

PRIMARY CHARACTERISTICS

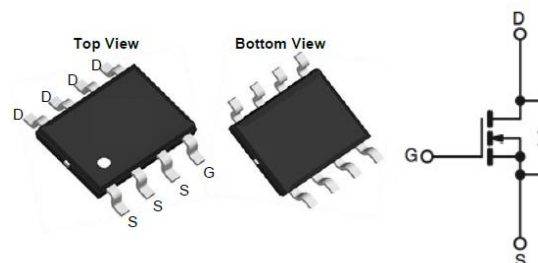
BV _{DSS}	R _{DS(on)} MAX	I _D
30V	4mΩ@V _{GS} =10V	20.5A
	6mΩ@V _{GS} =4.5V	

GENERAL DESCRIPTION

- DC/DC Converters
- Notebook PC

SCHEMATIC DIAGRAM
SOP-8 PACKAGE

Marking : 4322



MECHANICAL DATA

- Case : Molded plastic,SOP-8
- Polarity : Shown above
- Terminals :Plated terminals,
solderable per MIL-STD-750,Method
2026
- Epoxy : UL94-V0 rated flame
retardant

Absolute Maximum Ratings @T =25°C unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current (Continuous) *AC	$T_A=25^{\circ}C$	I_D	20.5	A
	$T_A=70^{\circ}C$		16.5	
Drain Current (Pulse) *B		I_{DM}	70	A
Power Dissipation	$T_A=25^{\circ}C$	P_D	3	W
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	$^{\circ}C$

Thermal Resistance Ratings

Parameter		Symbol	Maximum	Unit
Maximum Junction-to-Ambient	≤ 10s	R _{thJA}	41	°C/W

● **Electrical Characteristics** @T_A=25°C unless otherwise noted

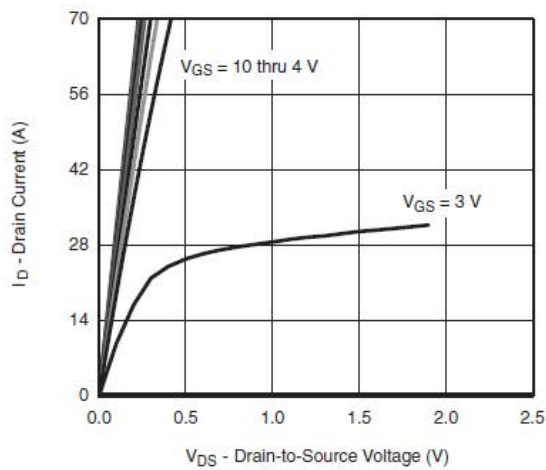
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$	--	--	1	μA
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_{DS} = 250\mu A$	1	1.6	3	V
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	--	--	± 100	nA
Drain-Source On-state Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$	--	3	4	m Ω
	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 8A$	--	4.6	6	m Ω
Diode Forward Voltage	V_{SD}	$I_{SD} = 1A, V_{GS} = 0V$	--	--	1.2	V
Diode Forward Current *AC	I_S	$T_C = 25^\circ C$	--	--	20.5	A
Switching						
Total Gate Charge	Q_g	$V_{DS} = 15V, I_D = 10A,$ $V_{GS} = 4.5V$	--	21.5	--	nC
Gate-Source Charge	Q_{gs}		--	6.9	--	nC
Gate-Drain Charge	Q_{gd}		--	7.1	--	nC
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 15V, R_L = 1.5\Omega,$ $V_{GEN} = 4.5V, R_{GEN} = 1\Omega$	--	30	--	ns
Turn-on Rise Time	t_r		--	19	--	ns
Turn-off Delay Time	$t_{d(off)}$		--	35	--	ns
Turn-Off Fall Time	t_f		--	15	--	ns
Dynamic						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 200KHz$	--	3950	--	pF
Output Capacitance	C_{oss}		--	450	--	pF
Reverse Transfer Capacitance	C_{rss}		--	400	--	pF

A: The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The value in any given application depends on the user's specific board design.

