = 133V$	$T_j = 25^\circ\text{C}$	60		ns
			$T_j = 125^\circ\text{C}$	110		
Q_{rr}	Reverse Recovery Charge	$di/dt = 600A/\mu\text{s}$	$T_j = 25^\circ\text{C}$	600		nC
			$T_j = 125^\circ\text{C}$	2520		

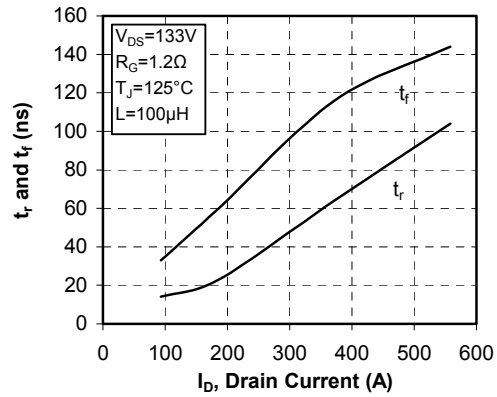
Typical Performance Curve




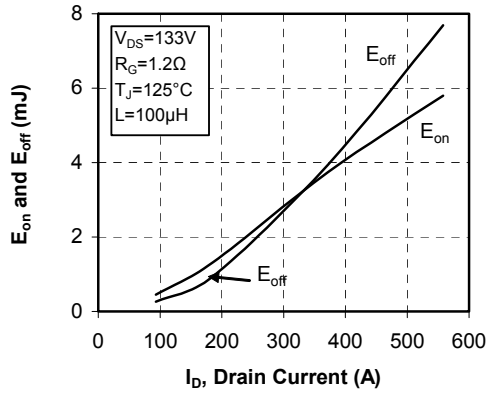
Delay Times vs Current



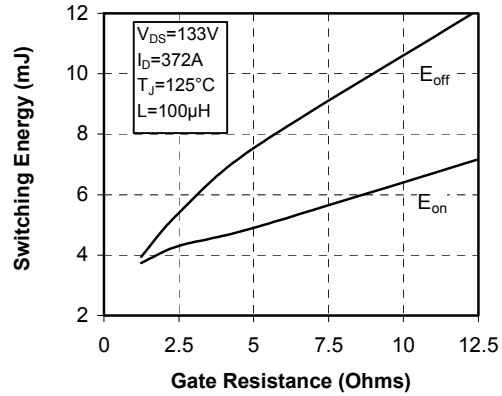
Rise and Fall times vs Current



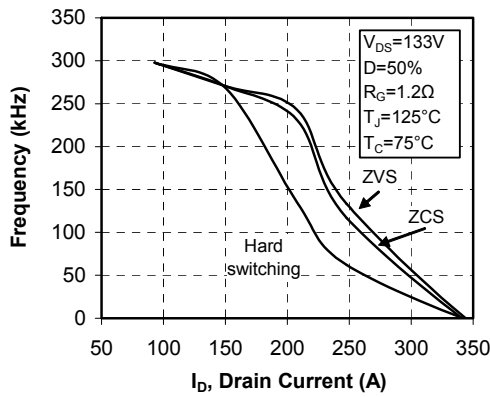
Switching Energy vs Current



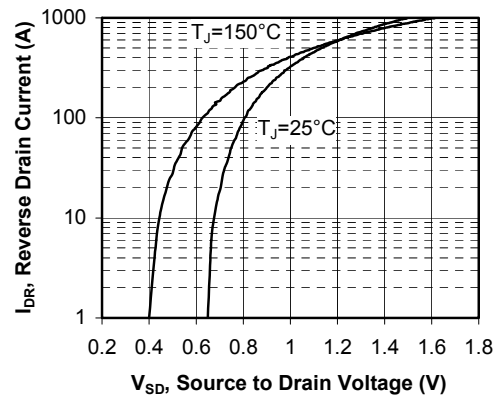
Switching Energy vs Gate Resistance



Operating Frequency vs Drain Current



Source to Drain Diode Forward Voltage



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