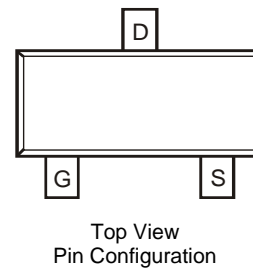
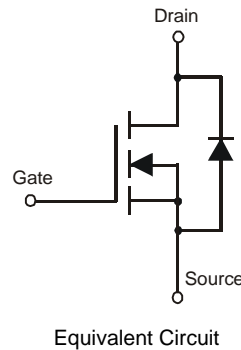


Features

- 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)

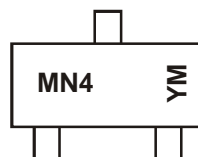


Ordering Information (Note 3)

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.
 2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
 3. For packaging details, go to our website at <http://www.diodes.com>.

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

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}	± 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	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 @ $T_A = 25^\circ\text{C}$ (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
OFF CHARACTERISTICS (Note 5)						
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}	—	—	± 80 ± 800	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$ $V_{GS} = \pm 25V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 5)						
Gate Threshold Voltage	$V_{GS(th)}$	1.3	1.9	2.2	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	47	57	$m\Omega$	$V_{GS} = 10V, I_D = 5.8A$ $V_{GS} = 4.5V, I_D = 4.2A$
		—	92	112		
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	$V_{DS} = 5V, V_{GS} = 0V$ $f = 1.0\text{MHz}$
Output Capacitance	C_{oss}	—	73	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	50	—	pF	

