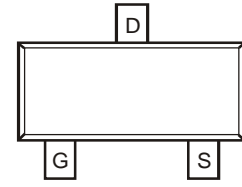
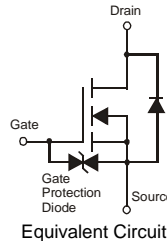


## Features

- Low On-Resistance
  - 90 mΩ @  $V_{GS} = 4.5V$
  - 110 mΩ @  $V_{GS} = 2.5V$
  - 200 mΩ @  $V_{GS} = 1.5V$
- Very Low Gate Threshold Voltage
- Low Input Capacitance
- ESD Protected Gate
- 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**



SOT-23



TOP VIEW

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

Characteristic	Symbol	Value	Units
Drain-Source Voltage	$V_{DSS}$	30	V
Gate-Source Voltage	$V_{GSS}$	$\pm 8$	V
Drain Current (Note 1)	$I_D$	2.2	A
Pulsed Drain Current (Note 1)	$I_{DM}$	9	A

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

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 1)	$P_D$	650	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	192	$^\circ C/W$
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
<b>OFF CHARACTERISTICS (Note 4)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	30	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	—	—	1	$\mu A$	$V_{DS} = 30V, V_{GS} = 0V$
Gate-Source Leakage	$I_{GSS}$	—	—	$\pm 5$	$\mu A$	$V_{GS} = \pm 8V, V_{DS} = 0V$
<b>ON CHARACTERISTICS (Note 4)</b>						
Gate Threshold Voltage	$V_{GS(th)}$	0.45	—	1.0	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	62	90	mΩ	$V_{GS} = 4.5V, I_D = 2.2A$
			70	110		$V_{GS} = 2.5V, I_D = 2A$
			150	200		$V_{GS} = 1.5V, I_D = 0.67A$
Forward Transfer Admittance	$ Y_{fs} $	—	5	—	S	$V_{DS} = 5V, I_D = 2.2A$
Diode Forward Voltage (Note 4)	$V_{SD}$	—	—	0.9	V	$V_{GS} = 0V, I_S = 1A$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{iss}$	—	290	—	pF	$V_{DS} = 10V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	$C_{oss}$	—	66	—	pF	
Reverse Transfer Capacitance	$C_{rss}$	—	35	—	pF	

- Notes:
- Device mounted on FR-4 PCB, on minimum recommended pad layout on 2oz. Copper pads.
  - No purposefully added lead. Halogen and Antimony Free.
  - Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  - Short duration pulse test used to minimize self-heating effect.
  - Product manufactured with Green Molding Compound and does not contain Halogens or  $Sb_2O_3$  Fire Retardants.

