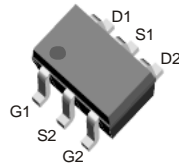


Features

- Low On-Resistance
 - 55 mΩ @ $V_{GS} = 4.5V$
 - 70 mΩ @ $V_{GS} = 2.5V$
 - 90 mΩ @ $V_{GS} = 1.8V$
 - 130 mΩ @ $V_{GS} = 1.5V$
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- ESD Protected Gate
- Lead Free By Design/RoHS Compliant (Note 2)**
- "Green" Device (Note 3)**
- Qualified to AEC-Q101 Standard for High Reliability**

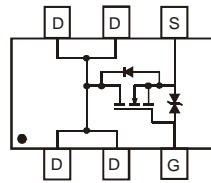


ESD PROTECTED



TOP VIEW

SOT-26



TOP VIEW

Internal Schematic

Mechanical Data

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: See Diagram
- Terminals: Finish — Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.015 grams (approximate)

Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V_{DSS}	20	V
Gate-Source Voltage	V_{GSS}	± 8	V
Drain Current (Note 1)	I_D	3.3	A
Pulsed Drain Current (Note 1)	I_{DM}	13	A

Thermal Characteristics @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 1)	P_D	900	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	139	$^\circ C/W$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$

Electrical Characteristics @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 4)						
Drain-Source Breakdown Voltage	BV_{DSS}	20	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1	μA	$V_{DS} = 20V, V_{GS} = 0V$
Gate-Source Leakage	I_{GSS}	—	—	± 1	μA	$V_{GS} = \pm 8V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 4)						
Gate Threshold Voltage	$V_{GS(th)}$	0.6	—	1.0	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	32	55	mΩ	$V_{GS} = 4.5V, I_D = 6A$
			43	70		$V_{GS} = 2.5V, I_D = 4.0A$
			56	90		$V_{GS} = 1.8V, I_D = 1.5A$
			80	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 4)	V_{SD}	—	0.7	1.1	V	$V_{GS} = 0V, I_S = 2A$
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	—	555	—	pF	$V_{DS} = 10V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	C_{oss}	—	112	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	84	—	pF	

- Notes:
- Device mounted on FR-4 PCB, or minimum recommended pad layout with 2oz. copper pads.
 - No purposefully added lead.
 - Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 - Short duration pulse test used to minimize self-heating effect.

