

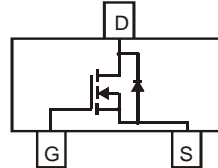
Features

- Low On-Resistance
 - 150 mΩ @V_{GS} = 4.5V
 - 200 mΩ @V_{GS} = 2.5V
 - 240 mΩ @V_{GS} = 1.8V
 - 300 mΩ @V_{GS} = 1.5V
- Ultra Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 2, 3 and 5)**
- **Qualified to AEC-Q101 Standards for High Reliability**



TOP VIEW

SOT-23



TOP VIEW
Internal Schematic

Mechanical Data

- Case: SOT-23
- 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: 0.008 grams (approximate)

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}	±12	V
Drain Current (Note 1)	I _D	2.0	A
Pulsed Drain Current (Note 1)	I _{DM}	8	A

Thermal Characteristics

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 1)	P _D	600	mW
Thermal Resistance, Junction to Ambient	R _{θJA}	208	°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 4)						
Drain-Source Breakdown Voltage	BV _{DSS}	30	37	—	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}	—	—	±10	μA	V _{GS} = ±12V, V _{DS} = 0V
ON CHARACTERISTICS (Note 4)						
Gate Threshold Voltage	V _{GS(th)}	0.5	—	1	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	100	150	mΩ	V _{GS} = 4.5V, I _D = 4.5A
			140	200		V _{GS} = 2.5V, I _D = 3.5A
			185	250		V _{GS} = 1.8V, I _D = 1.5A
			240	300		V _{GS} = 1.5V, I _D = 0.5A
			—	—		—
Forward Transfer Admittance	Y _{fs}	—	5	—	S	V _{DS} = 5V, I _D = 2.4A
Diode Forward Voltage (Note 4)	V _{SD}	—	0.8	1.1	V	V _{GS} = 0V, I = 0.5A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	—	193	—	pF	V _{DS} = 10V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	35	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	23	—	pF	
Turn-On Delay Time	t _{d(on)}	—	7	—	ns	V _{DD} = 10V, R _L = 10Ω I _D = 1A, V _{GEN} = 4.5V, R _G = 6Ω
Rise Time	t _r	—	24	—		
Turn-Off Delay Time	t _{d(off)}	—	24	—		
Fall Time	t _f	—	12	—		

- Notes:
1. Device mounted on FR-4 PCB.
 2. No purposefully added lead. Halogen and Antimony Free.
 3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 4. Short duration pulse test used to minimize self-heating effect.
 5. Product manufactured with Green Molding Compound and does not contain Halogens or Sb₂O₃ Fire Retardants.

