

Features

- Low On-Resistance:
 - $R_{DS(ON)} < 32m\Omega @ V_{GS} = 10V$
 - $R_{DS(ON)} < 42m\Omega @ V_{GS} = 4.5V$
 - $R_{DS(ON)} < 64m\Omega @ V_{GS} = 2.5V$
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- **Lead Free By Design/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

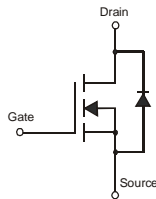
Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking Information: See Page 4
- Ordering Information: See Page 4
- Weight: 0.008 grams (approximate)

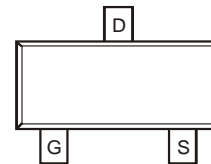
SOT-23



TOP VIEW



Equivalent Circuit



TOP VIEW

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}	± 12	V
Drain Current (Note 1)	I_D	$T_A = 25^\circ\text{C}$	5.4
		$T_A = 70^\circ\text{C}$	4.6
Drain Current (Note 1)	I_{DM}	19	A
Body-Diode Continuous Current (Note 1)	I_S	2.0	A

Thermal Characteristics

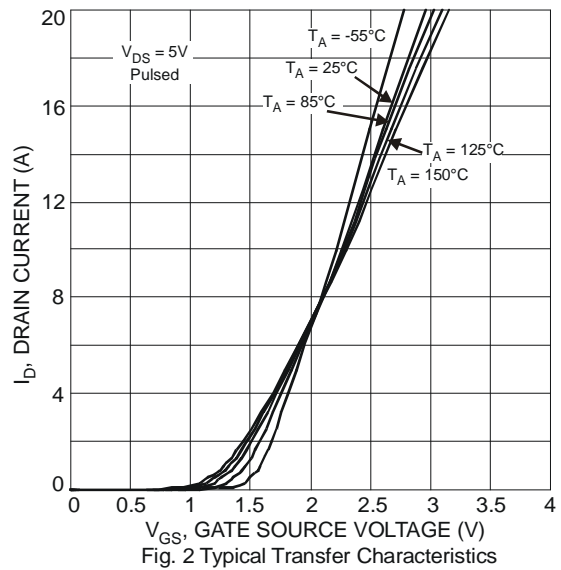
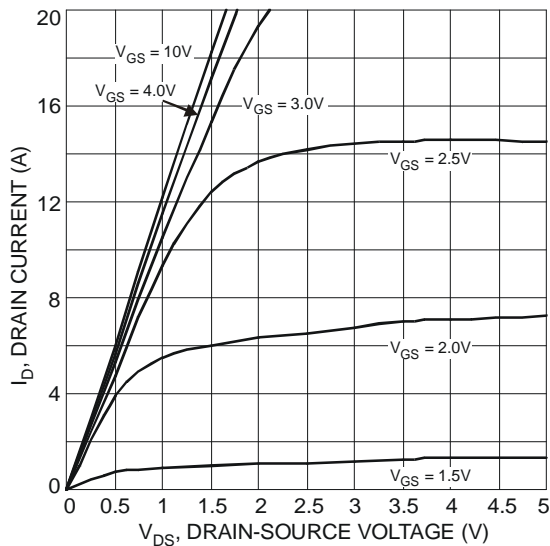
Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 1)	P_D	1.4	W
Thermal Resistance, Junction to Ambient @ $T_A = 25^\circ\text{C}$ (Note 1)	$R_{\theta JA}$	90	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
1. Device mounted on FR-4 PCB. $t \leq 5$ sec.
 2. No purposefully added lead.
 3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.

