



Product Summary

V _{(BR)DSS}	R _{DS(ON)} max	l _D max T _A = +25°C
	3Ω @ V _{GS} = 4.5V	250 mA
30V	5Ω @ V _{GS} = 4.0V	200 mA
	7Ω @ V _{GS} = 2.5V	100 mA

Description

This MOSFET has been designed to minimize the on-state resistance $(R_{DS(ON)})$ and yet maintain superior switching performance, making it ideal for high efficiency power management applications.

Applications

- Motor Control
- Power Management Functions
- DC-DC Converters
- Backlighting





Top View

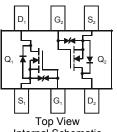
DUAL N-CHANNEL ENHANCEMENT MODE MOSFET

Features and Benefits

- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed
- ESD Protected Gate to 2kV
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 standards for High Reliability

Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections Indicator: See diagram
- Terminals: Finish Matte Tin annealed over Alloy42 leadframe. Solderable per MIL-STD-202, Method 208 (3)
- Weight: 0.006 grams (approximate)



Internal Schematic

Ordering Information (Note 4)

Part Number	Case	Packaging
DMN33D8LDW-7	SOT363	3K/Tape & Reel
DMN33D8LDW-13	SOT363	10K/Tape & Reel

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.

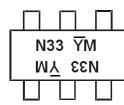
 See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.

3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

4. For packaging details, go to our website at http"//www.diodes.com/products/packages.html

Marking Information

Notes:



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1	133	Y	М	
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Shanghai A/T Site

N33 = Product Type Marking Code YM = Date Code Marking for SAT (Shanghai Assembly/ Test site)

Y = Y = Y = Y = (ex: A = 2013)M = Month (ex: 9 = September)

Chengdu A/T Site

Date Odde Rey												
Year	201 ⁻	1	2012		2013	20	14	2015		2016	2	2017
Code	Y		Z		А	E	3	С		D		E
Month	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	Ν	D



Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Units	
Drain-Source Voltage	V _{DSS}	30	V		
Gate-Source Voltage	V _{GSS}	±20	V		
Continuous Drain Current (Note 5) V_{GS} = 4.5V	Steady State	T _A = +25°C T _A = +70°C	Ι _D	250 200	mA
Maximum Continuous Body Diode Forward Current	(Note 5)	۱ _S	0.5	A	
Pulsed Drain Current (10µs pulse, duty cycle=1%)		I _{DM}	0.8	А	

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Units		
Tatal Dawar Dissination (Nata 5)	T _A = +25°C	T _A = +25°C		14/	
Total Power Dissipation (Note 5)	T _A = +70°C	PD	0.22	W	
Thermal Resistance, Junction to Ambient (Note 5) Steady State		R _{0JA}	360	°C/W	
Thermal Resistance, Junction to Case	R _{0JC}	126	C/W		
Operating and Storage Temperature Range	T _{J,} T _{STG}	-55 to 150	°C		

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

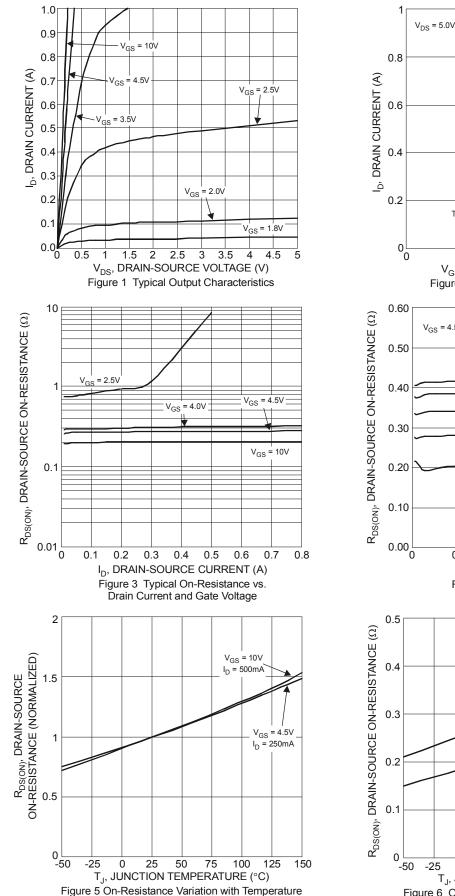
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)						
Drain-Source Breakdown Voltage	BV _{DSS}	30	_	_	V	V _{GS} = 0V, I _D = 1mA
Zero Gate Voltage Drain Current $@T_C = +25^{\circ}C$	I _{DSS}	—		1	μA	V _{DS} = 30V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	_	_	±10	μA	$V_{GS} = \pm 20V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 6)						
Gate Threshold Voltage	V _{GS(th)}	0.8		1.5	V	V _{DS} = 3V, I _D = 100µA
		—		2.4		V _{GS} = 10V, I _D = 250mA
		—		3.0		V _{GS} = 4.5V, I _D = 250mA
Static Drain-Source On-Resistance	R _{DS(ON)}	_	_	5.0	Ω	V _{GS} = 4.0V, I _D = 10mA
		_	_	7.0		V _{GS} = 2.5V, I _D = 5mA
		_	_	20		V _{GS} = 1.8V, I _D = 5mA
Forward Transfer Admittance	Y _{fs}	10	_	-	mS	V _{DS} = 3V, I _D = 10mA
Diode Forward Voltage	V _{SD}	_	_	1.2	V	V _{GS} = 0V, I _S = 115mA
DYNAMIC CHARACTERISTICS (Note 7)						
Input Capacitance	Ciss	—	48	—	pF	
Output Capacitance	Coss	—	11	—	pF	V _{DS} = 5V, V _{GS} = 0V, f = 1.0MHz
Reverse Transfer Capacitance	Crss	_	8	_	pF	1 - 1.00012
Gate Resistance	Rg	_	57	_	Ω	f=1MHz , Vgs=0V, Vds=0V
Total Gate Charge (V _{GS} = 4.5V)	Qg	_	0.55	_	nC	
Total Gate Charge (V _{GS} = 10V)	Qq	_	1.23	_	nC	$V_{GS} = 10V, V_{DS} = 10V,$
Gate-Source Charge	Q _{gs}	_	0.14	_	nC	– I _D = 250mA
Gate-Drain Charge	Q _{qd}	_	0.14	_	nC	
Turn-On Delay Time		_	2.9	_	ns	
Turn-On Rise Time	t _{D(on)} t _r	_	2.6	—	ns	V _{DD} = 30V, V _{GS} = 10V,
Turn-Off Delay Time	t _{D(off)}	_	18.2	—	ns	$R_{G} = 25\Omega, I_{D} = 200 \text{mA}$
Turn-Off Fall Time	tf	_	13.6	—	ns	1

