

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**

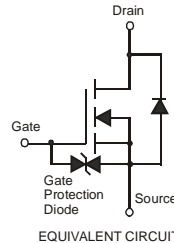
Mechanical Data

- Case: SOT-523
- 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 208e3
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Terminal Connections: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.002 grams (approximate)

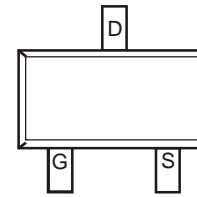


TOP VIEW

SOT-523



EQUIVALENT CIRCUIT



TOP VIEW

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

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V _{DSS}	60	V
Gate-Source Voltage (Note 1)	V _{GSS}	±20	V
Drain Current (Note 1)	I _D	115 73 800	mA
		Continuous Continuous @ +100°C Pulsed	

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

Characteristic	Symbol	Value	Units
Total Power Dissipation	P _D	200	mW
Thermal Resistance, Junction to Ambient	R _{θJA}	625	°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	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 3)						
Drain-Source Breakdown Voltage	BV _{DSS}	60	70	—	V	V _{GS} = 0V, I _D = 10μA
Zero Gate Voltage Drain Current	@ T _C = +25°C @ T _C = +125°C	I _{DSS}	—	— 1.0 500	μA	V _{DS} = 60V, V _{GS} = 0V
Gate-Body Leakage		I _{GSS}	—	—	±5 μA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 3)						
Gate Threshold Voltage		V _{GS(th)}	1.2	—	2.0 V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	@ T _J = +25°C @ T _J = +125°C	R _{DS (ON)}	—	3.5 3.0	6 5 Ω	V _{GS} = 5.0V, I _D = 0.115A V _{GS} = 10V, I _D = 0.115A
Forward Transconductance		g _{FS}	80	—	— mS	V _{DS} = 10V, I _D = 0.115A
DYNAMIC CHARACTERISTICS						
Input Capacitance		C _{iSS}	—	23	— pF	V _{DS} = 25V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance		C _{oSS}	—	3.4	— pF	
Reverse Transfer Capacitance		C _{rSS}	—	1.4	— pF	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time		t _{D(ON)}	—	10	— ns	V _{DD} = 30V, I _D = 0.115A, R _L = 150Ω, V _{GEN} = 10V, R _{GEN} = 25Ω
Turn-Off Delay Time		t _{D(OFF)}	—	33	— ns	

- 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.

