

Product Summary

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D $T_A = +25^\circ C$
30V	67m Ω @ $V_{GS} = 4.5V$	2.6A
	70m Ω @ $V_{GS} = 4.0V$	2.5A
	98m Ω @ $V_{GS} = 2.5V$	2.2A

Description

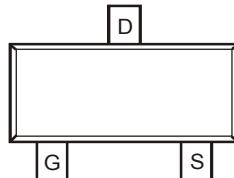
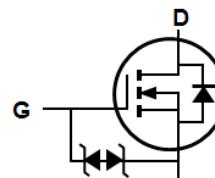
This new generation MOSFET has been designed to minimize the on-state resistance ($R_{DS(ON)}$) and yet maintain superior switching performance, making it ideal for high efficiency power management applications.

Applications

- Switching
- Power Management Functions



Top View


 Top View
 Pin Configuration


Equivalent Circuit

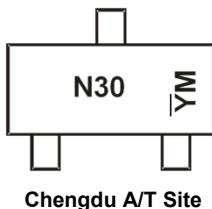
Ordering Information (Note 4)

Part Number	Case	Packaging
DMN3067LW-7	SOT323	3000/Tape & Reel
DMN3067LW-13	SOT323	10000/Tape & Reel

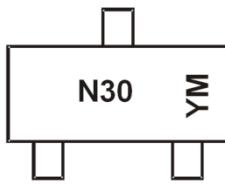
Notes:

- 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.
- Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



Chengdu A/T Site



Shanghai A/T Site

N30 = Product Type Marking Code

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

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

Y or YM = Year (ex: A = 2013)

M = Month (ex: 9 = September)

Date Code Key

Year	2011	2012	2013	2014	2015	2016	2017					
Code	Y	Z	A	B	C	D	E					
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V_{DSS}	30	V
Gate-Source Voltage			V_{GSS}	± 12	V
Continuous Drain Current (Note 6) $V_{GS} = 4.5\text{V}$	Steady State	$T_A = +25^\circ\text{C}$ $T_A = +70^\circ\text{C}$	I_D	2.6 2.1	A
Pulsed Drain Current (10 μs pulse, duty cycle = 1%)			I_{DM}	10	A

Thermal Characteristics

Characteristic		Symbol	Value	Units
Total Power Dissipation	(Note 5)	P_D	0.5	W
	(Note 6)		1.1	
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	241	°C/W
	(Note 6)		130	
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

 Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV_{DSS}	30	—	—	V	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1	μA	$V_{DS} = 30\text{V}, V_{GS} = 0\text{V}$
Gate-Body Leakage	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 12\text{V}, V_{DS} = 0\text{V}$
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(\text{th})}$	0.5	—	1.5	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
Static Drain-Source On-Resistance	$R_{DS(\text{ON})}$	—	48	67	mΩ	$V_{GS} = 4.5\text{V}, I_D = 2.5\text{A}$
		—	50	70		$V_{GS} = 4.0\text{V}, I_D = 2.5\text{A}$
		—	70	98		$V_{GS} = 2.5\text{V}, I_D = 2.5\text{A}$
Diode Forward Voltage	V_{SD}	—	—	1.2	V	$V_{GS} = 0\text{V}, I_S = 0.6\text{A}$
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C_{iss}	—	447	—	pF	$V_{DS} = 10\text{V}, V_{GS} = 0\text{V}, f = 1.0\text{MHz}$
Output Capacitance	C_{oss}	—	54	—		
Reverse Transfer Capacitance	C_{rss}	—	41	—		
Gate Resistance	R_G	—	23	—	Ω	$V_{DS} = 0\text{V}, V_{GS} = 0\text{V}, f = 1.0\text{MHz}$
Total Gate Charge	Q_g	—	4.6	—	nC	$V_{GS} = 4.5\text{V}, V_{DS} = 15\text{V}, I_D = 2.5\text{A}$
Gate-Source Charge	Q_{gs}	—	1.0	—		
Gate-Drain Charge	Q_{gd}	—	1.0	—		
Turn-On Delay Time	$t_{D(\text{on})}$	—	3.8	—	nS	$V_{DD} = 15\text{V}, I_D = 1.25\text{A}, V_{GEN} = 4.5\text{V}, R_{GEN} = 10\Omega$
Turn-On Rise Time	t_r	—	5.2	—		
Turn-Off Delay Time	$t_{D(\text{off})}$	—	15	—		
Turn-Off Fall Time	t_f	—	6.1	—		

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.

