

DMN3200U

N-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

NEW PRODUCT

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**

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
- Weight: 0.008 grams (approximate)



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}	± 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
OFF CHARACTERISTICS (Note 4)						
Drain-Source Breakdown Voltage	BV_{DSS}	30	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1	μA	$V_{DS} = 30V, V_{GS} = 0V$
Gate-Source Leakage	I_{GSS}	—	—	± 5	μA	$V_{GS} = \pm 8V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 4)						
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	$V_{GS} = 0V, I_S = 1A$
DYNAMIC CHARACTERISTICS						
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:
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. Short duration pulse test used to minimize self-heating effect.
 4. Product manufactured with Green Molding Compound and does not contain Halogens or Sb_2O_3 Fire Retardants.