



DUAL N-CHANNEL ENHANCEMENT MODE MOSFET

Product Summary

V _{(BR)DSS}	R _{DS(ON)} max	I _D max T _A = +25℃
30V	$0.4\Omega @ V_{GS} = 10V$	0.65A
30 V	0.7Ω @ $V_{GS} = 4.5V$	0.52A

Description

This MOSFET is designed to minimize the on-state resistance $(R_{\text{DS(ON)}})$ 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

Features and Benefits

- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed
- ESD Protected Gate
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

Mechanical Data

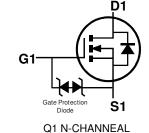
- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound.
 UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections Indicator: See Diagram
- Terminals: Finish Matte Tin Annealed over Alloy42 Leadframe.
 Solderable per MIL-STD-202,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

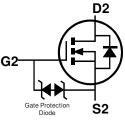


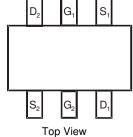


Top View

SOT363







Pin out

Q2 N-CHANNEAL

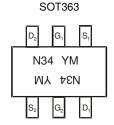
Ordering Information (Note 4)

Part Number	Case	Packaging
DMN32D4SDW-7	SOT363	3,000K/Tape & Reel
DMN32D4SDW-13	SOT363	10,000K/Tape & Reel

Notes:

- 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



N34 = Product Type Marking Code YM = Date Code Marking Y or Y= Year (ex: B = 2014) M = Month (ex: 9 = September)

Date Code Key

Year	201	4	2015		2016	20	17	2018		2019		2020
Code	В		С		D		=	F		G		Н
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	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 6) V _{GS} = 10V	I _D	0.65 0.50	А
Maximum Continuous Body Diode Forward Current (Note	Is	0.4	Α
Pulsed Drain Current (10μs pulse, duty cycle = 1%)	I _{DM}	4	Α

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

Characteristic		Symbol	Value	Units
Total Power Dissipation (Note 5)		P_{D}	0.29	W
Thermal Resistance, Junction to Ambient (Note 5)	Steady State	$R_{\theta JA}$	420	°C/W
Total Power Dissipation (Note 6)		P_D	0.35	W
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	$R_{ heta JA}$	360	°C/W
Thermal Resistance, Junction to Case		$R_{ heta JC}$	128	°C/W
Operating and Storage Temperature Range		$T_{J_i}T_{STG}$	-55 to 150	Ç

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

Characteristic	Symbol	Min	Tyro	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)	Syllibol	IVIIII	Тур	IVIAX	Ullit	rest Condition
Drain-Source Breakdown Voltage	BV _{DSS}	30	_	_	V	$V_{GS} = 0V, I_D = 250\mu A$
Zero Gate Voltage Drain Current	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 7)	1033		1		F" .	tg3 = 220 t; tb3 = 0 t
Gate Threshold Voltage	V _{GS(th)}	0.8	-	1.6	V	$V_{DS} = V_{GS}, I_D = 250 \mu A$
	askin	-	0.2	0.4		V _{GS} = 10V, I _D = 0.25A
	_	-	0.3	0.7		V _{GS} = 4.5V, I _D = 0.25A
Static Drain-Source On-Resistance	R _{DS (ON)}	-	0.4	1.0	Ω	$V_{GS} = 4.0V, I_D = 0.25A$
		-	0.9	-		$V_{GS} = 2.5V, I_D = 0.01A$
Diode Forward Voltage	V _{SD}	-	0.8	1.2	V	$V_{GS} = 0V, I_{S} = 0.23A$
DYNAMIC CHARACTERISTICS (Note 8)	, 05			l	l.	,
Input Capacitance	C _{iss}	-	50	-	pF	
Output Capacitance	Coss	-	10	-	pF	$V_{DS} = 15V, V_{GS} = 0V,$ - f = 1.0MHz
Reverse Transfer Capacitance	C _{rss}	-	6.8	-	pF	= 1.0MH2
Gate Resistance	Rg	-	114	-	Ω	$V_{DS} = V_{GS} = 0V, f = 1.0MHz$
Total Gate Charge (V _{GS} = 4.5V)	Qq	-	0.6	-	nC	
Total Gate Charge (V _{GS} = 10V)	Qq	-	1.3	-	nC	V _{DS} = 10V,
Gate-Source Charge	Qgs	-	0.2	-	nC	$I_D = 250 \text{mA}$
Gate-Drain Charge	Q _{qd}	-	0.1	-	nC	7
Turn-On Delay Time	t _{D(on)}	-	2.8	-	ns	
Turn-On Rise Time	tr	-	3.2	-	ns	$V_{GS} = 10V, V_{DS} = 30V,$
Turn-Off Delay Time	t _{D(off)}	-	26.3	-	ns	$I_D = 100 \text{mA}, RG = 10\Omega$
Turn-Off Fall Time	t _f	-	22.8	-	ns	7

Notes: 5. Device mounted on FR-4 PCB, with minimum recommended pad layout.