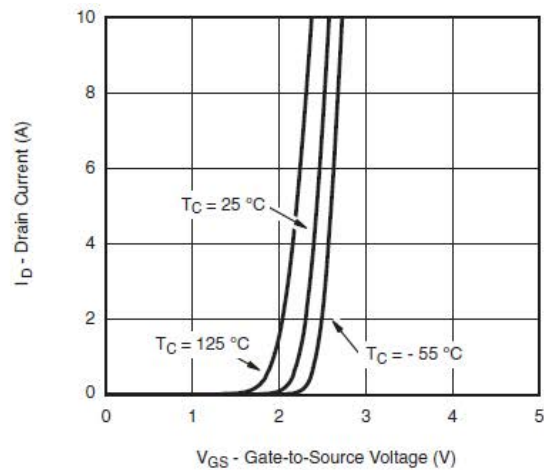
B: Repetitive rating, pulse width limited by junction temperature.

C: The current rating is based on the $t \leq 10$ s junction to ambient thermal resistance rating

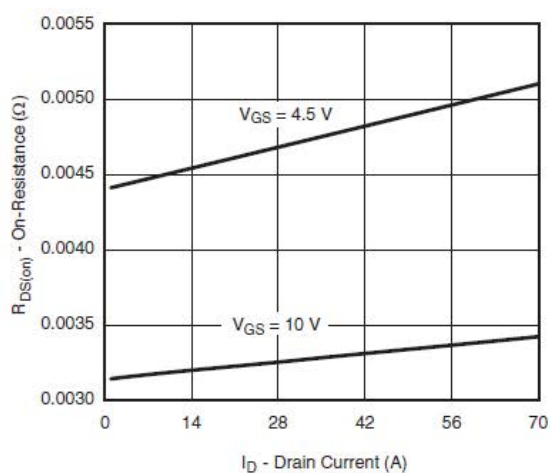
Typical Performance Characteristics (TJ = 25 °C, unless otherwise noted)



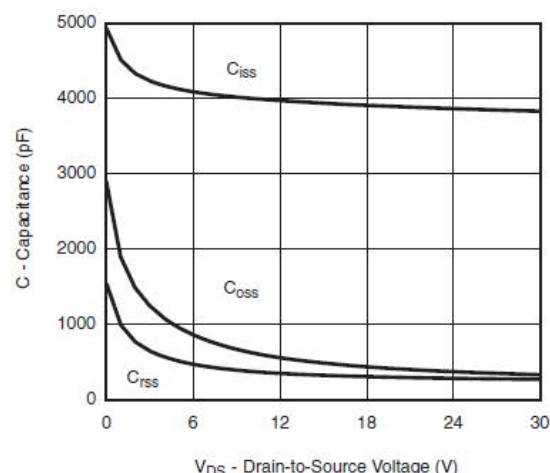
Output Characteristics



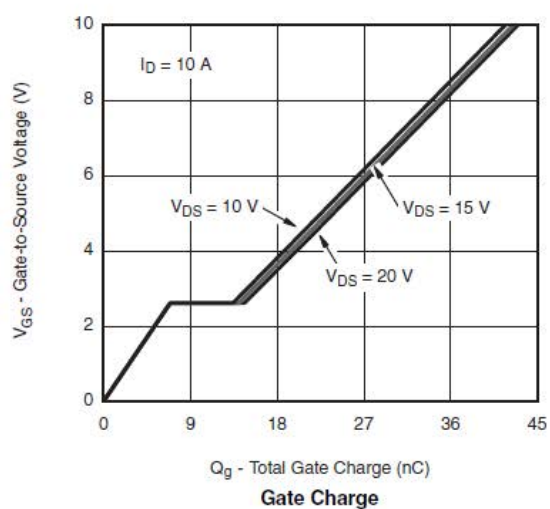
Transfer Characteristics



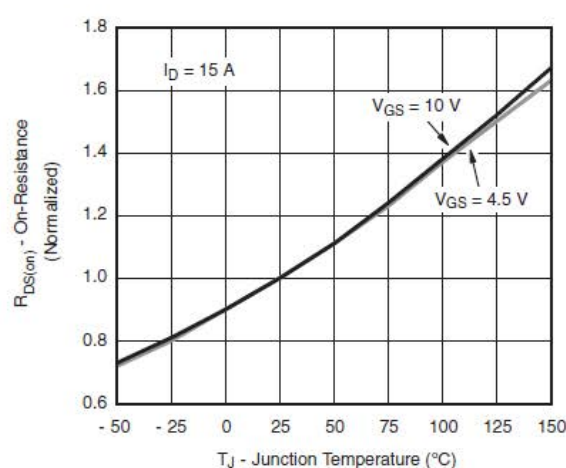
On-Resistance vs. Drain Current and Gate Voltage



