

Features

- Low On-Resistance
 - 60 mΩ @ V_{GS} = 4.5V
 - 80 mΩ @ V_{GS} = 2.5V
 - 130 mΩ @ V_{GS} = 1.5V
- Very Low Gate Threshold Voltage
- Low Input Capacitance
- ESD Protected Gate
- Fast Switching Speed
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

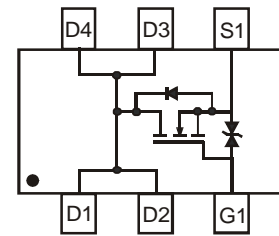
- Case: SOT26
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish — Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.015 grams (approximate)



ESD PROTECTED



Top View

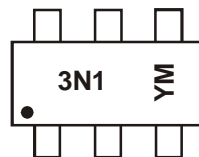

 Top View
Internal Schematic

Ordering Information (Note 3)

Part Number	Qualification	Case	Packaging
DMN3115UDM-7	Commercial	SOT26	3000/Tape & Reel
DMN3115UDMQ-7	Automotive	SOT26	3000/Tape & Reel

- Notes:
1. No purposefully added lead.
 2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
 3. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



3N1 = Marking Code
 YM = Date Code Marking
 Y = Year (ex: U = 2007)
 M = Month (ex: 9 = September)

Date Code Key

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015			
Code	U	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°C unless otherwise specified

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V _{DSS}	30	V
Gate-Source Voltage	V _{GSS}	±8	V
Drain Current (Note 4)	I _D	3.2	A
Pulsed Drain Current (Note 4)	I _{DM}	12.8	A

Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 4)	P _D	900	mW
Thermal Resistance, Junction to Ambient	R _{θJA}	139	°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 5)						
Drain-Source Breakdown Voltage	BV _{DSS}	30	—	—	V	V _{GS} = 0V, I _D = 100μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1	μA	V _{DS} = 30V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±5	μA	V _{GS} = ±8V, V _{DS} = 0V
ON CHARACTERISTICS (Note 5)						
Gate Threshold Voltage	V _{GS(th)}	0.5	—	1.0	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	40	60	mΩ	V _{GS} = 4.5V, I _D = 6A
			50	80		V _{GS} = 2.5V, I _D = 2A
			76	130		V _{GS} = 1.5V, I _D = 1.0A
Forward Transfer Admittance	Y _{fs}	—	8	—	S	V _{DS} = 10V, I _D = 6A
Diode Forward Voltage (Note 5)	V _{SD}	—	0.7	1.1	V	V _{GS} = 0V, I _S = 2A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	—	476	—	pF	V _{DS} = 15V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	77	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	59	—	pF	

- Notes: 4. Device mounted on FR-4 PCB, minimum recommended pad layout on 2oz. Copper pads.
5. Short duration pulse test used to minimize self-heating effect.

