

## Features

- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Small Surface Mount Package
- ESD Protected Gate, 1KV (HBM)
- **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: SOT323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208 (e3)
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Terminal Connections: See Diagram
- Weight: 0.006 grams (approximate)

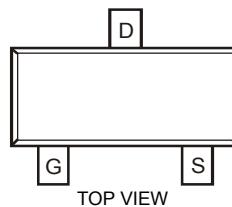
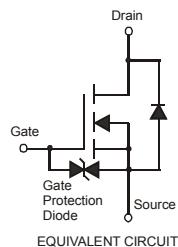
SOT323



ESD PROTECTED, 1KV



TOP VIEW



TOP VIEW

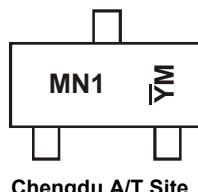
## Ordering Information (Note 4)

Part Number	Case	Packaging
DMN66D0LW-7	SOT323	3000/Tape & Reel

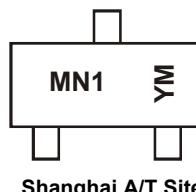
Notes:

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](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



Chengdu A/T Site



Shanghai A/T Site

MN1 = 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	2008	2009	2010	2011	2012	2013	2014	2015				
Code	V	W	X	Y	Z	A	B	C				
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	$V_{DSS}$	60	V
Gate-Source Voltage (Note 5)	$V_{GSS}$	$\pm 20$	V
Drain Current (Note 5)	$I_D$	115 73 800	mA
Continuous Continuous @ $+100^\circ\text{C}$ Pulsed			

