DMN3112S

N-CHANNEL ENHANCEMENT MODE MOSFET

Features

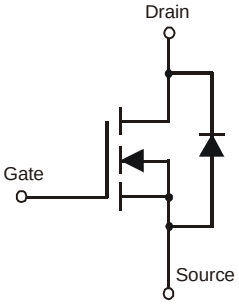
- Low On-Resistance:
  57mΩ @ V_{GS} = 10V
  112mΩ @ V_{GS} = 4.5V
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

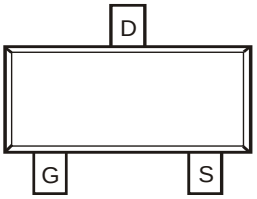
- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Weight: 0.008 grams (approximate)

SOT23

Top View



Equivalent Circuit



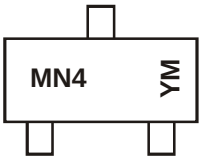
Top View
Pin Configuration

Ordering Information (Note 3)

Part Number	Qualification	Case	Packaging
DMN3112S-7	Commercial	SOT23	3000/Tape & Reel
DMN3112SQ-7	Automotive	SOT23	3000/Tape & Reel

Notes: 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead. Halogen and Antimony free.

Marking Information



MN4 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: V = 2008)
M = Month (ex: 9 = September)

Date Code Key

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	V	W	X	Y	Z	A	B	C	D	E

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

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Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Drain Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current (Note 4) T_A = 25°C T_A = 70°C	I_D	5.8 4.2	A
Drain Current (Note 4) Pulsed	I_{DM}	20	A
Body-Diode Continuous Current (Note 4)	I_S	2.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 4)	P_D	1.4	W
Thermal Resistance, Junction to Ambient @T_A = 25°C (Note 4)	$R_{\theta JA}$	90	°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 5)						
Drain-Source Breakdown Voltage	BV_{DSS}	30	—	—	V	V_{GS} = 0V, I_D = 250μA
Zero Gate Voltage Drain Current	I_{DSS}	—	—	800	nA	V_{DS} = 30V, V_{GS} = 0V
Gate-Body Leakage	I_{GSS}	—	—	±80 ±800	nA	V_{GS} = ±20V, V_{DS} = 0V V_{GS} = ±25V, V_{DS} = 0V
ON CHARACTERISTICS (Note 5)						
Gate Threshold Voltage	$V_{GS(th)}$	1.3	1.9	2.2	V	V_{DS} = V_{GS}, I_D = 250μA
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	— —	47 92	57 112	mΩ	V_{GS} = 10V, I_D = 5.8A V_{GS} = 4.5V, I_D = 4.2A
Forward Transconductance	$\|Y_{fs}\|$	—	4.7	—	S	V_{DS} = 5V, I_D = 4.2A
Source-Drain Diode Forward Voltage	V_{SD}	—	0.78	1.1	V	V_{GS} = 0V, I_S = 2.0A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	—	268	—	pF	V_{DS} = 5V, V_{GS} = 0V f = 1.0MHz
Output Capacitance	C_{oss}	—	73	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	50	—	pF	

Notes: 2. Device mounted on FR-4 PCB. t ≤5 sec.
3. Short duration pulse test used to minimize self-heating effect.

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