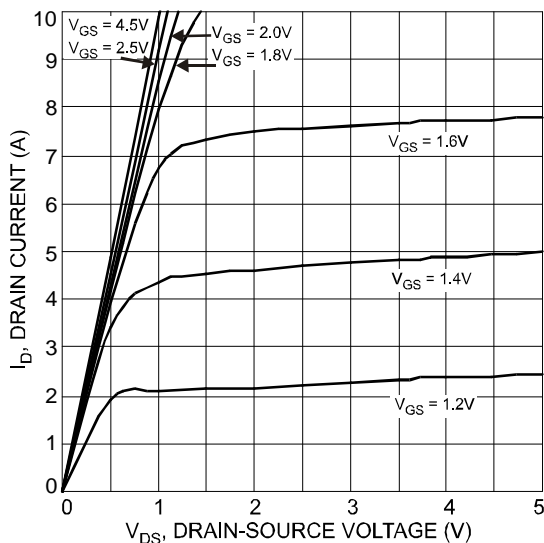


Fig.1 Typical Output Characteristic

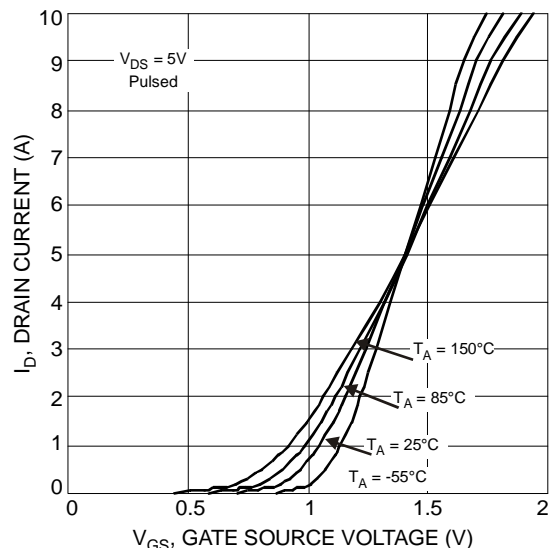


Fig. 2 Typical Transfer Characteristics

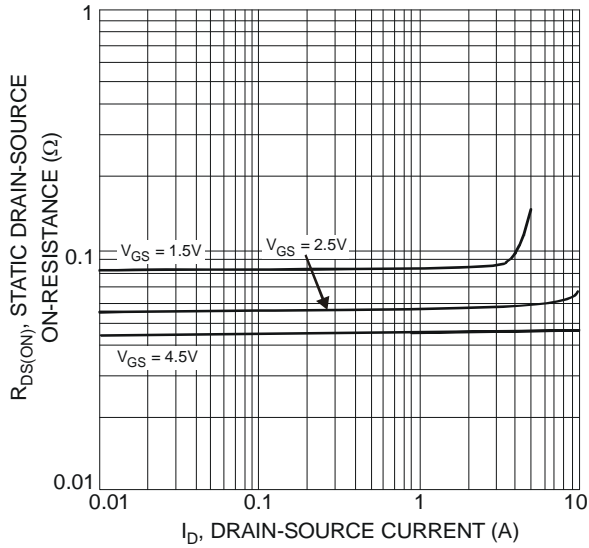


Fig. 3 On-Resistance vs. Drain Current & Gate Voltage

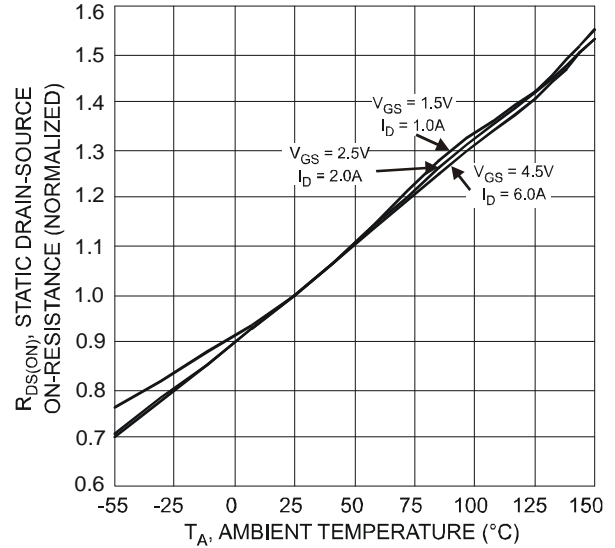


Fig. 4 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

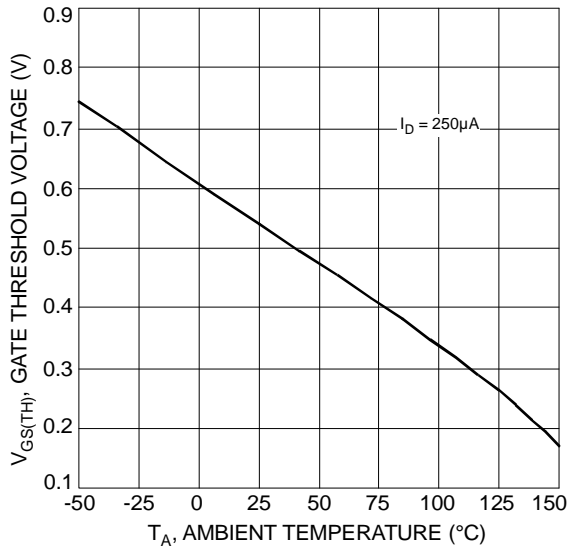


Fig. 5 Gate Threshold Variation vs. Ambient Temperature