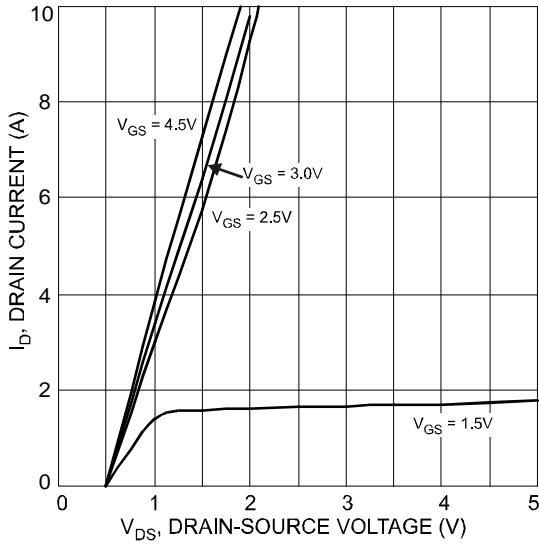


Fig. 1 Typical Output Characteristic

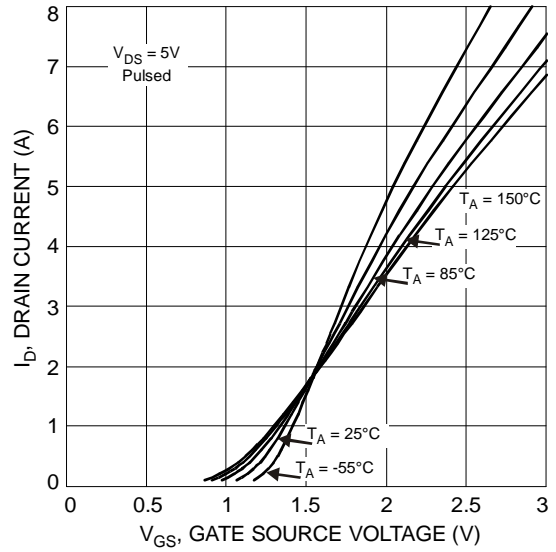


Fig. 2 Typical Transfer Characteristics

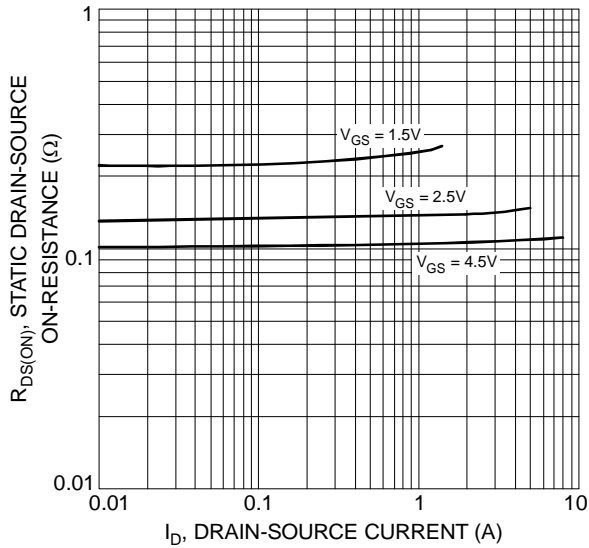


Fig. 3 On-Resistance vs. Drain Current & Gate Voltage

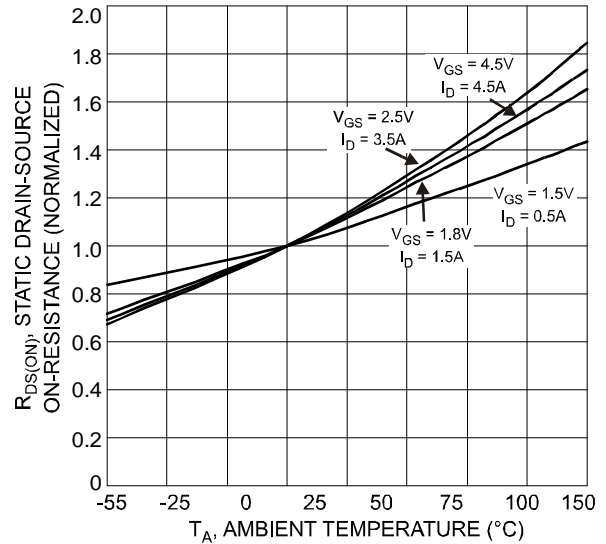


Fig. 4 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

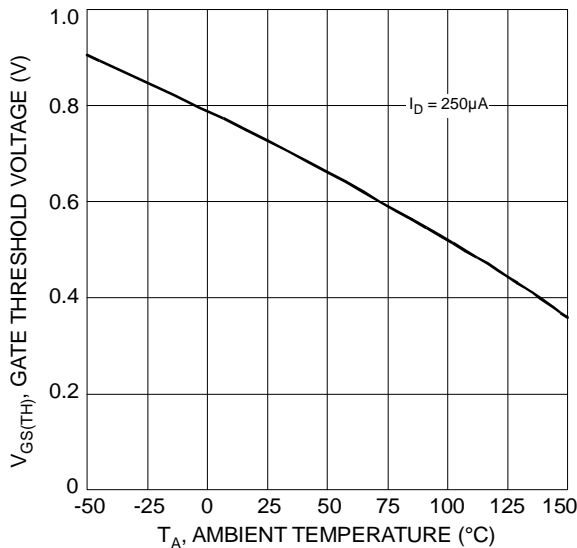


Fig. 5 Gate Threshold Variation vs. Ambient Temperature

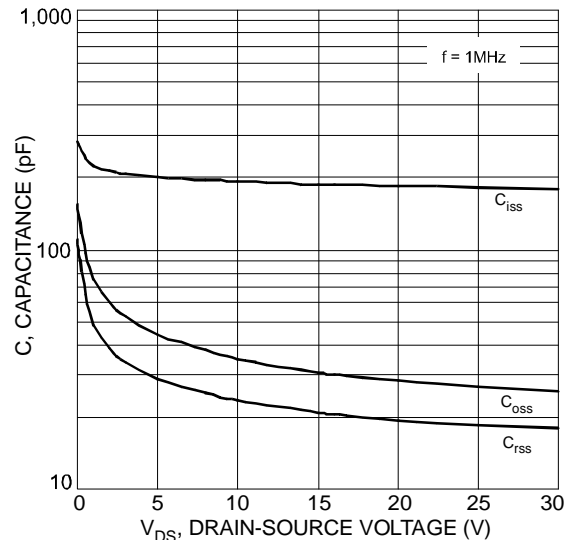


Fig. 6 Typical Total Capacitance

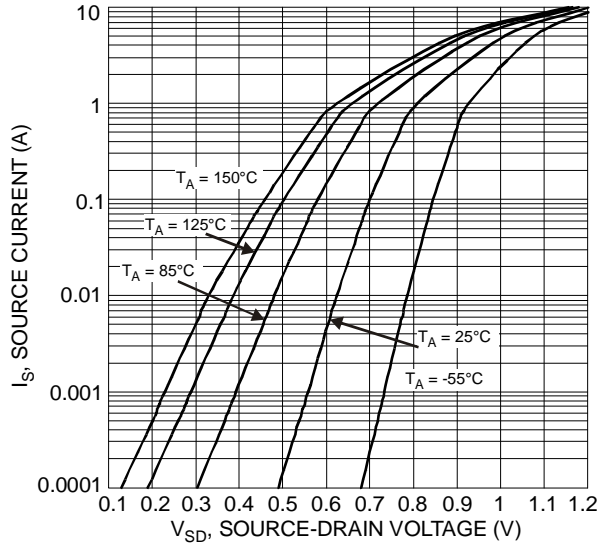


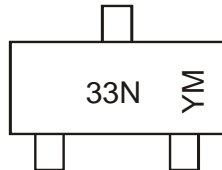
Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

Ordering Information (Note 6)

Part Number	Case	Packaging
DMN3300U-7	SOT-23	3000/Tape & Reel

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



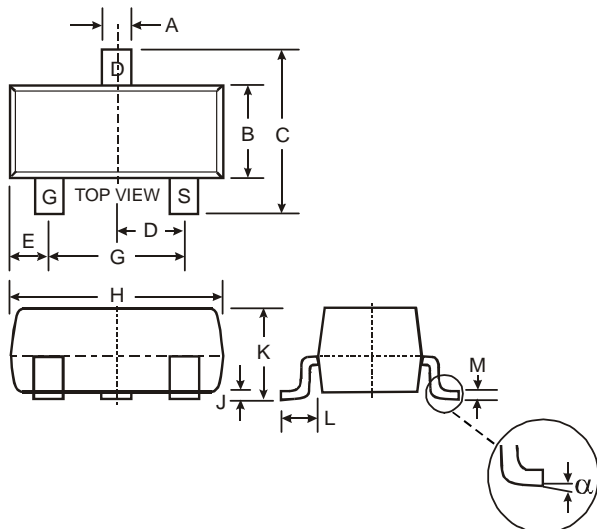
33N = Marking Code
 YM = Date Code Marking
 Y = Year ex: U = 2007
 M = Month ex: 9 = September

Date Code Key (If Applicable)

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

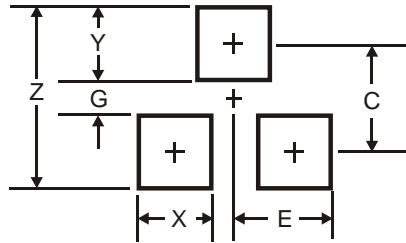
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.4
G	0.7
X	0.9
Y	1.4
C	2.0
E	0.9

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