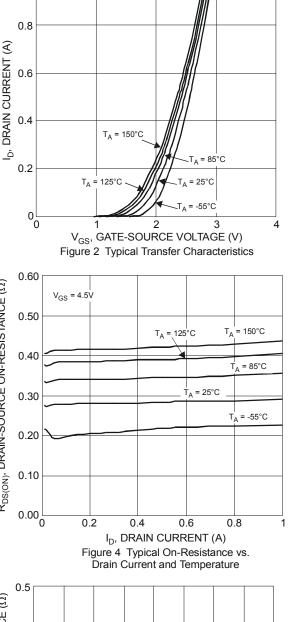
 Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided.
Short duration pulse test used to minimize self-heating effect. Notes:

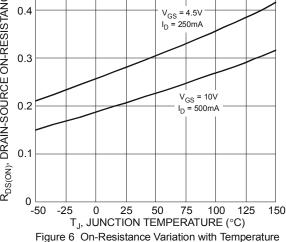
7. Guaranteed by design. Not subject to product testing.



DMN33D8LDW

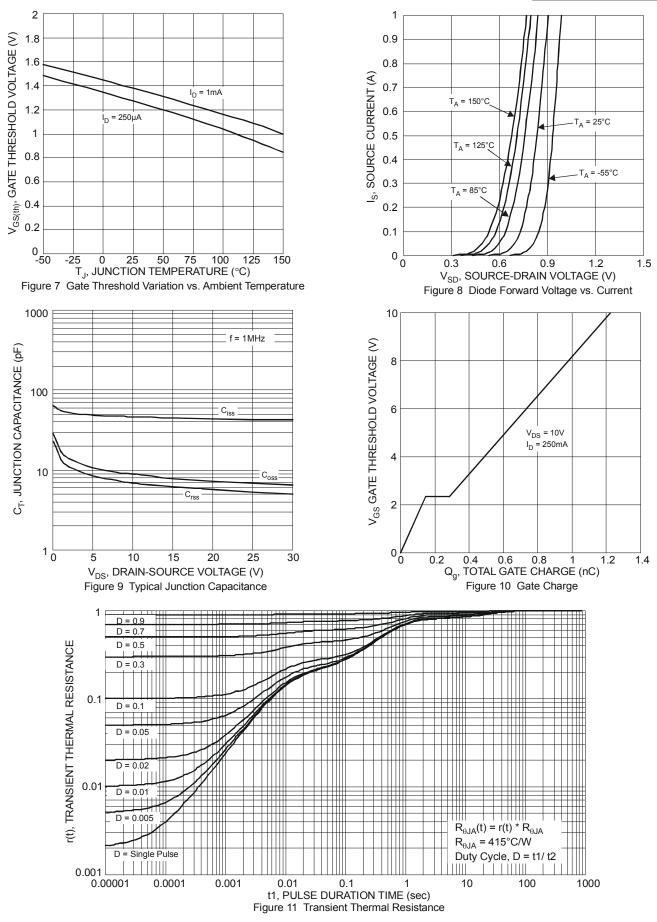








DMN33D8LDW



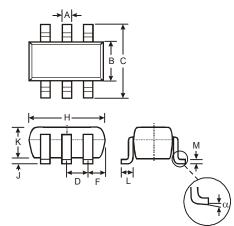
NEW PRODUCT

DMN33D8LDW Document number: DS36754 Rev. 3 - 2 August 2014 © Diodes Incorporated



Package Outline Dimensions

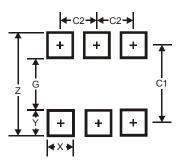
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



SOT363							
Dim	Min Max Typ						
Α	0.10	0.30	0.25				
В	1.15	1.15 1.35 1.30					
С	2.00	2.20	2.10				
D		0.65 Ty	р				
F	0.40	0.45	0.425				
Н	1.80	1.80 2.20 2.1					
J	0	0 0.10 0.0					
κ	0.90 1.00 1.00						
L	0.25	0.40	0.30				
М	0.10	0.22	0.11				
α	0°	8°	-				
All	All Dimensions in mm						

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
Z	2.5
G	1.3
Х	0.42
Y	0.6
C1	1.9
C2	0.65



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