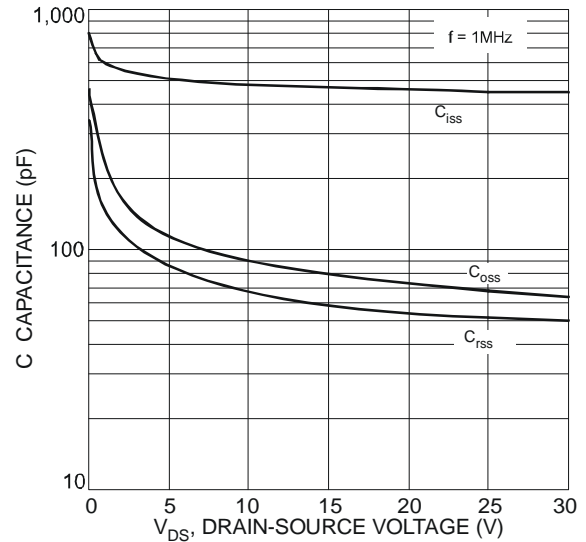


Fig. 6 Typical Total Capacitance

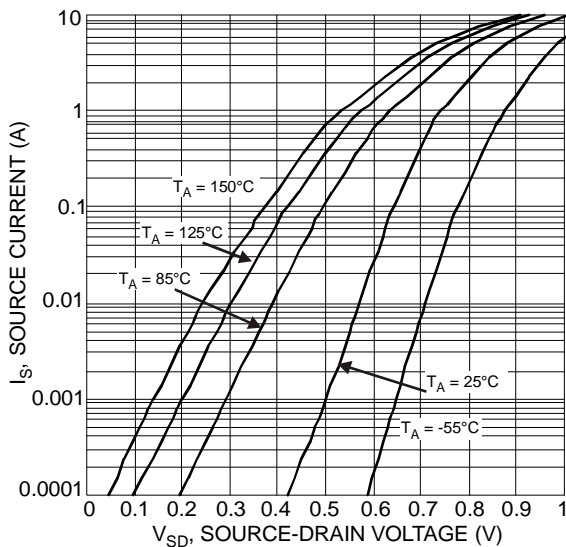
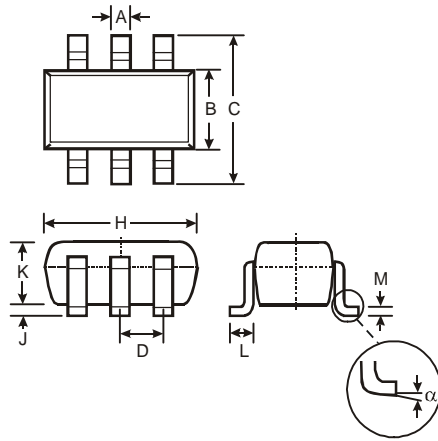


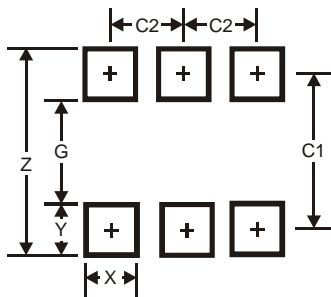
Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

Package Outline Dimensions



SOT26			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
α	0°	8°	—
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

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