



DMN30H4D0L

N-CHANNEL ENHANCEMENT MODE MOSFET

Product Summary

V _{(BR)DSS}	R _{DS(ON)}	I _D T _A = +25°C
300V	4Ω @ V _{GS} = 10V	0.25A
3007	4Ω @ V _{GS} = 4.5V	0.25A

Description and Applications

This new generation 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.

Description and Applications

- DC-DC Converters
- Power management functions
- Battery Operated Systems and Solid-State Relays
- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories, Transistors, etc

Features and Benefits

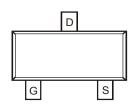
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Small Surface Mount Package
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

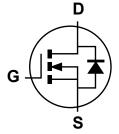
- Case: SOT23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solderable per MIL-STD-202, Method 208 @3
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Terminal Connections: See Diagram
- Weight: 0.008 grams (approximate)



Top View



Top View Pin Configuration



Equivalent Circuit

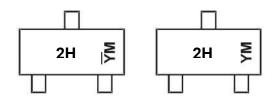
Ordering Information (Note 4)

Part Number	Case	Packaging
DMN30H4D0L-7	SOT23	3,000/Tape & Reel
DMN30H4D0L-13	SOT23	10,000/Tape & Reel

Notes:

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



2H = Marking Code

YM = Date Code Marking for SAT (Shanghai Assembly/ Test site)
YM = Date Code Marking for CAT (Chengdu Assembly/ Test site)

Y or \overline{Y} = Year (ex: A = $2\overline{0}13$) M = Month (ex: 9 = September)

Date Code Key

Year	201	3	2014		2015	20	16	2017		2018	1 2	2019
Code	Α		В		С)	Е		F		G
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}	300	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current (Note 6) V _{GS} = 10V	I _D	0.25 0.20	А
Pulsed Drain Current (10µs pulse, duty cycle ≦1%)	I _{DM}	2	Α
Maximum Body Diode Continuous Current (Note 6)	I _S	0.8	Α

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

Characteristic	Symbol	Value	Units		
Total Power Dissipation	(Note 5)	0	0.31	W	
Total Fower Dissipation	(Note 6)	P_{D}	0.47		
Thermal Resistance, Junction to Ambient	(Note 5)	0	377		
mermai Resistance, Junction to Ambient	(Note 6)	$R_{ hetaJA}$	255	°C/W	
Thermal Resistance, Junction to Case	$R_{\theta JC}$	81			
Operating and Storage Temperature Range		$T_{J_i} T_{STG}$	-55 to 150	°C	

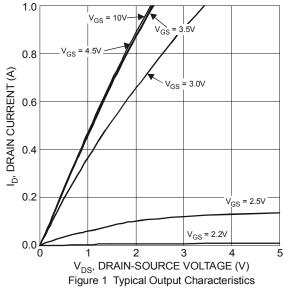
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

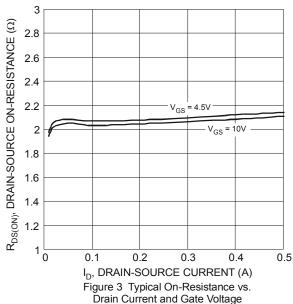
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
OFF CHARACTERISTICS (Note 7)							
Drain-Source Breakdown Voltage	BV _{DSS}	300			V	$V_{GS} = 0V, I_D = 250\mu A$	
Zero Gate Voltage Drain Current	I _{DSS}	_		1.0	μA	$V_{DS} = 240V, V_{GS} = 0V$	
Gate-Body Leakage	I _{GSS}			±100	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$	
ON CHARACTERISTICS (Note 7)							
Gate Threshold Voltage	V _{GS(th)}	1		3	>	$V_{DS} = V_{GS}, I_D = 250 \mu A$	
		_	2.1	4		$V_{GS} = 10V, I_D = 0.3A$	
Static Drain-Source On-Resistance	R _{DS(ON)}		2.1	4		$V_{GS} = 4.5V, I_D = 0.2A$	
			3.8	6		$V_{GS} = 2.7V, I_D = 0.1A$	
Diode Forward Voltage	V _{SD}	_	0.7	1.2	V	V _{GS} = 0V, I _S = 0.3A	
DYNAMIC CHARACTERISTICS (Note 8)							
Input Capacitance	C _{iss}		187.3				
Output Capacitance	Coss		11.7		pF	$V_{DS} = 25V, V_{GS} = 0V,$ f = 1.0MHz	
Reverse Transfer Capacitance	C _{rss}		8.7			1 - 1.0WH2	
Total Gate Charge	Q_g		7.6	_		4001/1/	
Gate-Source Charge	Q_{gs}		0.5	_	nC	$V_{DS} = 192V, V_{GS} = 10V,$ $I_{D} = 0.5A$	
Gate-Drain Charge	Q_{gd}	_	3.3	_		ID - 0.5A	
Turn-On Delay Time	t _{D(on)}	_	4.9	_			
Turn-On Rise Time	t _r	_	4.7	_	nS	$V_{DS} = 60V, R_L = 200\Omega$	
Turn-Off Delay Time	t _{D(off)}	_	25.8	_	115	V_{GS} = 10V, R_G = 25 Ω	
Turn-Off Fall Time	t _f	_	17.5	_			

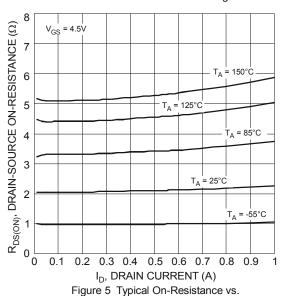
Notes:

- 5. Device mounted on FR-4 PC board, with minimum recommended pad layout, single sided.
- 6. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper pad layout
- 7 .Short duration pulse test used to minimize self-heating effect.
- 8. Guaranteed by design. Not subject to production testing.