Electrical Characteristics @T_A = 25°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 = 250μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1	μA	V _{DS} = 30V, V _{GS} = 0V
Gate-Body Leakage	I _{GSS}	—	—	±80 ±800	nA	V _{GS} = ±12V, V _{DS} = 0V V _{GS} = ±19V, V _{DS} = 0V
ON CHARACTERISTICS (Note 4)						
Gate Threshold Voltage	V _{GS(th)}	0.62	0.9	1.2	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	26 33 52 78	32 42 64 100	mΩ	V _{GS} = 10V, I _D = 5.8A V _{GS} = 4.5V, I _D = 5.0A V _{GS} = 2.5V, I _D = 3.8A V _{GS} = 2.0V, I _D = 2.0A
Forward Transconductance	Y _{fs}	—	8	—	S	V _{DS} = 5V, I _D = 3.1A
Source-Drain Diode Forward Voltage	V _{SD}	—	0.75	1.2	V	V _{GS} = 0V, I _S = 2.0A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	—	555	—	pF	V _{DS} = 5V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	109	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	82	—	pF	
Total Gate Charge	Q _g	—	6.3	—	nC	V _{GS} = 4.5V, V _{DS} = 15V, I _D = 5.8A
Gate-Source Charge	Q _{gs}	—	1.3	—		
Gate-Drain Charge	Q _{gd}	—	1.7	—		

Notes: 4. Short duration pulse test used to minimize self-heating effect.



