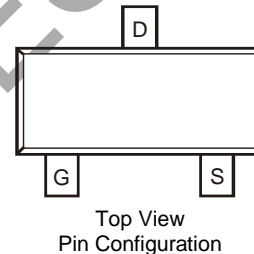
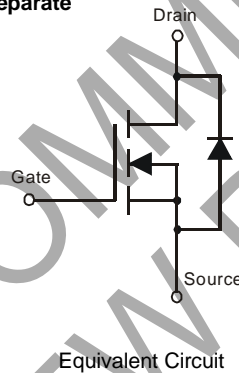
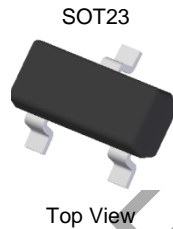


Features

- 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
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>
- An Automotive-Compliant Part is Available Under Separate Datasheet ([DMN3112SQ](#))

Mechanical Data

- Package: SOT23
- Package 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 ⁽³⁾
- Terminal Connections: See Diagram
- Weight: 0.008 grams (Approximate)

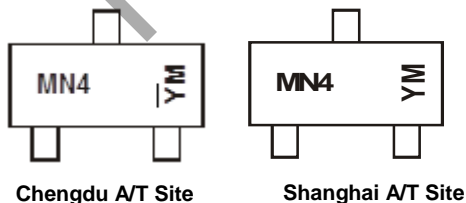


Ordering Information (Note 4)

Part Number	Qualification	Package	Packing	
			Qty.	Carrier
DMN3112S-7	Standard	SOT23	3000pcs	Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



MN4 = Product Type Marking Code
 YM = Date Code Marking for SAT (Shanghai Assembly/ Test Site)
 Y or Y' = Date Code Marking for CAT (Chengdu Assembly/ Test Site)
 Y or Y' = Year (ex: 1 = 2021)
 M = Month (ex: 9 = September)

Date Code Key

Year	2007	...	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Code	U	...	I	J	K	L	M	N	O	P	R	S

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°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 5)	T _A = +25°C	I _D	5.8	A
	T _A = +70°C	I _D	4.2	A
Drain Current (Note 5)	Pulsed	I _{DM}	20	A
Body-Diode Continuous Current (Note 5)		I _S	2.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P _D	1.4	W
Thermal Resistance, Junction to Ambient @T _A = +25°C (Note 5)	R _{θJA}	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 6)						
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 6)						
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	57	mΩ	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
DYNAMIC CHARACTERISTICS (Note 7)						
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: 5. Device mounted on FR-4 PCB. t ≤ 5 sec.
6. Short duration pulse test used to minimize self-heating effect.
7. Guaranteed by design. Not subject to production testing.