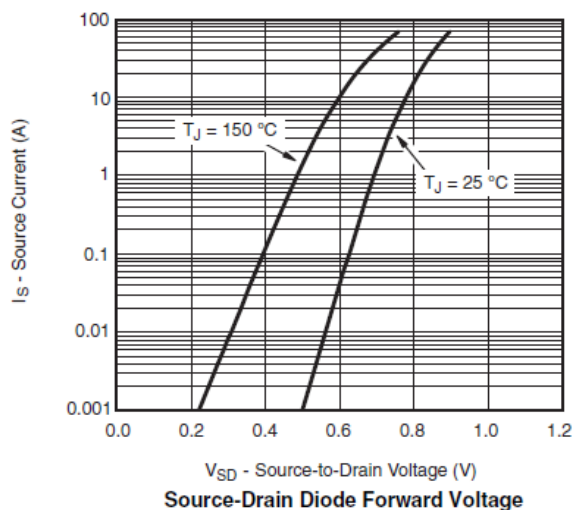
Capacitance



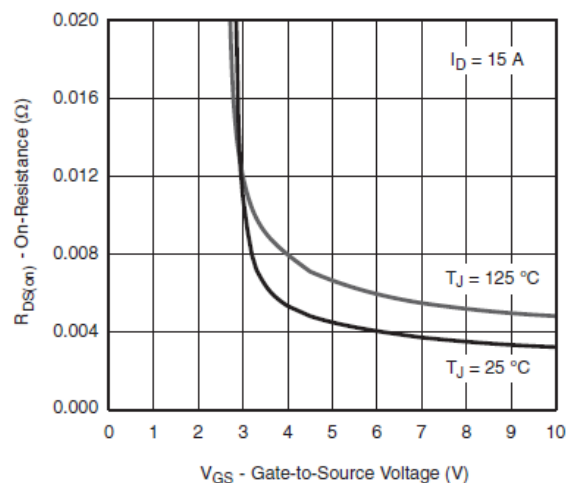
Gate Charge



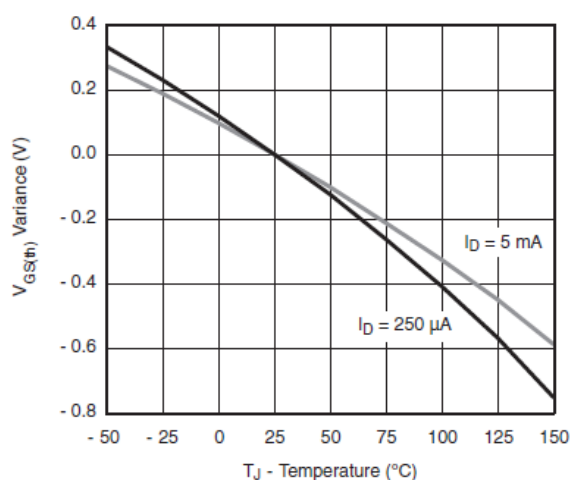
On-Resistance vs. Junction Temperature



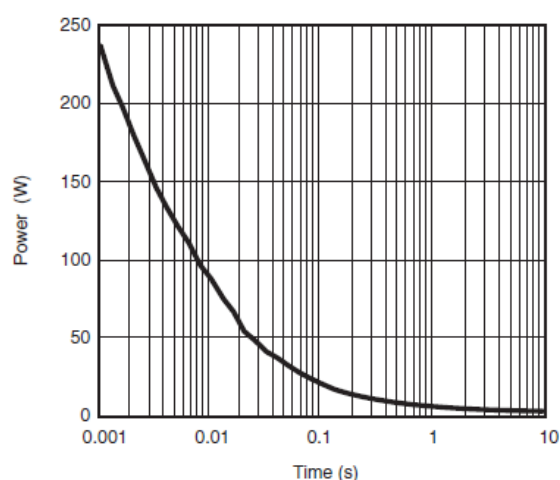
Source-Drain Diode Forward Voltage



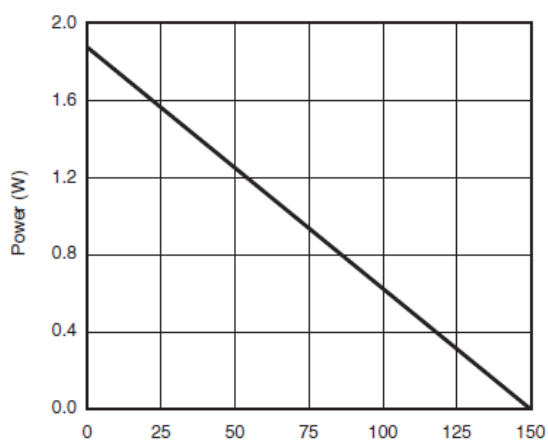
On-Resistance vs. Gate-to-Source Voltage