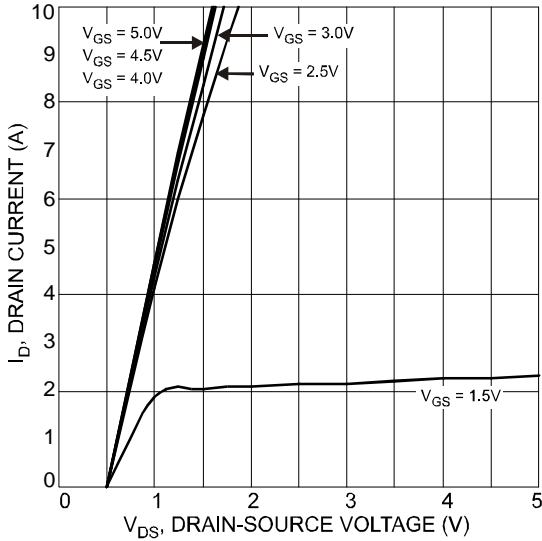


Fig. 1 Typical Output Characteristic

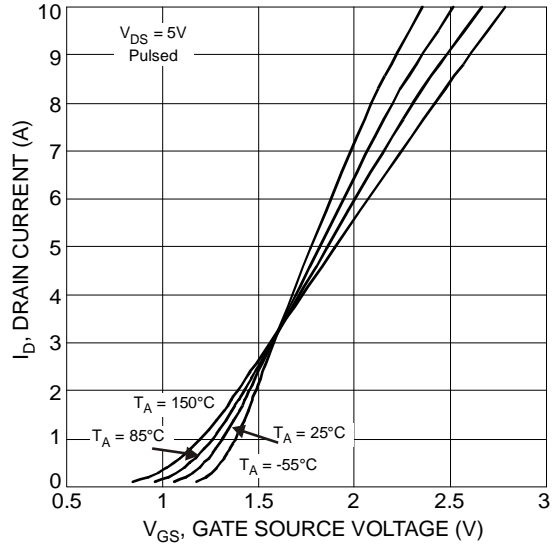


Fig. 2 Typical Transfer Characteristics

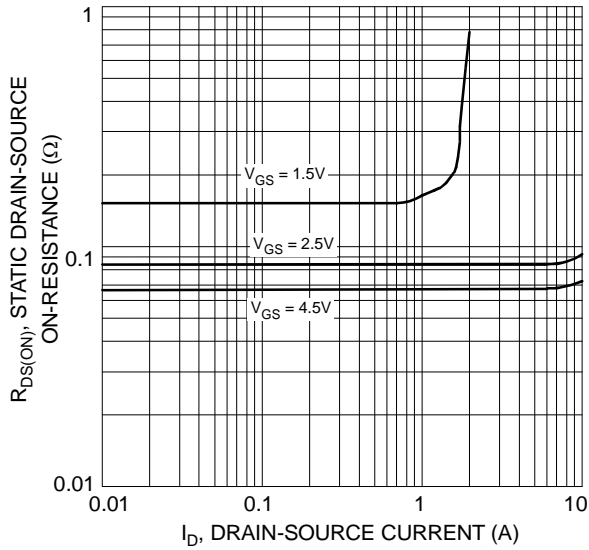


Fig. 3 On-Resistance vs. Drain Current & Gate Voltage

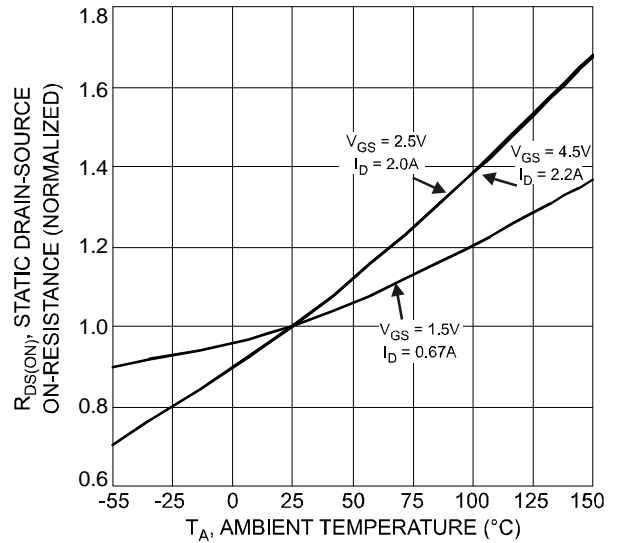


Fig. 4 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

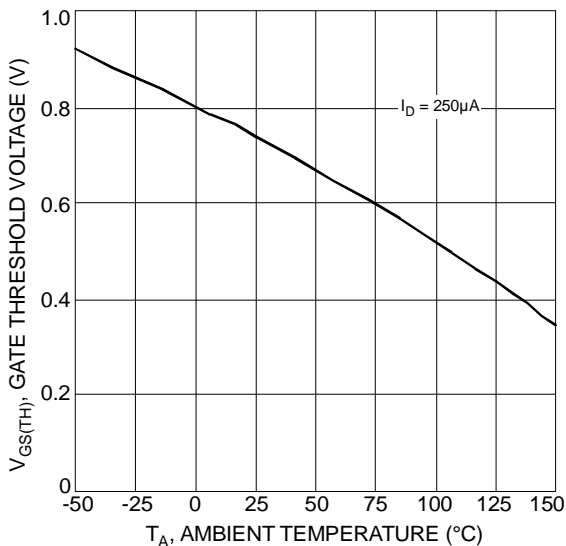


Fig. 5 Gate Threshold Variation vs. Ambient Temperature

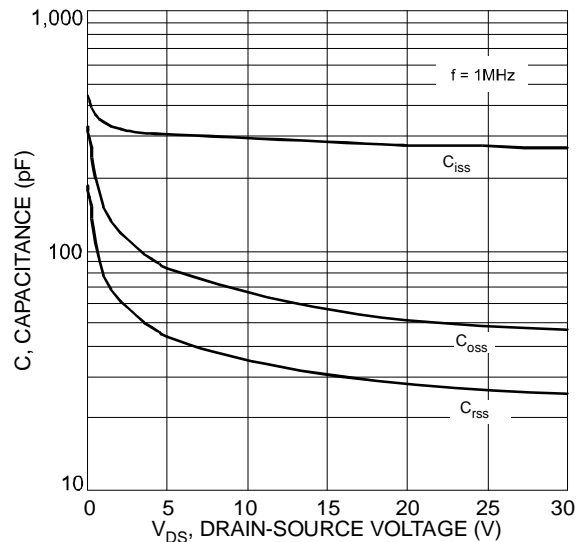


Fig. 6 Typical Total Capacitance

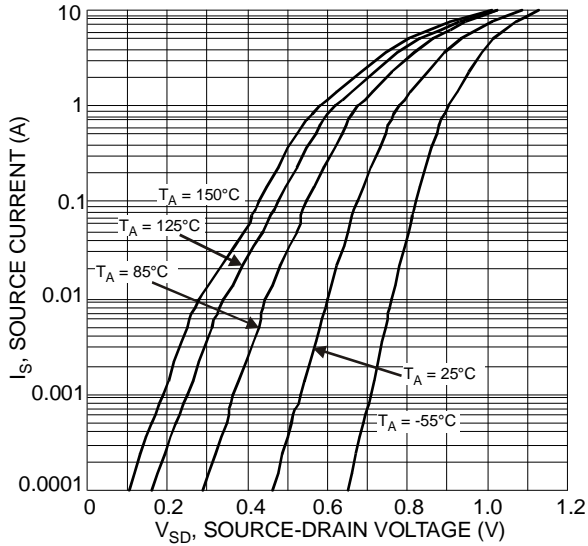


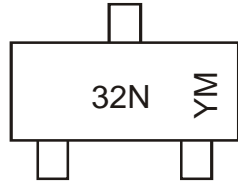
Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