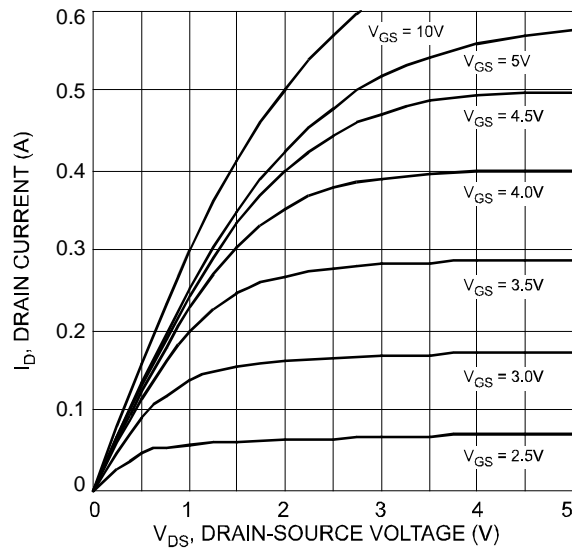


Fig. 1 Typical Output Characteristic

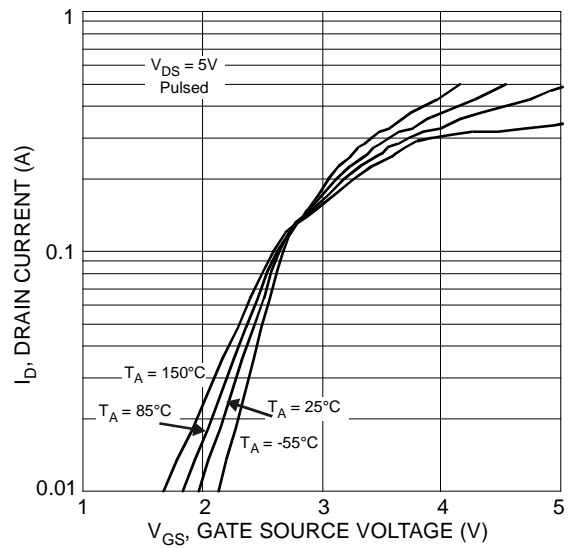


Fig. 2 Typical Transfer Characteristics

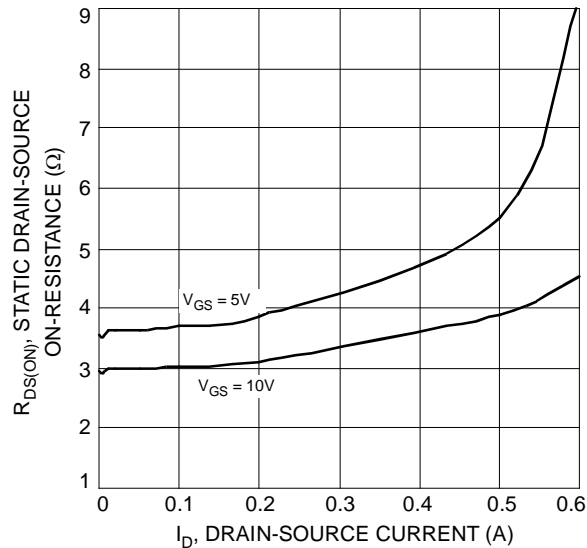


Fig. 3 On-Resistance vs. Drain Current & Gate Voltage

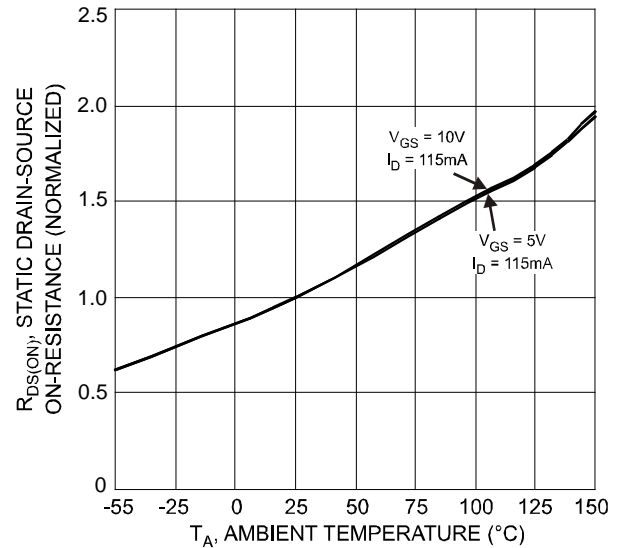


Fig. 4 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

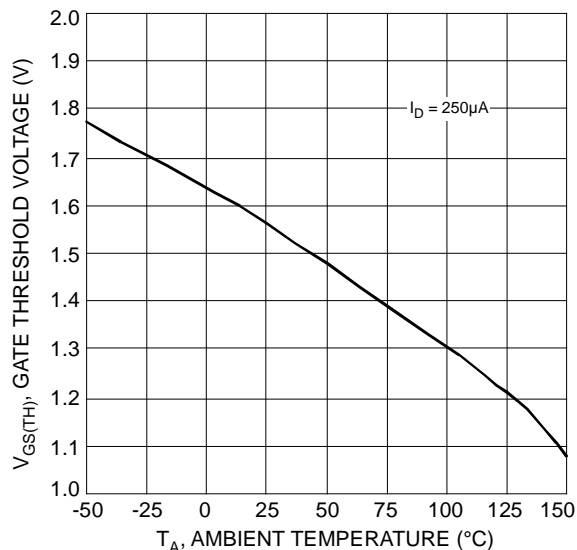


Fig. 5 Gate Threshold Variation vs. Ambient Temperature

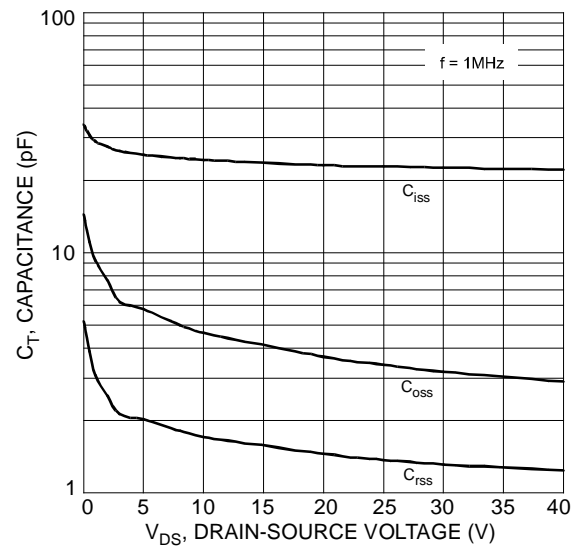


Fig. 6 Typical Total Capacitance

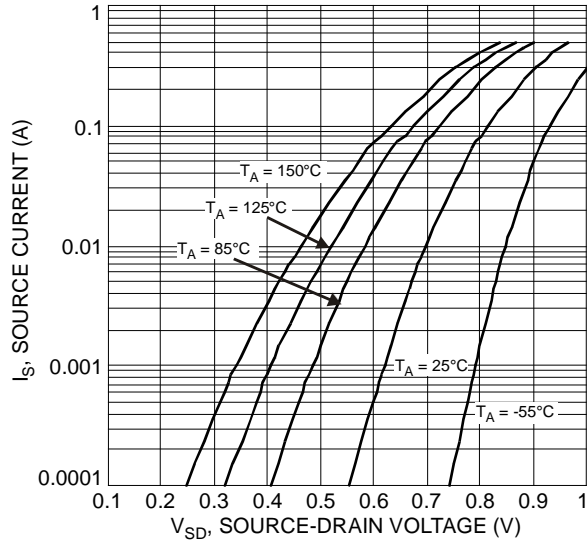


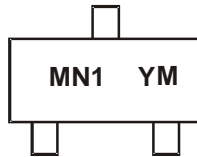
Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

Ordering Information (Note 4)

Part Number	Case	Packaging
DMN66D0LT-7	SOT-523	3000/Tape & Reel

Note: 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