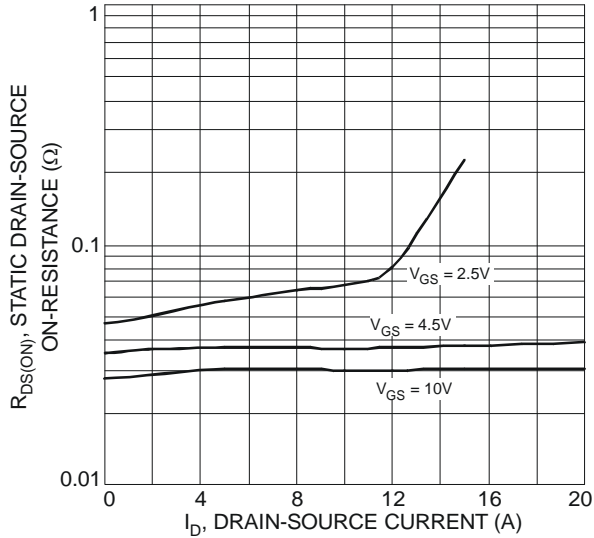


Fig 3 On-Resistance vs. Drain Current & Gate Voltage

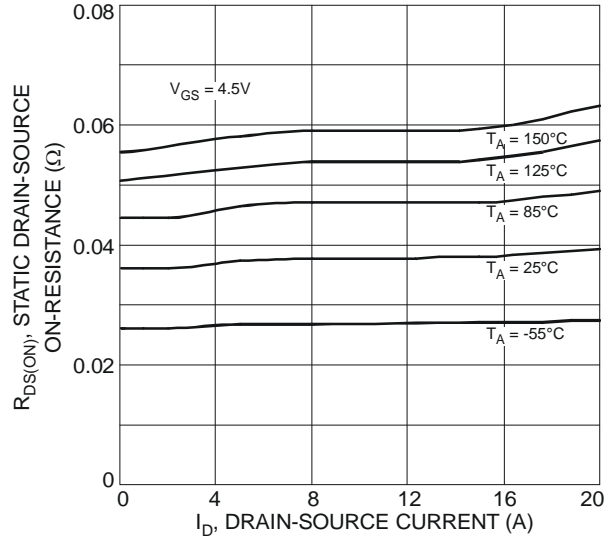


Fig. 4 On-Resistance vs. Drain Current & Temperature

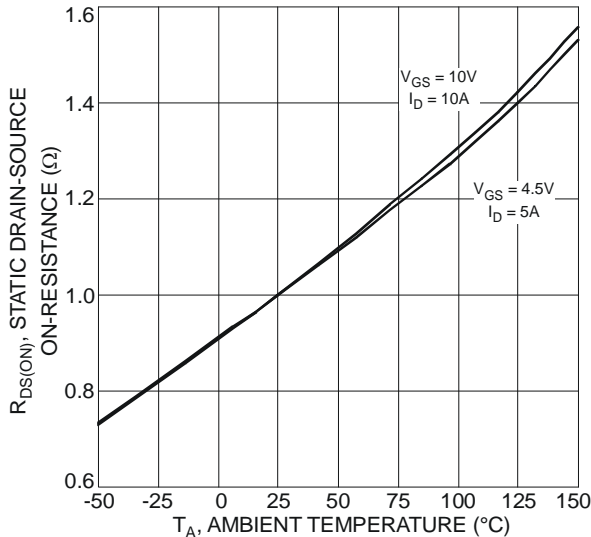


Fig. 5 Static Drain-Source On-Resistance vs. Ambient Temperature

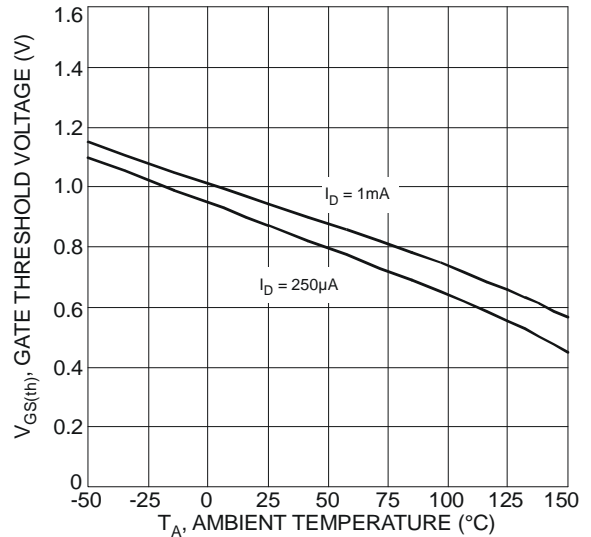


Fig. 6 Gate Threshold Variation vs. Ambient Temperature

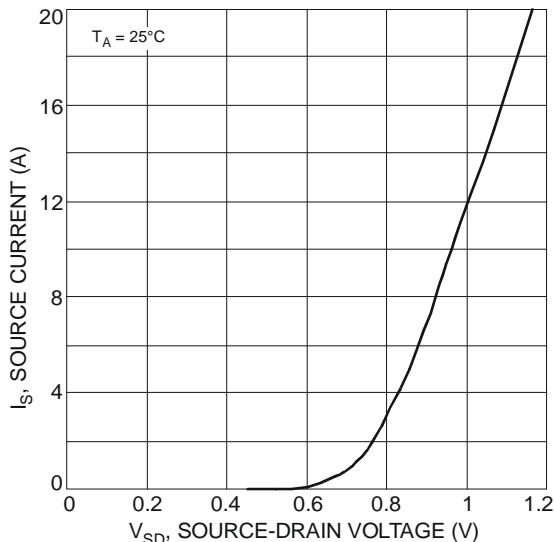


Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

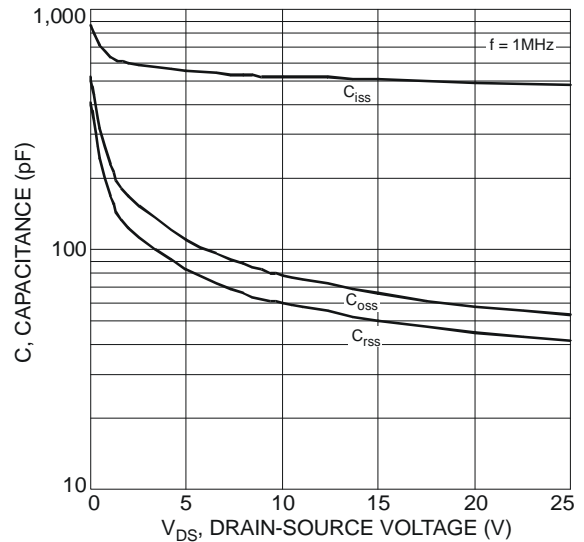
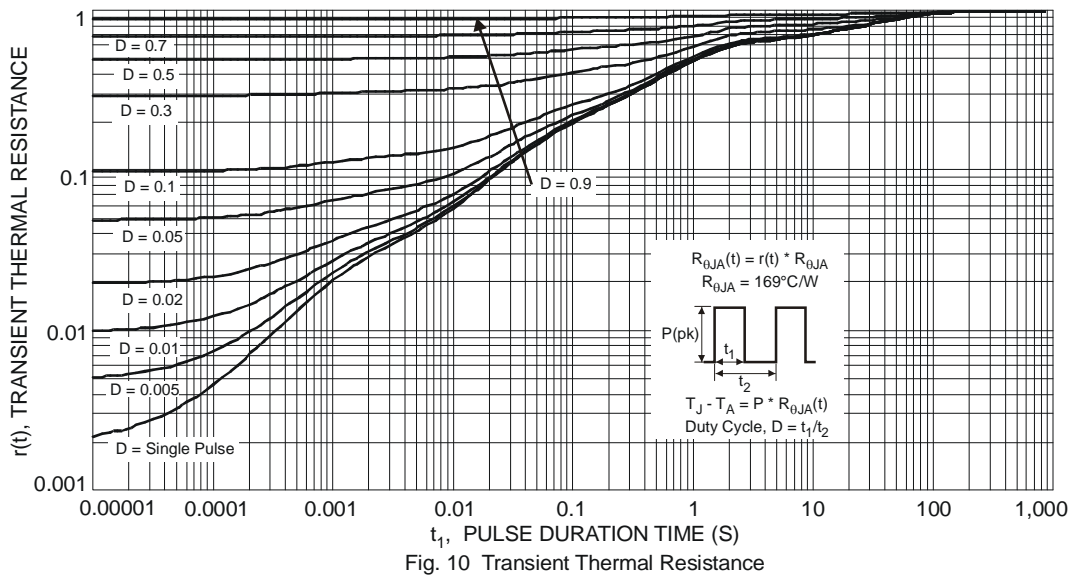
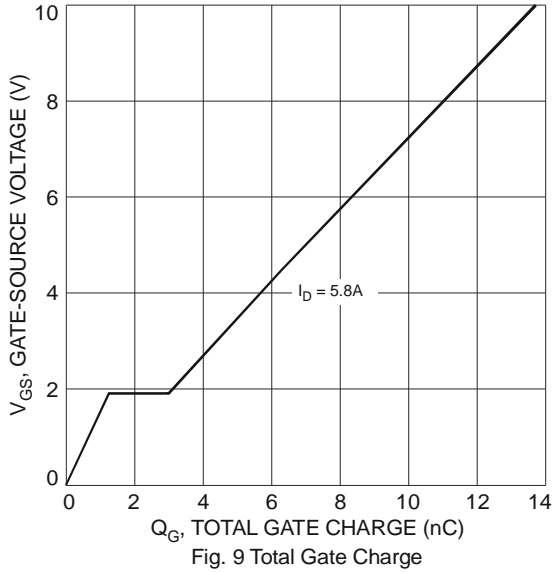