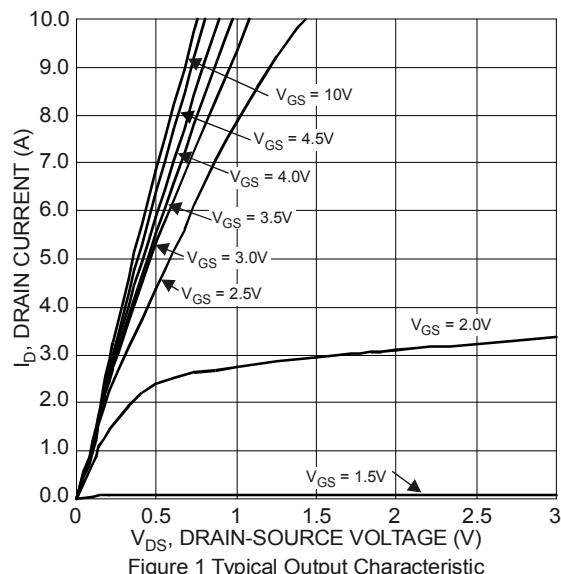


Figure 1 Typical Output Characteristic

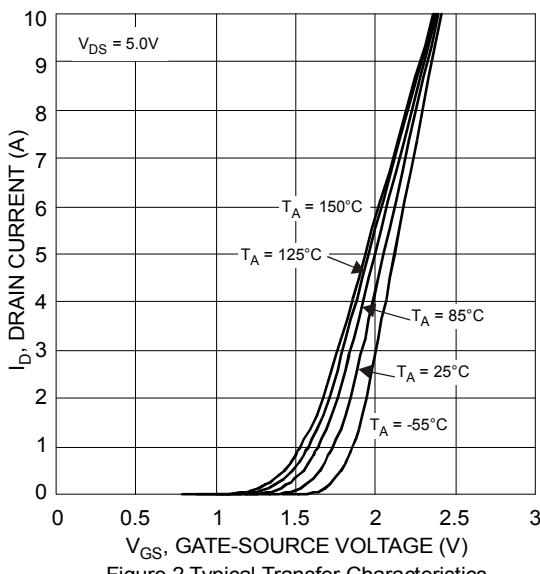


Figure 2 Typical Transfer Characteristics

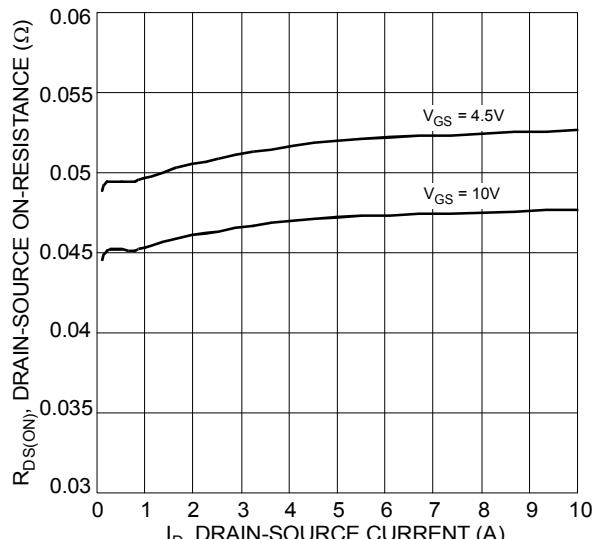


Figure 3 Typical On-Resistance vs.
Drain Current and Gate Voltage

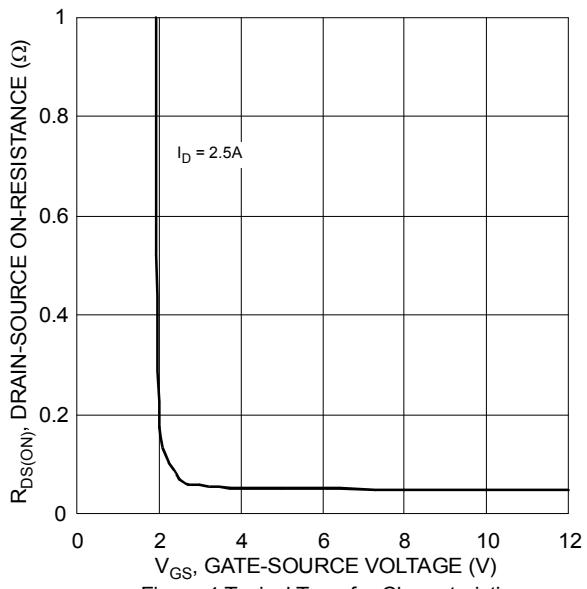


Figure 4 Typical Transfer Characteristic

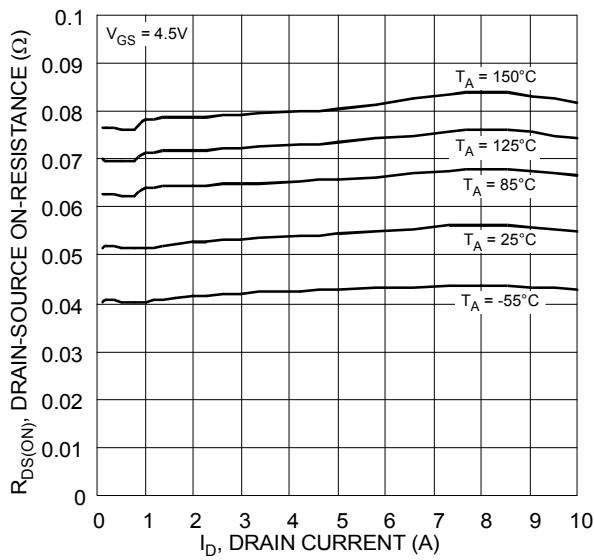