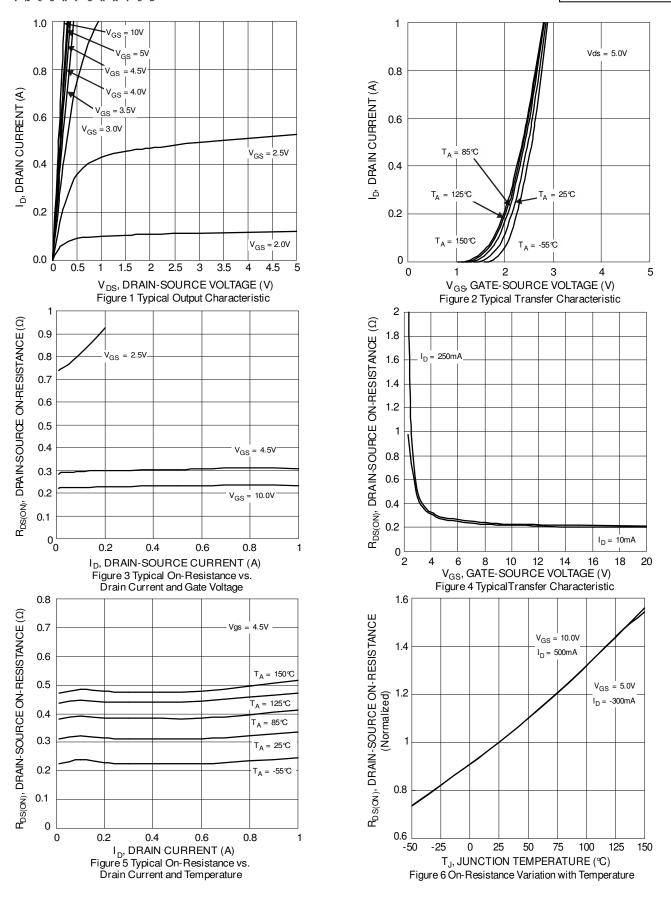
^{6.} Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided.

^{7.} Short duration pulse test used to minimize self-heating effect.

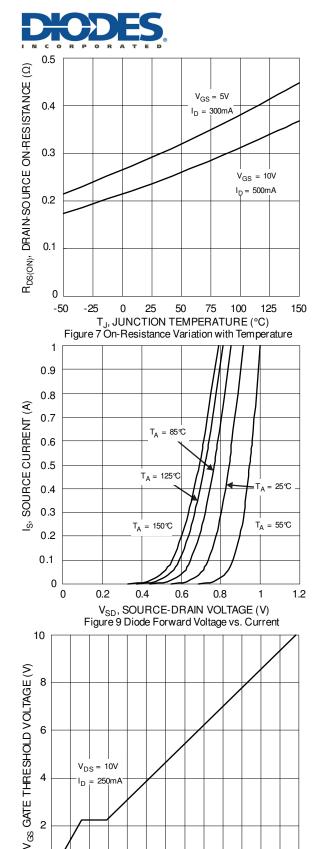
^{8.} Guaranteed by design. Not subject to product testing.

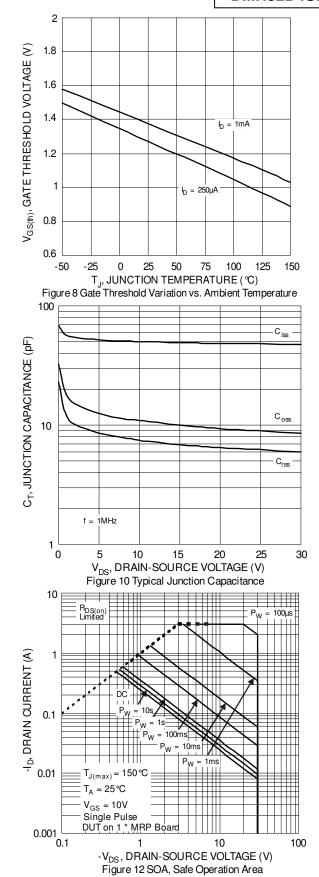






DMN32D4SDW



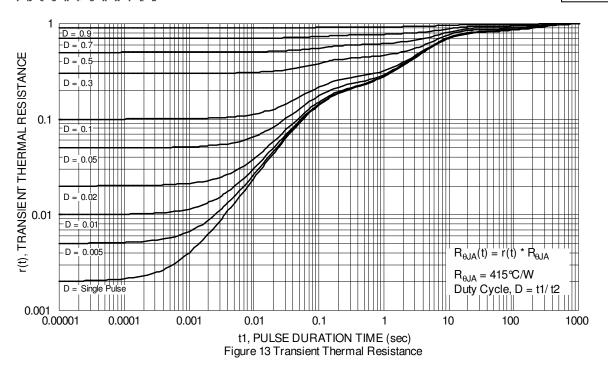


0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1 1.1 1.2 1.3

Q_g, TOTAL GATE CHARGE (nC)

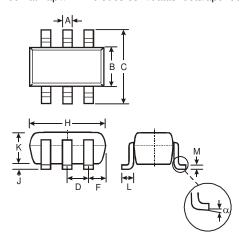
Figure 11 Gate Charge





Package Outline Dimensions

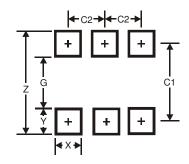
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



	SOT363							
Dim	Min	Max	Тур					
Α	0.10	0.30	0.25					
В	1.15	1.35	1.30					
С	2.00	2.20	2.10					
D		0.65 Typ						
F	0.40	0.45	0.425					
Н	1.80	2.20	2.15					
J	0	0.10	0.05					
K	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
Υ	0.6
C1	1.9
C2	0.65



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