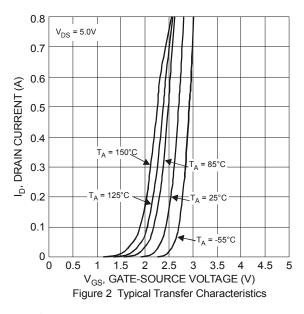


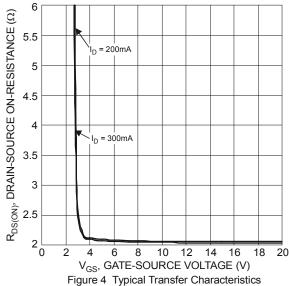






Drain Current and Temperature





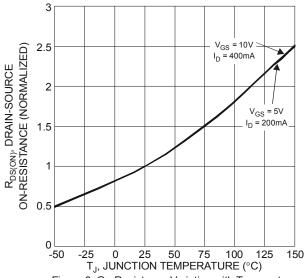
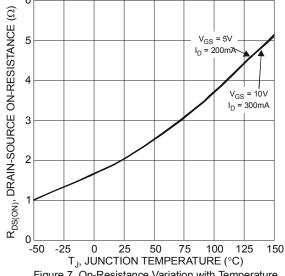
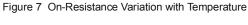


Figure 6 On-Resistance Variation with Temperature







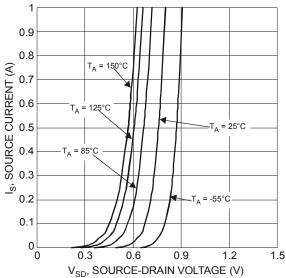
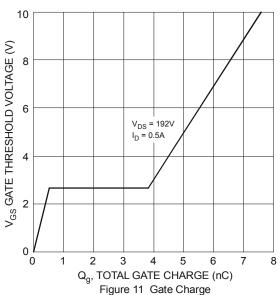


Figure 9 Diode Forward Voltage vs. Current



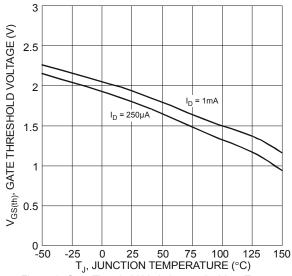
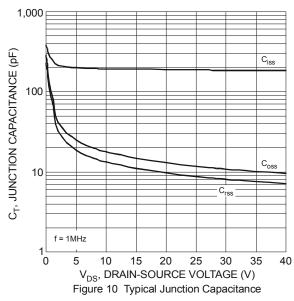
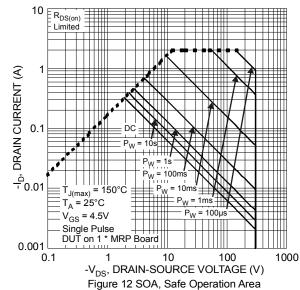
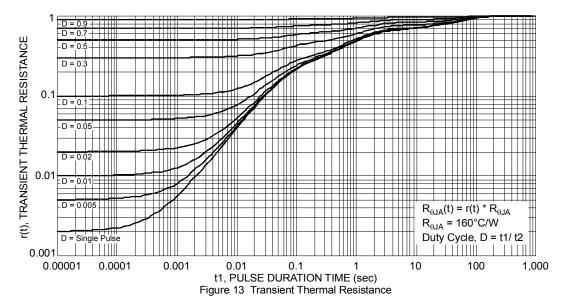


Figure 8 Gate Threshold Variation vs. Ambient Temperature



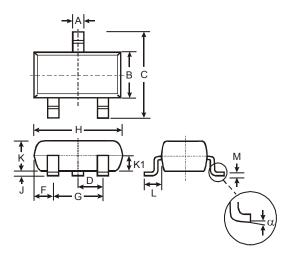






Package Outline Dimensions

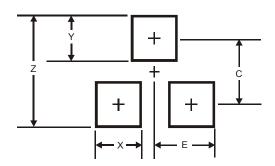
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



	SOT23								
Dim	Min	Max	Тур						
Α	0.37	0.51	0.40						
В	1.20	1.40	1.30						
С	2.30	2.50	2.40						
D	0.89	1.03	0.915						
F	0.45	0.60	0.535						
G	1.78	2.05	1.83						
Н	2.80	3.00	2.90						
J	0.013	0.10	0.05						
K	0.903	1.10	1.00						
K1	-	-	0.400						
L	0.45	0.61	0.55						
М	0.085	0.18	0.11						
α	0°	8°	-						
All Dimensions in mm									

Suggested Pad Layout

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



Dimensions	Value (in mm)				
Z	2.9				
Х	0.8				
Υ	0.9				
С	2.0				
E	1.35				



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