**Ordering Information** (Note 6)

Part Number	Case	Packaging
DMN3200U-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**



32N = Marking Code  
 YM = Date Code Marking  
 Y = Year ex: U = 2007  
 M = Month ex: 9 = September

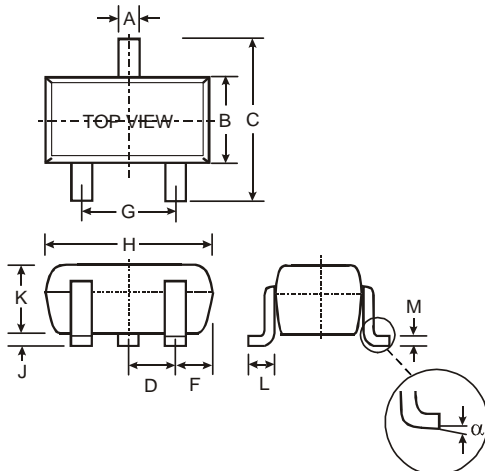
Date Code Key

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

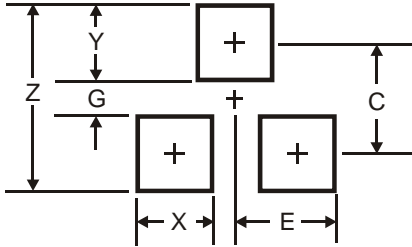
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

**Package Outline Dimensions**



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
F	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
$\alpha$	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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