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

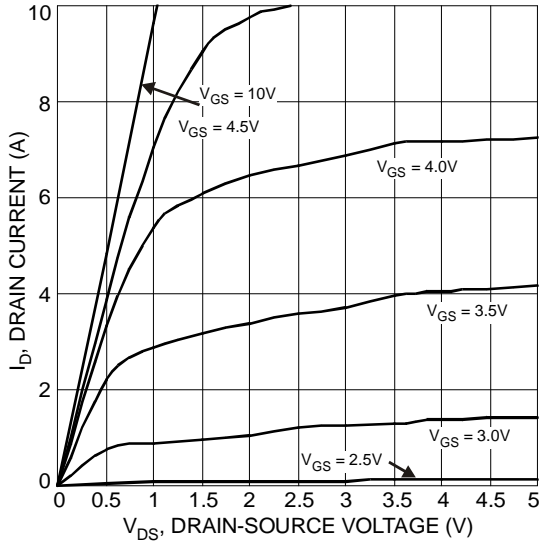


Fig. 1 Typical Output Characteristic

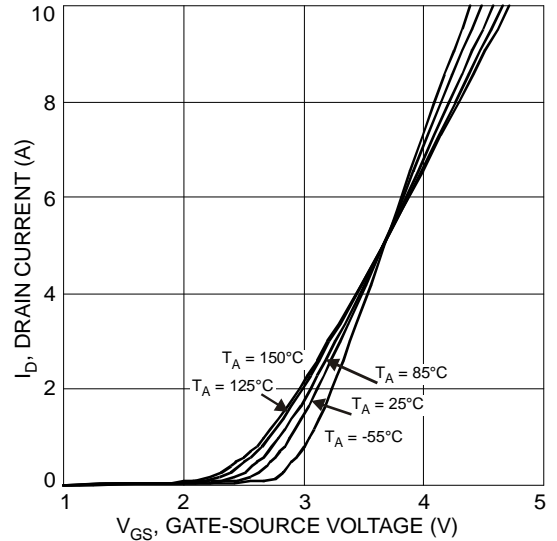


Fig. 2 Typical Transfer Characteristic

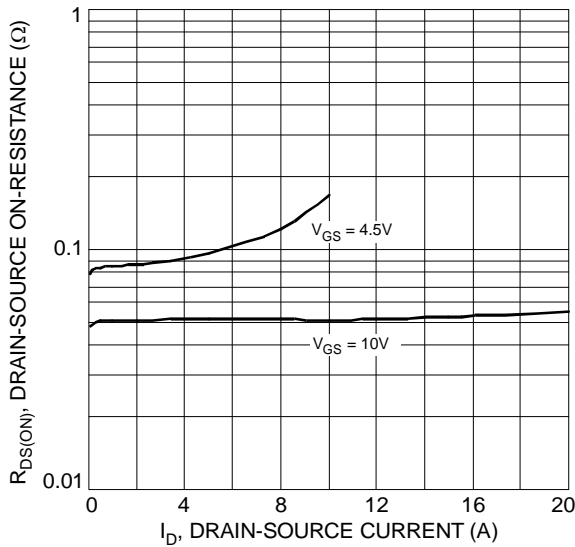


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

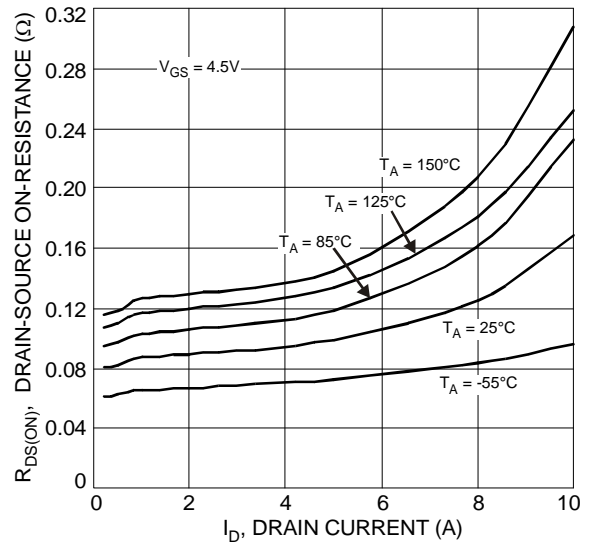


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

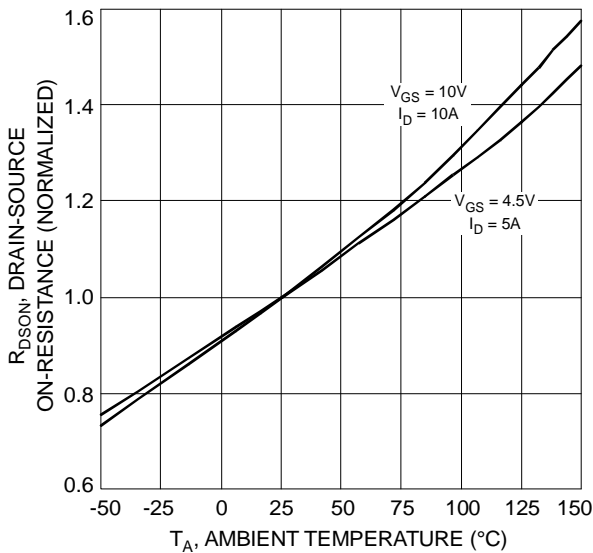


Fig. 5 On-Resistance Variation with Temperature

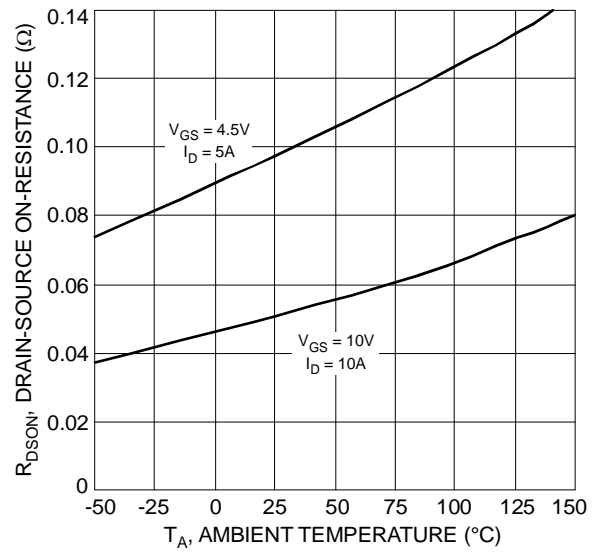


Fig. 6 On-Resistance Variation with Temperature