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

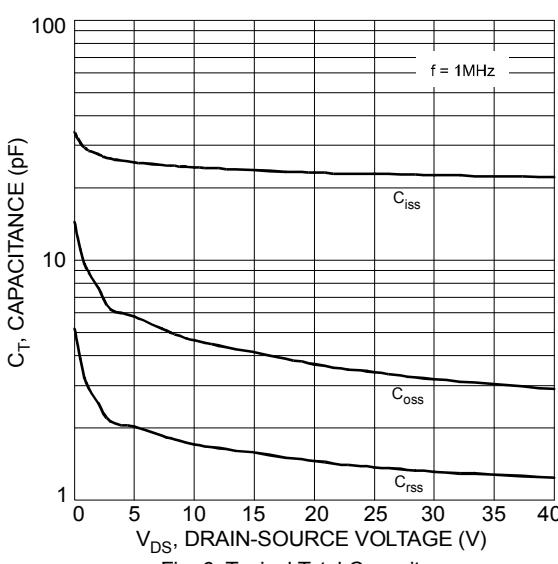
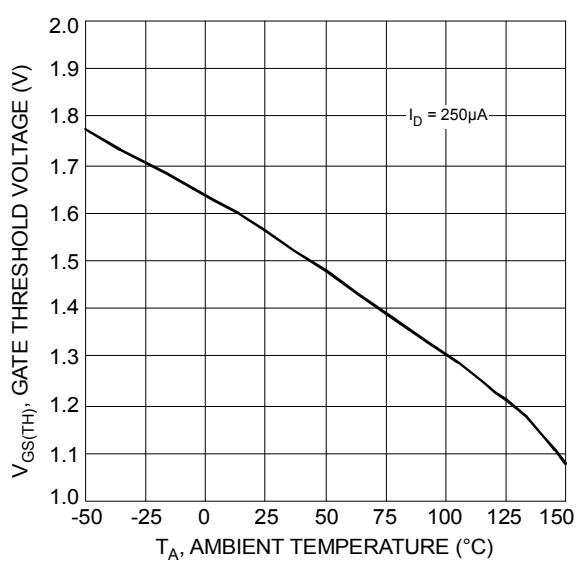
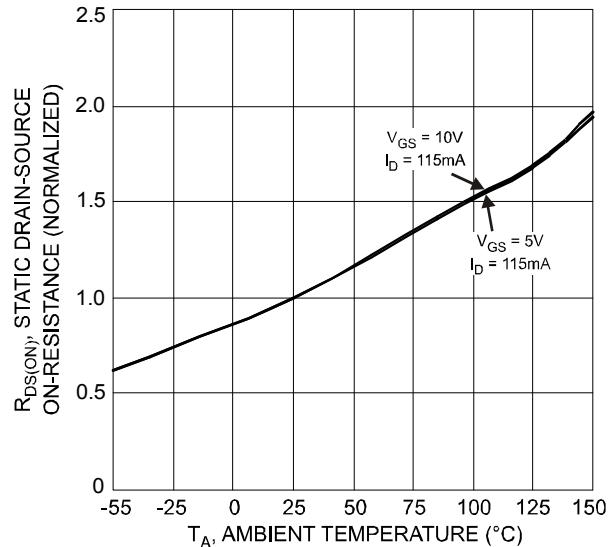
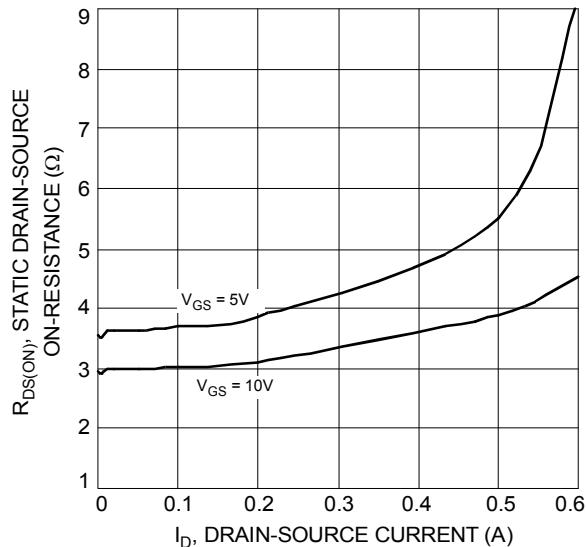
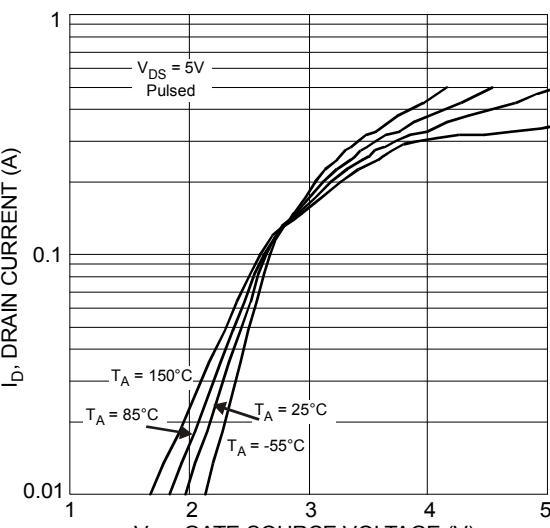
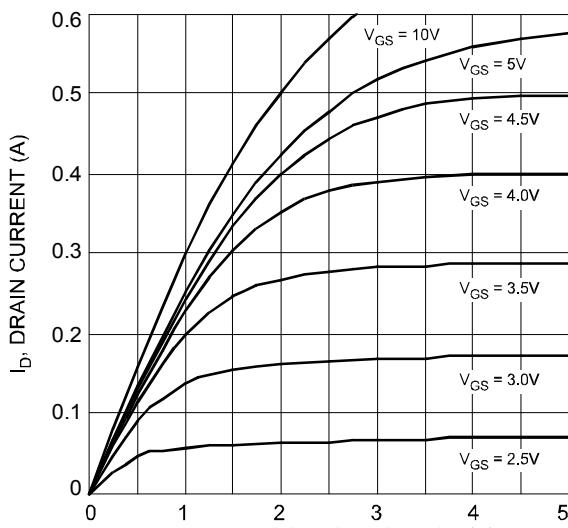
Characteristic	Symbol	Value	Units
Total Power Dissipation	$P_D$	200	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 6)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	60	70	—	V	$V_{GS} = 0V, I_D = 10\mu\text{A}$
Zero Gate Voltage Drain Current @ $T_C = +25^\circ\text{C}$ @ $T_C = +125^\circ\text{C}$	$I_{DSS}$	—	—	1.0 500	$\mu\text{A}$	$V_{DS} = 60\text{V}, V_{GS} = 0\text{V}$
Gate-Body Leakage	$I_{GSS}$	—	—	$\pm 5$	$\mu\text{A}$	$V_{GS} = \pm 20\text{V}, V_{DS} = 0\text{V}$
<b>ON CHARACTERISTICS (Note 6)</b>						
Gate Threshold Voltage	$V_{GS(th)}$	1.2	—	2.0	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
Static Drain-Source On-Resistance @ $T_J = +25^\circ\text{C}$ @ $T_J = +125^\circ\text{C}$	$R_{DS(ON)}$	—	3.5 3.0	6 5	$\Omega$	$V_{GS} = 5.0\text{V}, I_D = 0.115\text{A}$ $V_{GS} = 10\text{V}, I_D = 0.115\text{A}$
Forward Transconductance	$g_{FS}$	80	—	—	mS	$V_{DS} = 10\text{V}, I_D = 0.115\text{A}$
<b>DYNAMIC CHARACTERISTICS (Note 7)</b>						
Input Capacitance	$C_{iss}$	—	23	—	pF	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V}, f = 1.0\text{MHz}$
Output Capacitance	$C_{oss}$	—	3.4	—	pF	
Reverse Transfer Capacitance	$C_{rss}$	—	1.4	—	pF	
<b>SWITCHING CHARACTERISTICS (Note 7)</b>						
Turn-On Delay Time	$t_{D(ON)}$	—	10	—	ns	$V_{DD} = 30\text{V}, I_D = 0.115\text{A}, R_L = 150\Omega$
Turn-Off Delay Time	$t_{D(OFF)}$	—	33	—	ns	$V_{GEN} = 10\text{V}, R_{GEN} = 25\Omega$