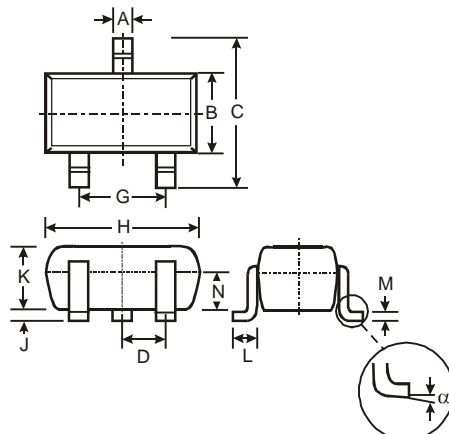
MN1 = Product Type Marking Code
YM = Date Code Marking
Y = Year ex: V = 2008
M = Month ex: 9 = September

Date Code Key

Year	2008	2009	2010	2011	2012	2013	2014	2015
Code	V	W	X	Y	Z	A	B	C

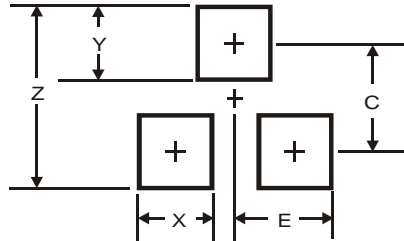
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



SOT-523			
Dim	Min	Max	Typ
A	0.15	0.30	0.22
B	0.75	0.85	0.80
C	1.45	1.75	1.60
D	—	—	0.50
G	0.90	1.10	1.00
H	1.50	1.70	1.60
J	0.00	0.10	0.05
K	0.60	0.80	0.75
L	0.10	0.30	0.22
M	0.10	0.20	0.12
N	0.45	0.65	0.50
α	0°	8°	—
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	1.8
X	0.4
Y	0.51
C	1.3
E	0.7

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2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

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