Fig. 8 Typical Total Capacitance

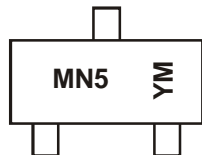


Ordering Information (Note 5)

Part Number	Case	Packaging
DMN3052L-7	SOT-23	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



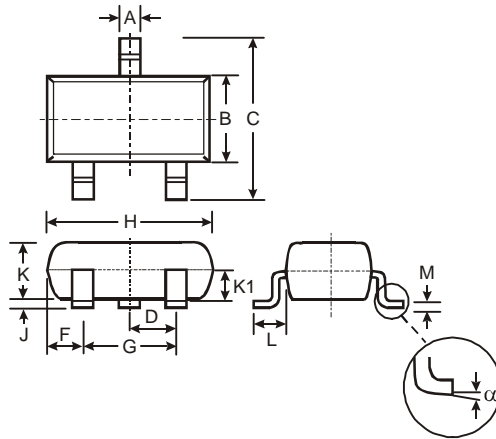
MN5 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: V = 2008)
 M = Month (ex: 9 = September)

Date Code Key

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

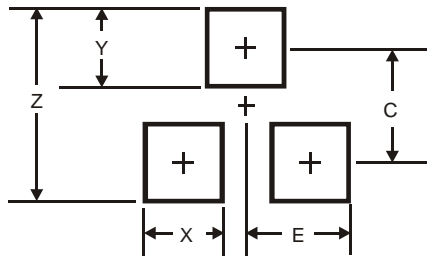
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



SOT-23			
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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