Notes:

5. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
6. Short duration pulse test used to minimize self-heating effect.
7. Guaranteed by design. Not subject to production testing.



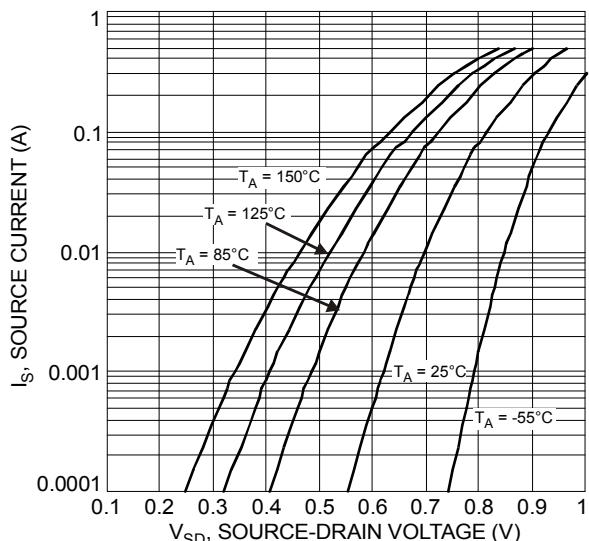
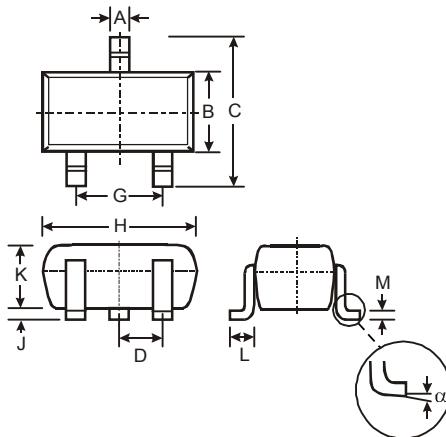


Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

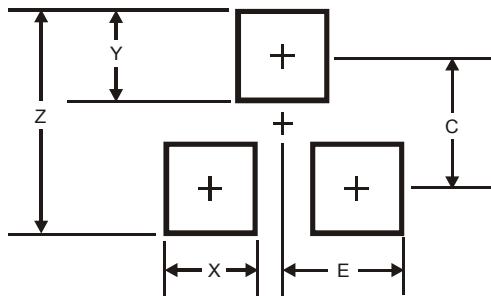
## Package Outline Dimensions

 Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the 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	1.00
L	0.25	0.40	0.30
M	0.10	0.18	0.11
$\alpha$	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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