

# DMN3200U N-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

UL Flammability Classification Rating 94V-0

Terminal Connections: See Diagram

Marking Information: See Page 3

Ordering Information: See Page 3

Weight: 0.008 grams (approximate)

Moisture Sensitivity: Level 1 per J-STD-020D

Terminals: Finish — Matte Tin annealed over Copper

leadframe. Solderable per MIL-STD-202, Method 208

Case Material: Molded Plastic, "Green" Molding Compound.

### **Features**

PRODUCT

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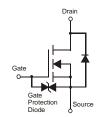
- Low On-Resistance
  - $90 \text{ m}\Omega @ V_{GS} = 4.5 \text{V}$
  - 110 m $\Omega$  @ V<sub>GS</sub> = 2.5V
  - $200 \text{ m}\Omega @ V_{GS} = 1.5V$
- Very Low Gate Threshold Voltage
- Low Input Capacitance
- **ESD** Protected Gate
- Fast Switching Speed
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 2, 3 and 5)
- Qualified to AEC-Q101 Standards for High Reliability





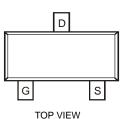
ESD PROTECTED TO 3kV

TOP VIEW



**Mechanical Data** 

Case: SOT-23



Equivalent Circuit

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

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V <sub>DSS</sub>	30	V
Gate-Source Voltage	V <sub>GSS</sub>	±8	V
Drain Current (Note 1)	ID	2.2	A
Pulsed Drain Current (Note 1)	I <sub>DM</sub>	9	A

SOT-23

### Thermal Characteristics @TA = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 1)	PD	650	mW
Thermal Resistance, Junction to Ambient	$R_{ heta JA}$	192	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

### Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 4)	Symbol	IVIIII	тур	IVIAN	Unit	Test condition
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	30	_	_	V	$V_{GS} = 0V, I_D = 250 \mu A$
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	_		1	μA	$V_{DS} = 30V, V_{GS} = 0V$
Gate-Source Leakage	I <sub>GSS</sub>			±5	μA	$V_{GS} = \pm 8V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 4)	·					·
Gate Threshold Voltage	V <sub>GS(th)</sub>	0.45	_	1.0	V	$V_{DS} = V_{GS}, I_D = 250 \mu A$
			62 70 150	90 110 200	mΩ	$V_{GS} = 4.5V, I_D = 2.2A$
Static Drain-Source On-Resistance	R <sub>DS (ON)</sub>					$V_{GS} = 2.5V, I_D = 2A$
						V <sub>GS</sub> = 1.5V, I <sub>D</sub> = 0.67A
Forward Transfer Admittance	Y <sub>fs</sub>	_	5		S	V <sub>DS</sub> =5V, I <sub>D</sub> = 2.2A
Diode Forward Voltage (Note 4)	V <sub>SD</sub>	_		0.9	V	$V_{GS} = 0V, I_{S} = 1A$
DYNAMIC CHARACTERISTICS			_	_	_	
Input Capacitance	Ciss	_	290	_	pF	
Output Capacitance	Coss		66		pF	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 0V f = 1.0MHz
Reverse Transfer Capacitance	C <sub>rss</sub>		35		pF	

Notes: 1. Device mounted on FR-4 PCB, on minimum recommended pad layout on 2oz. Copper pads.

2. No purposefully added lead. Halogen and Antimony Free.

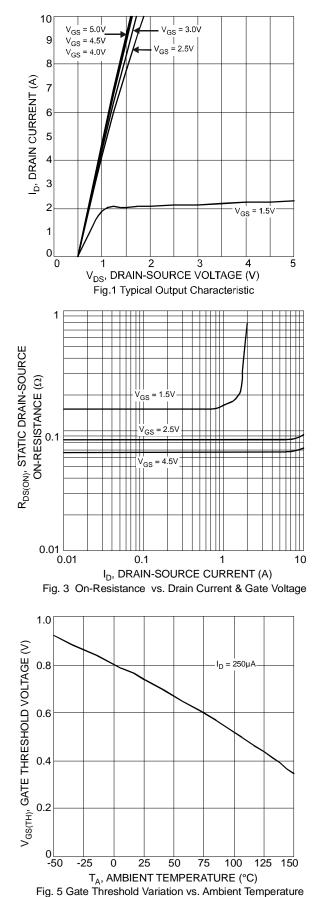
3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.

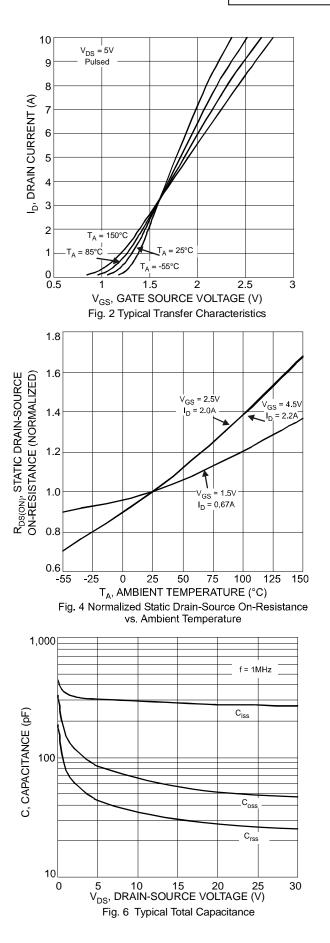
4. Short duration pulse test used to minimize self-heating effect.

5. Product manufactured with Green Molding Compound and does not contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.



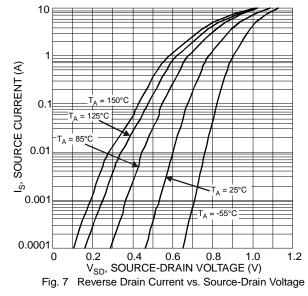
## DMN3200U







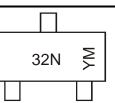




Ordering Information (Note 6)							
Part Number	Case	Packaging					
DMN3200U-7	SOT-23	3000/Tape & Reel					

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

### **Marking Information**

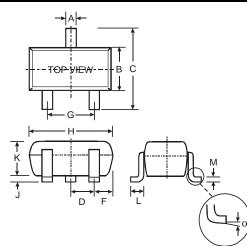


32N = Marking Code YM = Date Code Marking Y = Year ex: U = 2007 M = Month ex: 9 = September

Date Code Key

Year	20	07	20	08	20	09	20	10	20	11	20	12
Code	ι	J	١	/	V	V	)	X	Ŋ	(	Z	2
Month	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	Ν	D

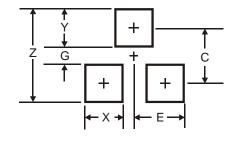
## **Package Outline Dimensions**



SOT-23					
Dim	Min	Max			
Α	0.37	0.51			
В	1.20	1.40			
С	2.30	2.50			
D	0.89	1.03			
F	0.45	0.60			
G	1.78	2.05			
Н	2.80	3.00			
J	0.013	0.10			
К	0.903	1.10			
L	0.45	0.61			
М	0.085	0.180			
α	0°	8°			
All Di	nensions	in mm			



## Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.4
G	0.7
Х	0.9
Y	1.4
С	2.0
E	0.9

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