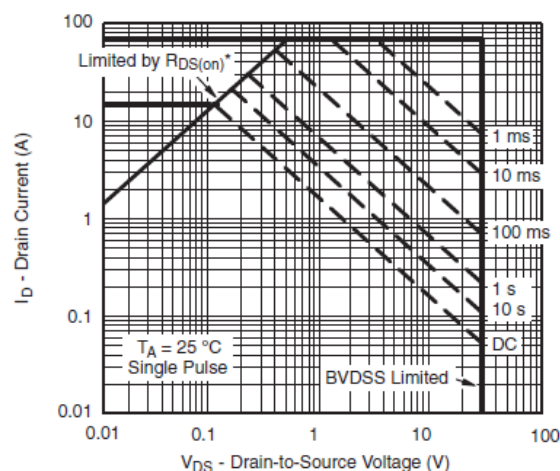
Threshold Voltage



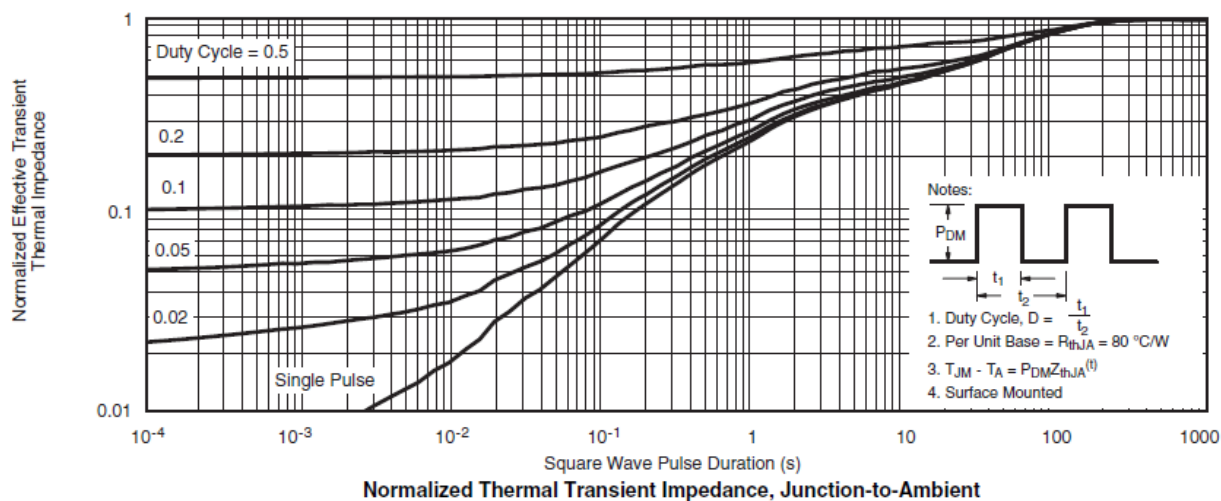
Single Pulse Power



T_A - Ambient Temperature ($^{\circ}\text{C}$)
Power, Junction-to-Ambient

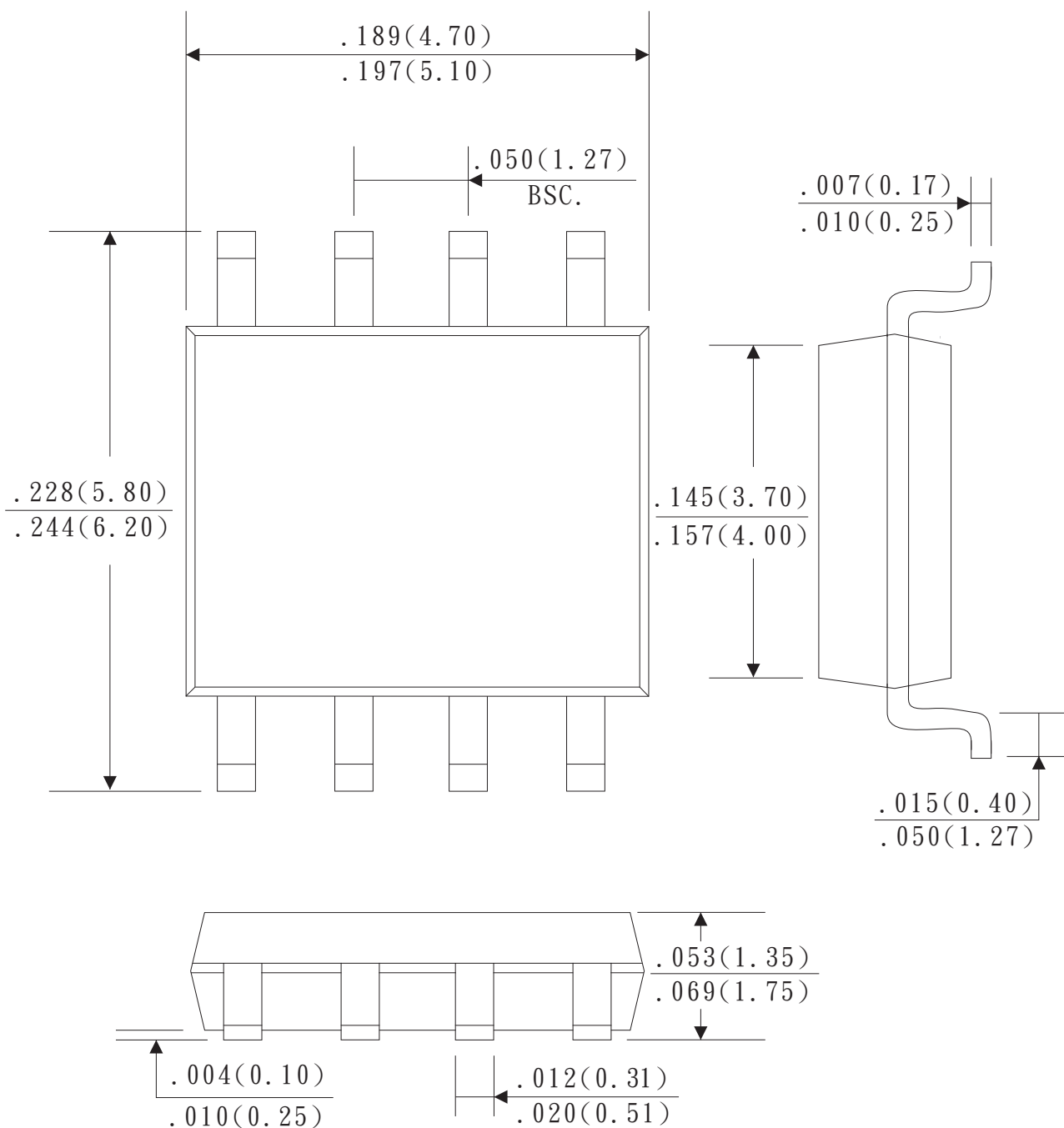


* $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified



Outline Drawing

SOP-8



Dimensions in inches and (millimeters)

Rev.D

Ordering Information:

Device PN	Packing
Part Number -T ⁽¹⁾ G ⁽²⁾ -WS ⁽³⁾	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

(3) WS : Willas brand abbreviation, Label Type does not display

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