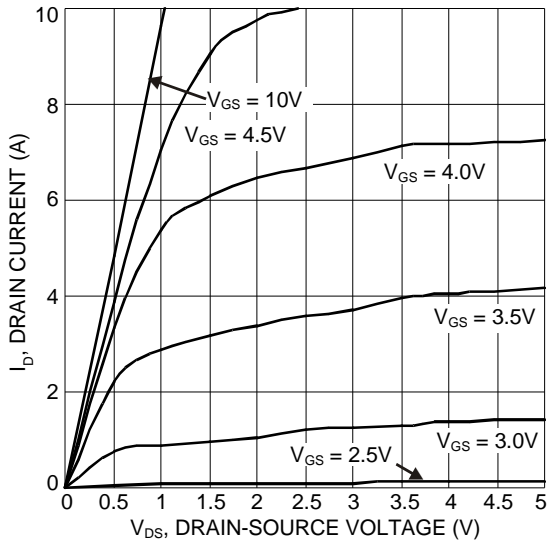


Figure 1. Typical Output Characteristic

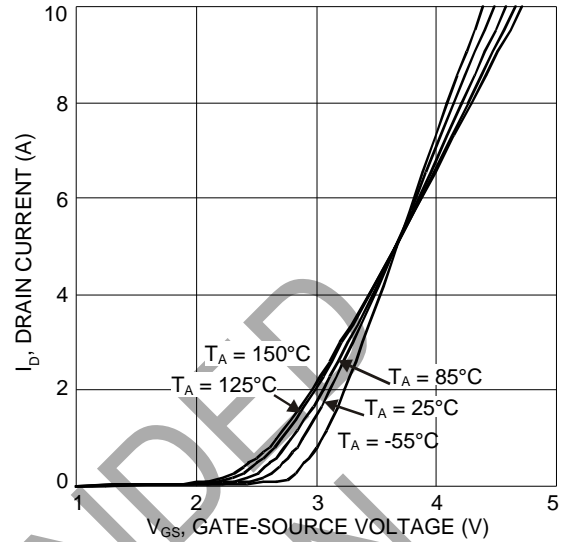


Figure 2. Typical Transfer Characteristic

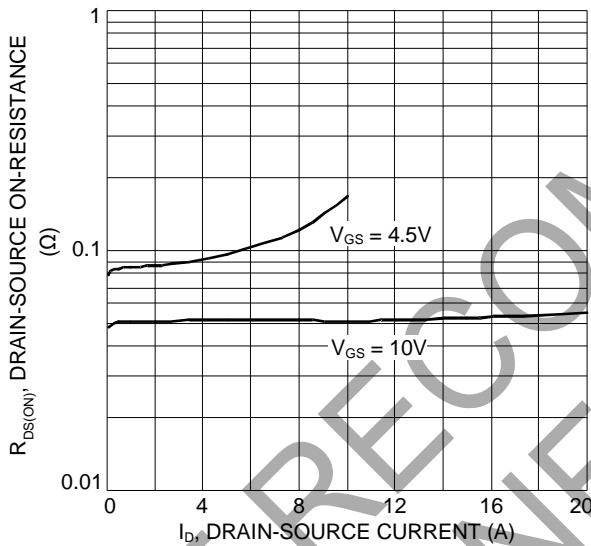


Figure 3. Typical On-Resistance vs. Drain Current and Gate Voltage

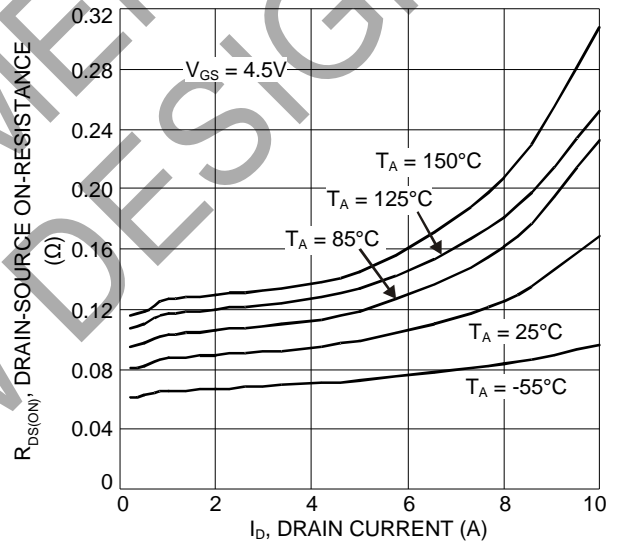


Figure 4. Typical On-Resistance vs. Drain Current and Temperature