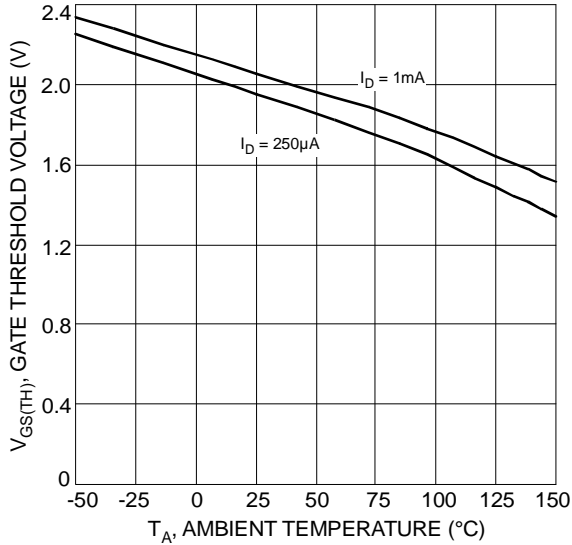


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

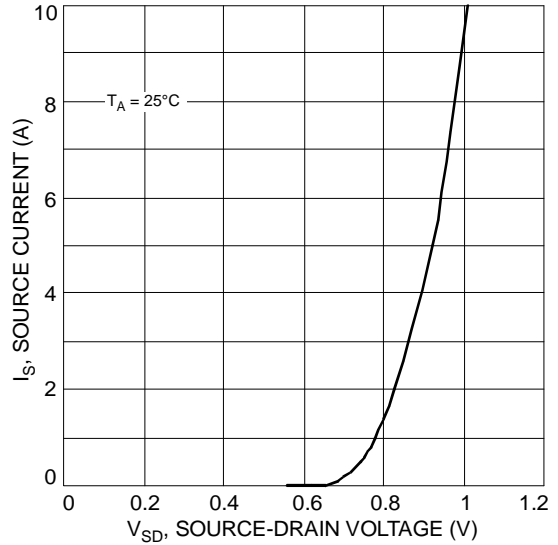


Fig. 8 Diode Forward Voltage vs. Current

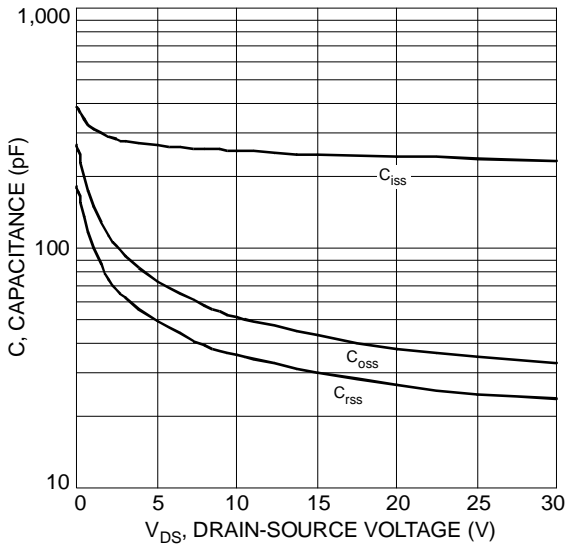


Fig. 9 Typical Total Capacitance

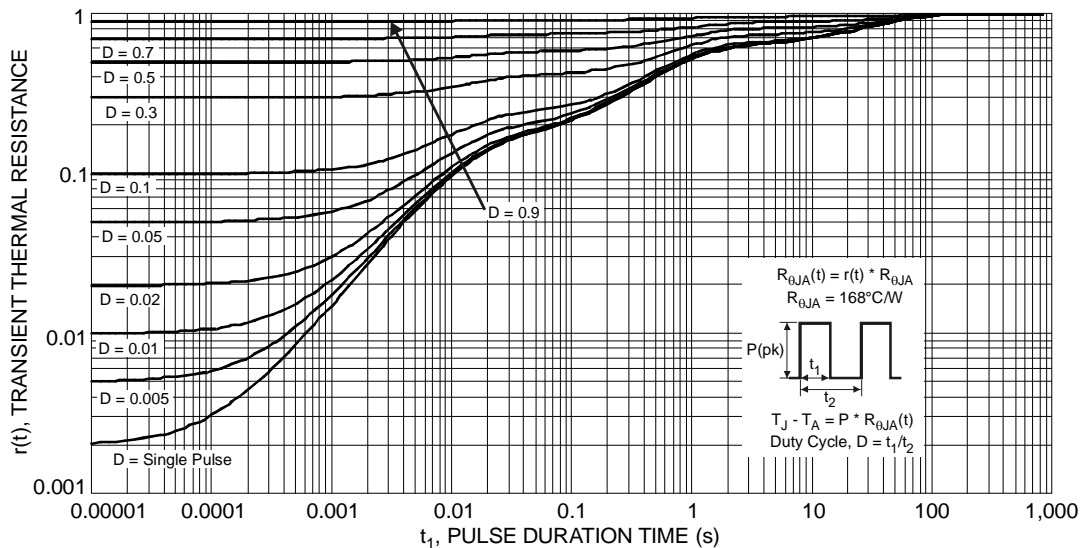
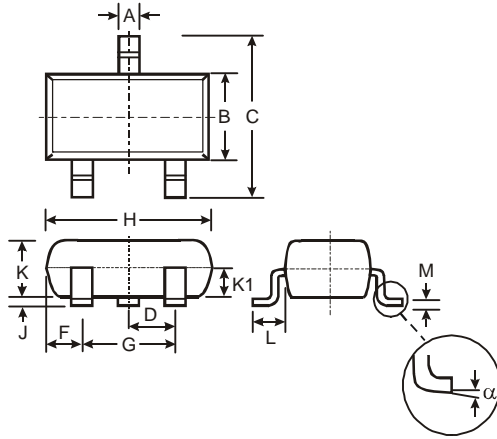


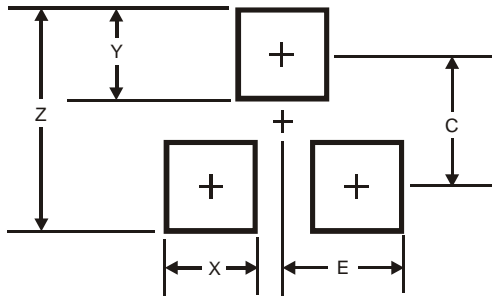
Fig. 10 Transient Thermal Response

Package Outline Dimensions



SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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