

**DMN3112S**

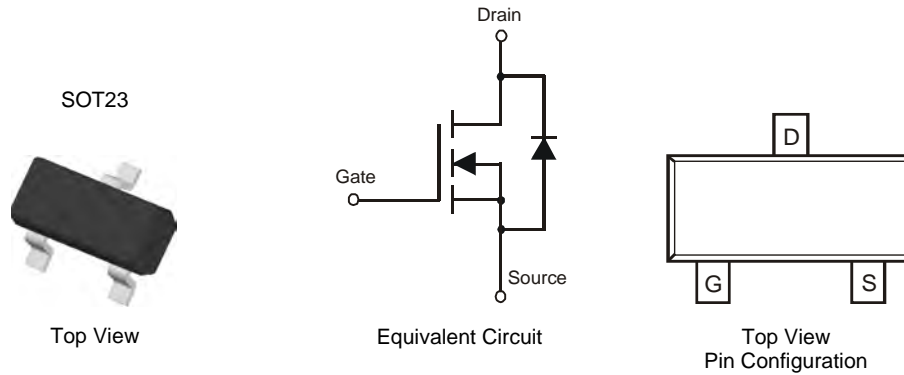
**N-CHANNEL ENHANCEMENT MODE MOSFET**

**Features**

- Low On-Resistance:  
57mΩ @ V<sub>GS</sub> = 10V  
112mΩ @ V<sub>GS</sub> = 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)

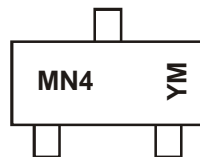


**Ordering Information** (Note 3)

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



## DMN3112S

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

Characteristic	Symbol	Value	Unit
Drain Source Voltage	$V_{DSS}$	30	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Drain Current (Note 4)	$I_D$	$T_A = 25^\circ\text{C}$	5.8
		$T_A = 70^\circ\text{C}$	4.2
Drain Current (Note 4)	Pulsed	$I_{DM}$	20
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 @ $T_A = 25^\circ\text{C}$ (Note 4)	$R_{\theta JA}$	90	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 5)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	30	—	—	V	$V_{GS} = 0V, I_D = 250\mu\text{A}$
Zero Gate Voltage Drain Current	$I_{DSS}$	—	—	800	nA	$V_{DS} = 30V, V_{GS} = 0V$
Gate-Body Leakage	$I_{GSS}$	—	—	$\pm 80$ $\pm 800$	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$ $V_{GS} = \pm 25V, V_{DS} = 0V$
<b>ON CHARACTERISTICS (Note 5)</b>						
Gate Threshold Voltage	$V_{GS(th)}$	1.3	1.9	2.2	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	47	57	m $\Omega$	$V_{GS} = 10V, I_D = 5.8A$
		—	92	112		$V_{GS} = 4.5V, I_D = 4.2A$
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	$V_{GS} = 0V, I_S = 2.0A$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{iss}$	—	268	—	pF	$V_{DS} = 5V, V_{GS} = 0V$ $f = 1.0\text{MHz}$
Output Capacitance	$C_{oss}$	—	73	—	pF	
Reverse Transfer Capacitance	$C_{rss}$	—	50	—	pF	

- Notes:
- Device mounted on FR-4 PCB.  $t \leq 5$  sec.
  - Short duration pulse test used to minimize self-heating effect.