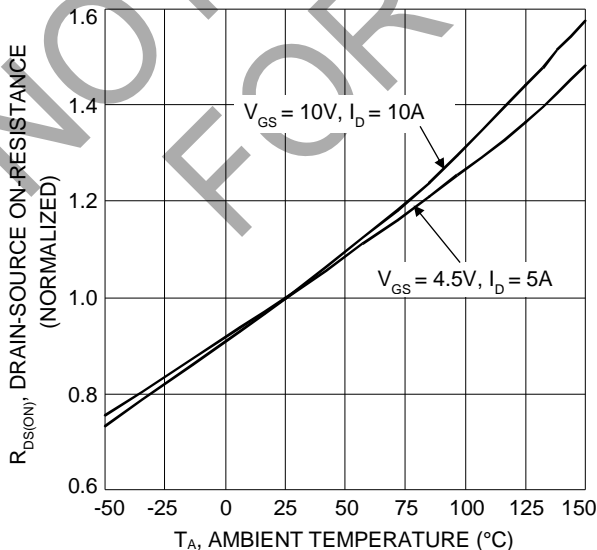


Figure 5. On-Resistance Variation with Temperature

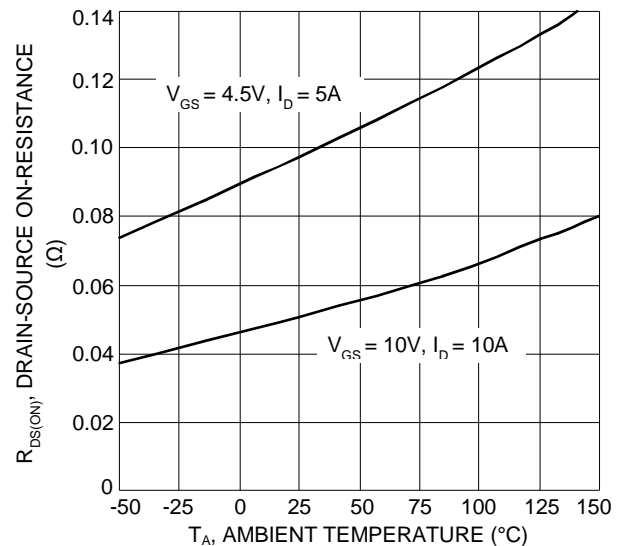


Figure 6. On-Resistance Variation with Temperature

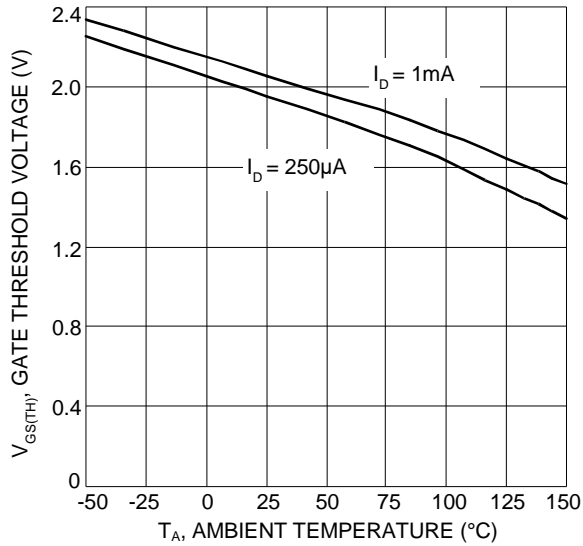


Figure 7. Gate Threshold Variation vs. Ambient Temperature

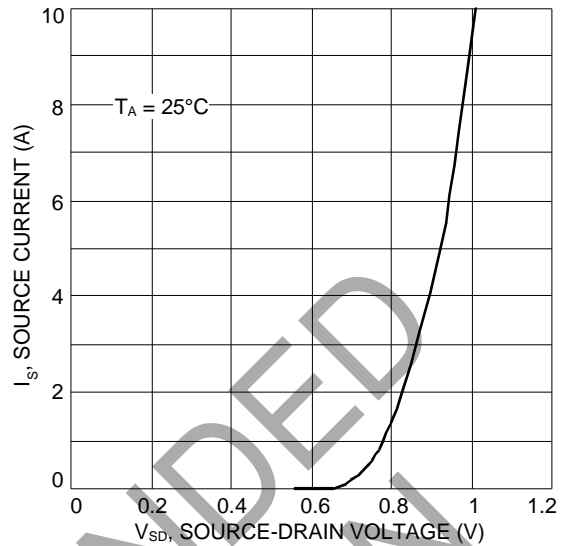


Figure 8. Diode Forward Voltage vs. Current