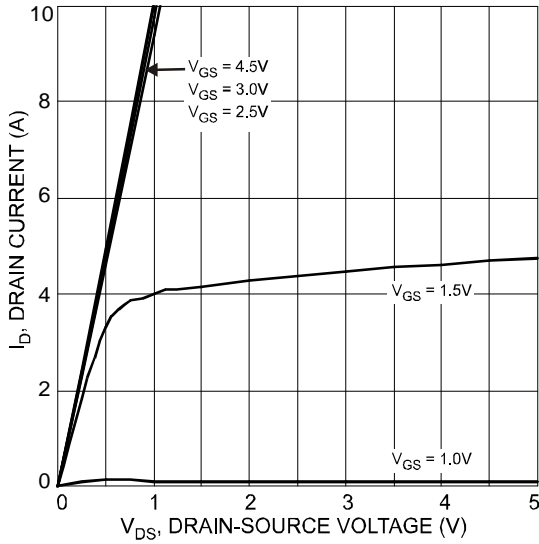


Fig. 1 Typical Output Characteristic

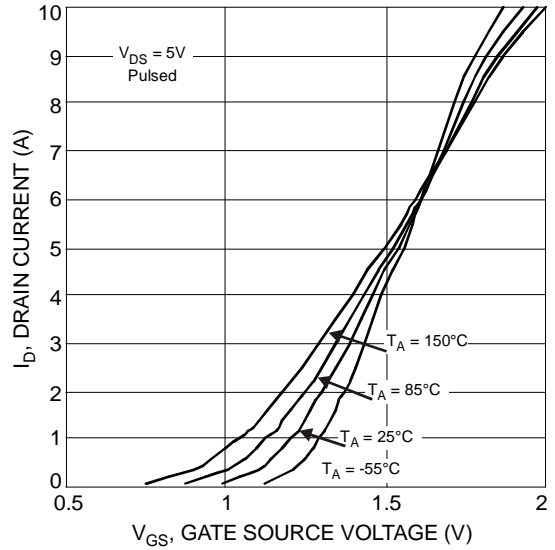


Fig. 2 Typical Transfer Characteristics

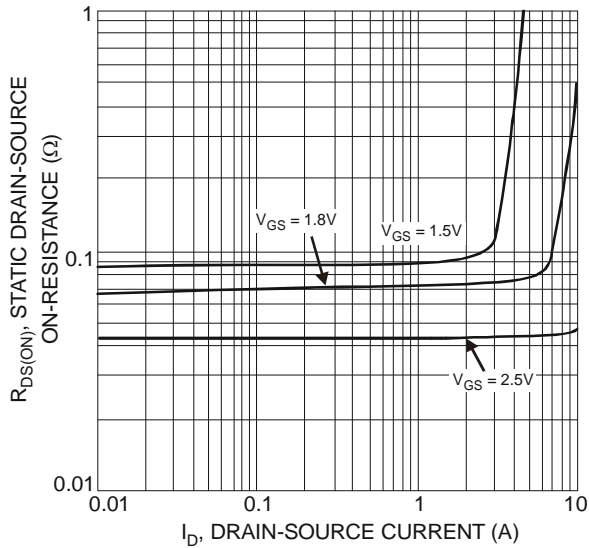


Fig. 3 On-Resistance vs. Drain Current & Gate Voltage

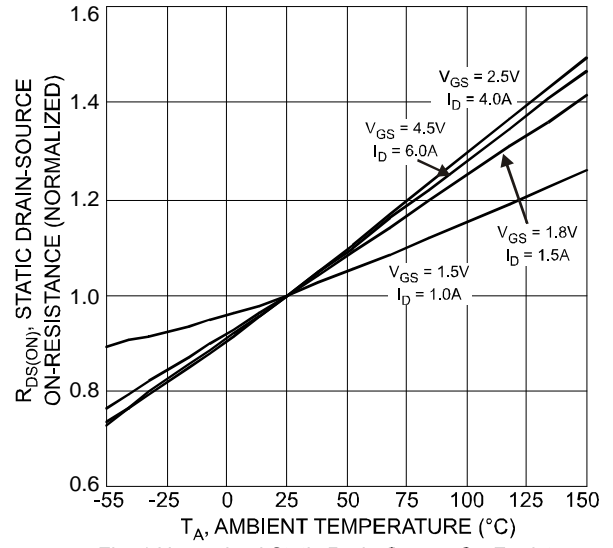


Fig. 4 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

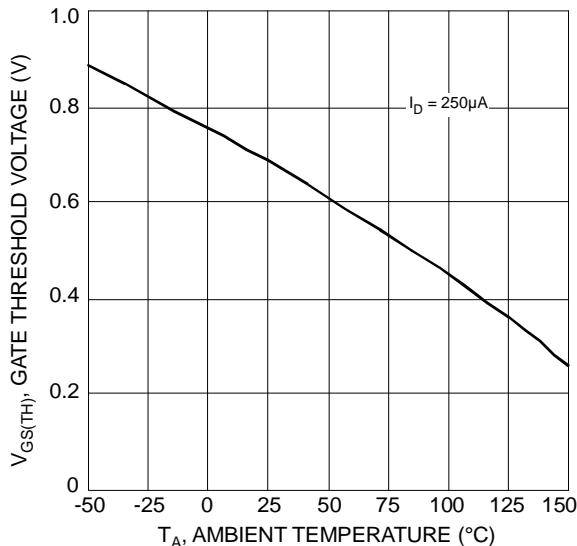


Fig. 5 Gate Threshold Variation vs. Ambient Temperature

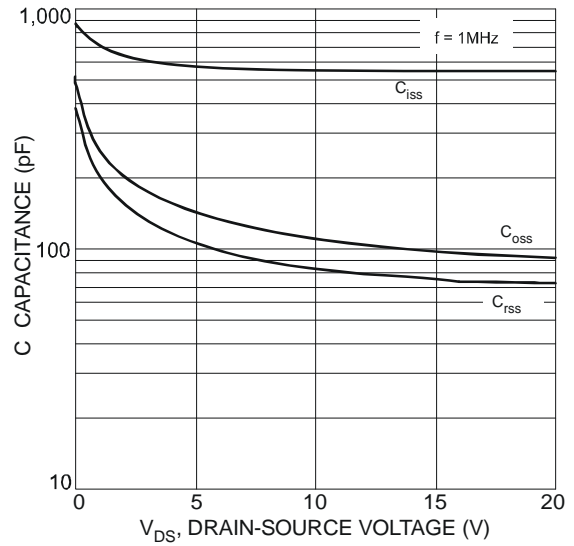


Fig. 6 Typical Total Capacitance

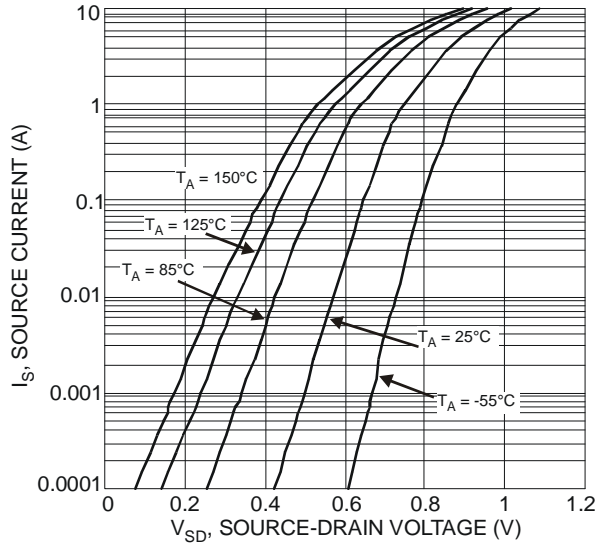


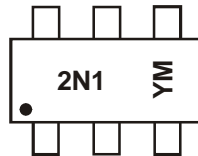
Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

Ordering Information (Note 5)

Part Number	Case	Packaging
DMN2100UDM-7	SOT-26	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



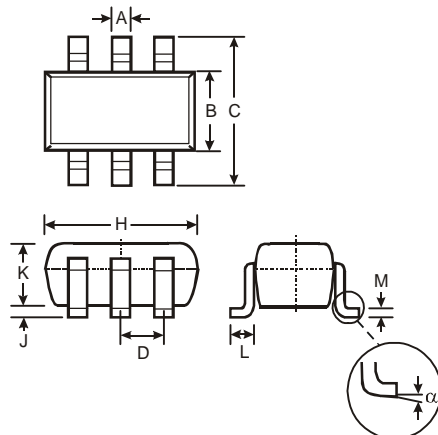
2N1 = Marking Code
 YM = Date Code Marking
 Y = Year (ex: U = 2007)
 M = Month (ex: 9 = September)

Date Code Key

Year	2007	2008	2009	2010	2011	2012
Code	U	V	W	X	Y	Z

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

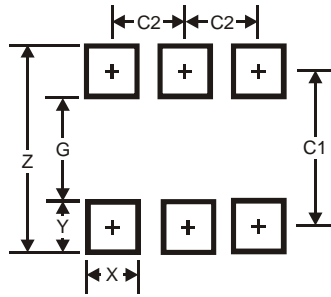
Package Outline Dimensions



SOT-26			
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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