Figure 5 Typical On-Resistance vs.
Drain Current and Temperature

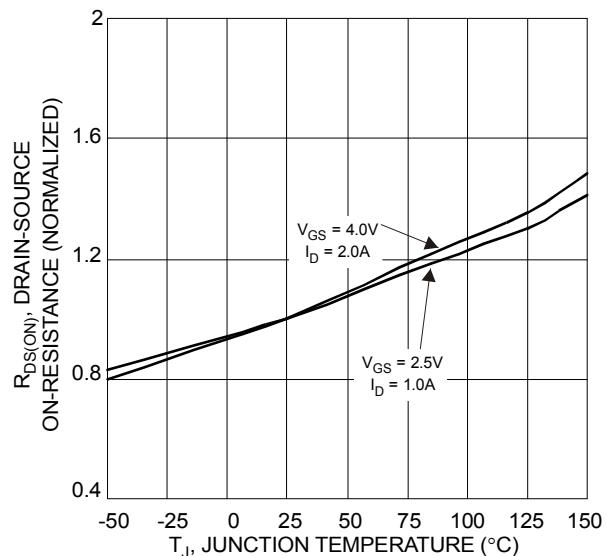


Figure 6 On-Resistance Variation with Temperature

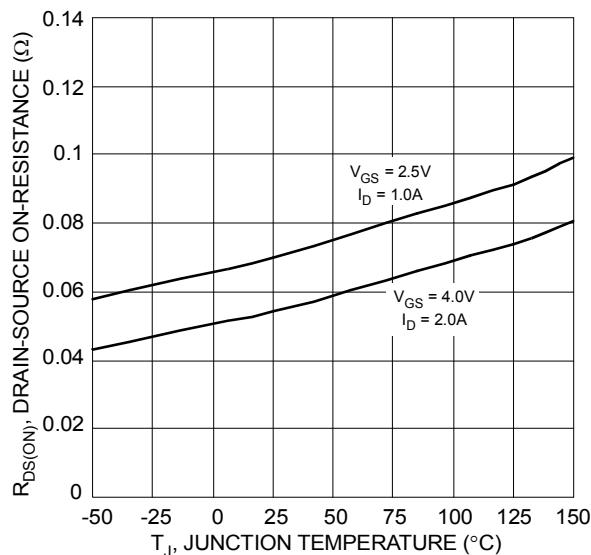


Figure 7 On-Resistance Variation with Temperature

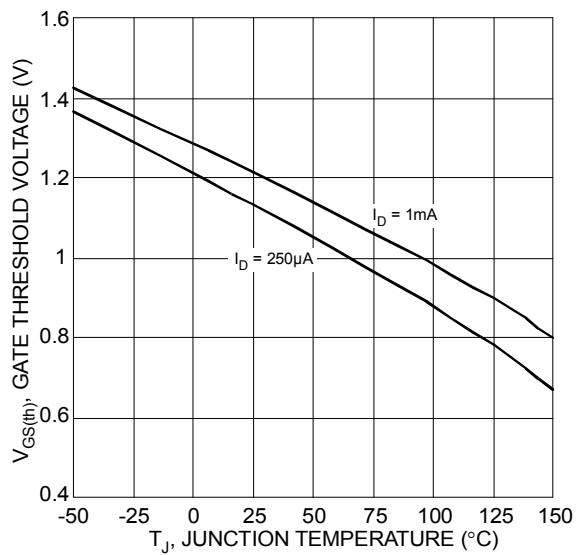


Figure 8 Gate Threshold Variation vs. Ambient Temperature

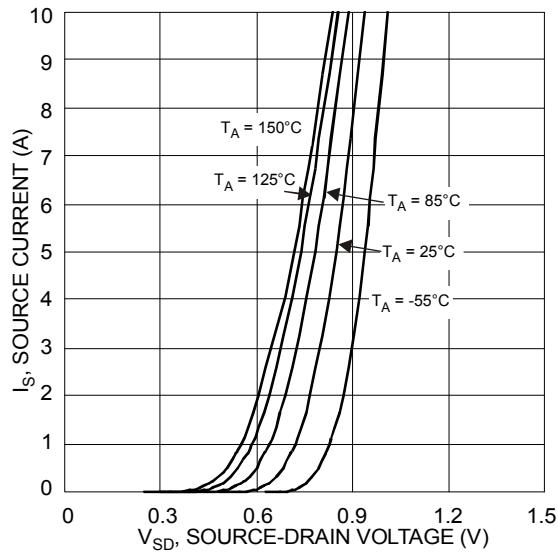