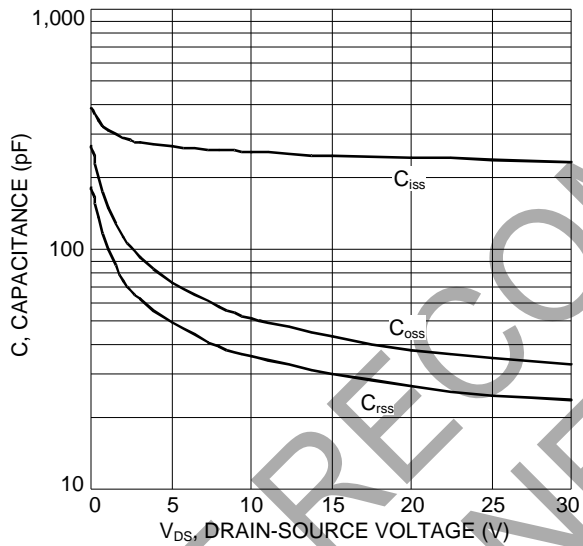


Figure 9. Typical Total Capacitance

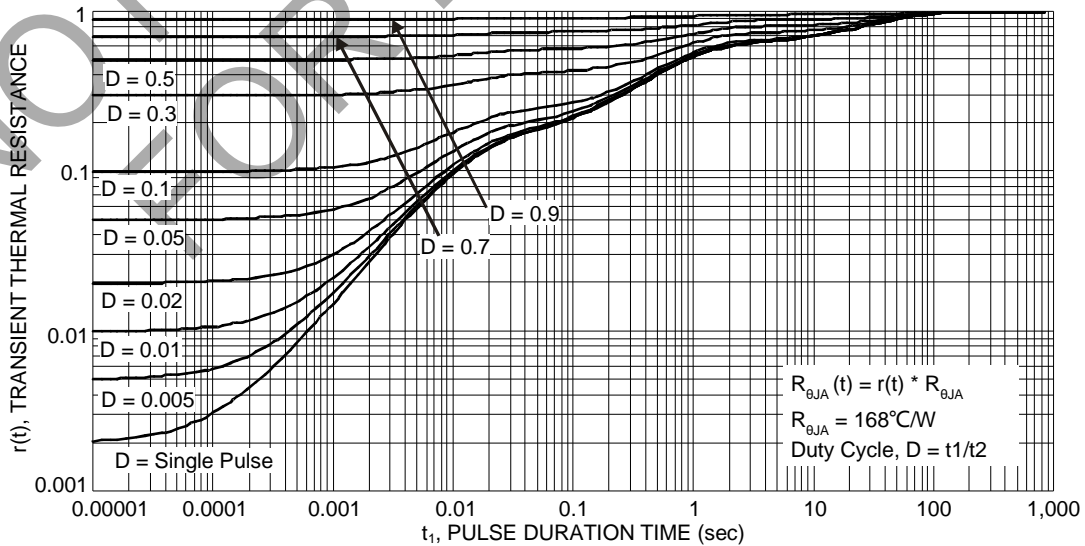
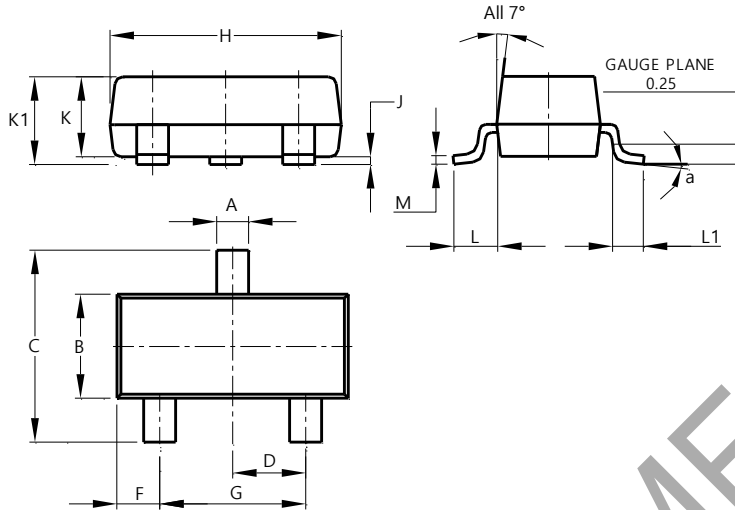


Figure 10. Transient Thermal Resistance

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT23

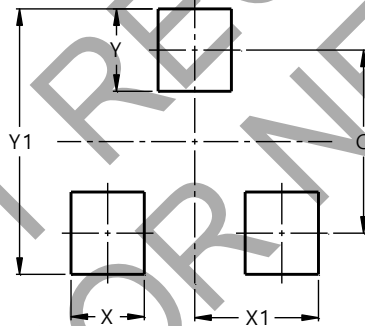


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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