Figure 9 Diode Forward Voltage vs. Current

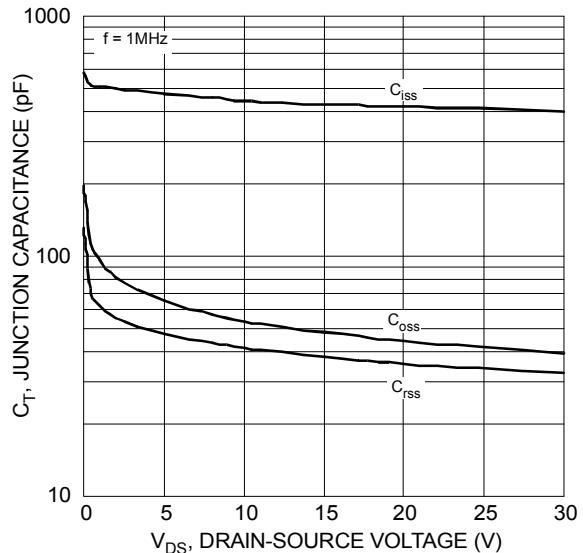


Figure 10 Typical Junction Capacitance

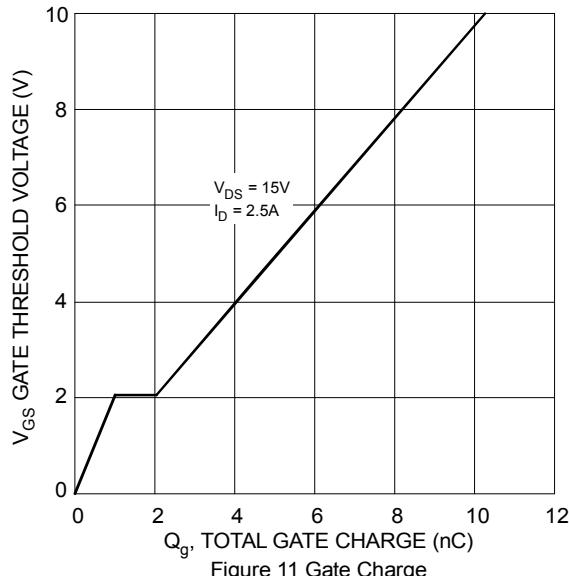


Figure 11 Gate Charge

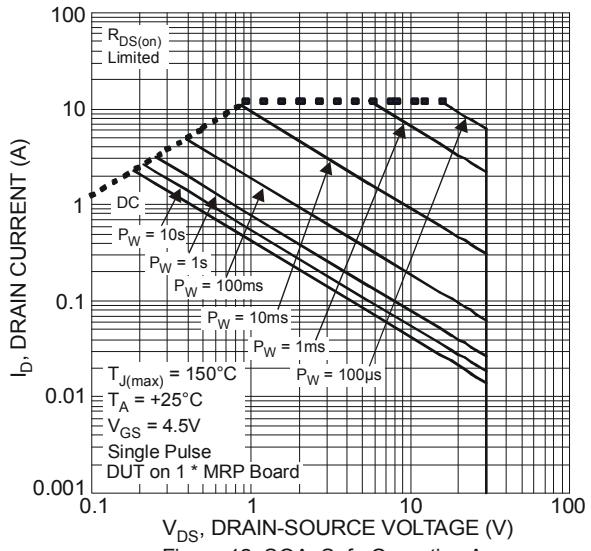
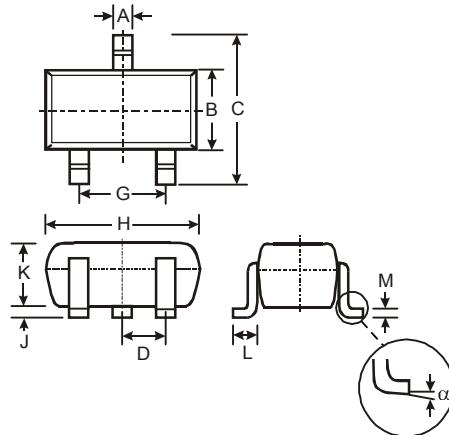


Figure 12 SOA, Safe Operation Area

Package Outline Dimensions

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

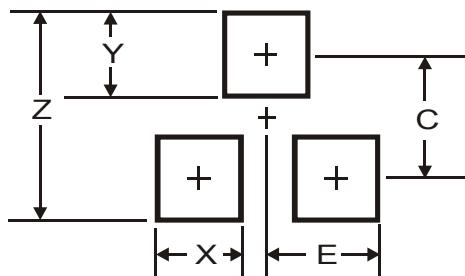


SOT323			
Dim	Min	Max	Typ
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	0.95
L	0.25	0.40	0.30
M	0.10	0.18	0.11
α	0°	8°	-

All Dimensions in mm

Suggested Pad Layout

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



Dimensions	Value (in mm)
Z	2.8
X	0.7
Y	0.9
C	1.9
E	1.0

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