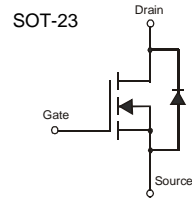


Features

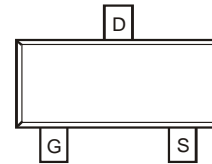
- Low On-Resistance:
 $R_{DS(ON)} < 38m\Omega$ @ $V_{GS} = 10V, I_D = 5.8A$
 $R_{DS(ON)} < 64m\Omega$ @ $V_{GS} = 4.5V, I_D = 5.0A$
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- **Lead Free By Design/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**



TOP VIEW



Equivalent Circuit



TOP VIEW

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 3
- Ordering Information: See Page 3
- Weight: 0.008 grams (approximate)

Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Drain Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current (Note 1)	I_D	$T_A = 25^\circ C$	5.8
		$T_A = 70^\circ C$	4.9
Drain Current (Note 1)	I_{DM}	20	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 @ $T_A = 25^\circ C$ (Note 1)	$R_{\theta JA}$	90	$^\circ C/W$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$

Electrical Characteristics @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 4)						
Drain-Source Breakdown Voltage	BV_{DSS}	30	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	800	nA	$V_{DS} = 28V, V_{GS} = 0V$
Gate-Body Leakage	I_{GSS}	—	—	± 80 ± 800	nA	$V_{GS} = \pm 12V, V_{DS} = 0V$ $V_{GS} = \pm 20V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 4)						
Gate Threshold Voltage	$V_{GS(th)}$	1.3	1.9	2.2	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	33	38	$m\Omega$	$V_{GS} = 10V, I_D = 5.8A$ $V_{GS} = 4.5V, I_D = 5.0A$
		—	54	64		
Forward Transconductance	$ Y_{fs} $	—	5	—	S	$V_{DS} = 5V, I_D = 3.1A$
Source-Drain Diode Forward Voltage	V_{SD}	—	0.78	1.16	V	$V_{GS} = 0V, I_S = 2.0A$
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	—	424	—	pF	$V_{DS} = 5V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	C_{oss}	—	115	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	81	—	pF	

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

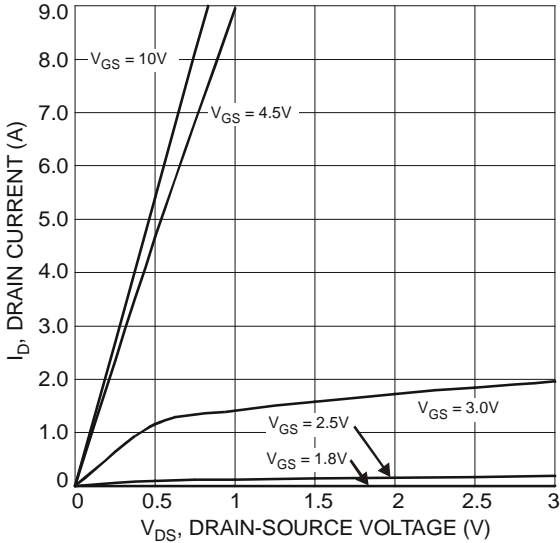


Fig. 1 Typical Output Characteristics

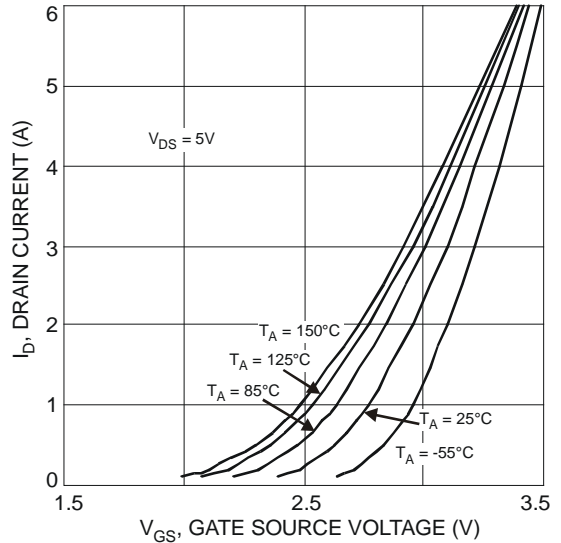


Fig. 2 Typical Transfer Characteristics

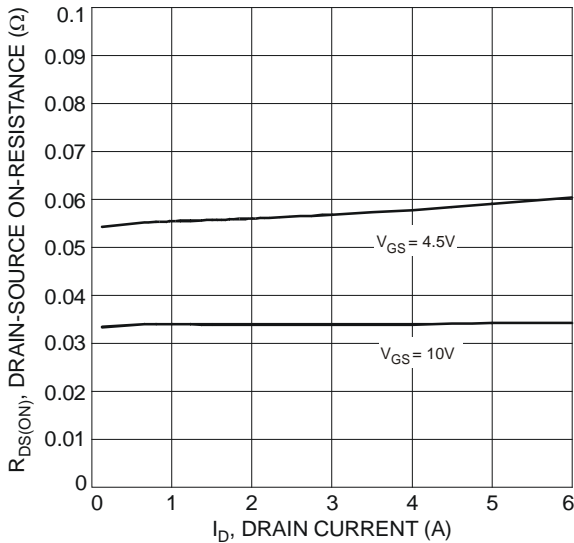


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

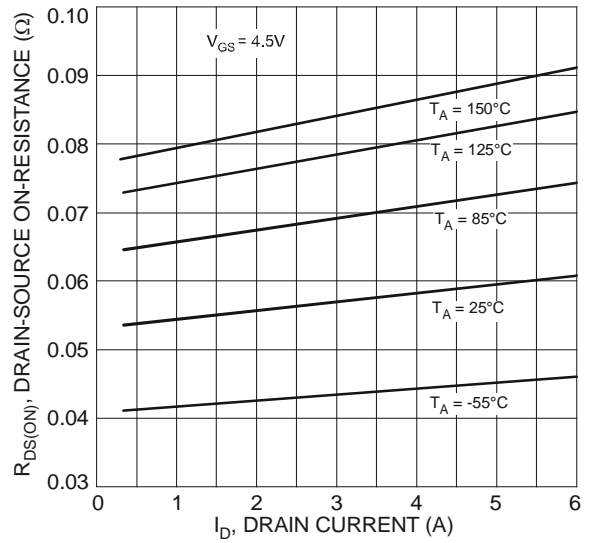


Fig. 4 Typical Drain-Source On-Resistance vs. Drain Current and Temperature

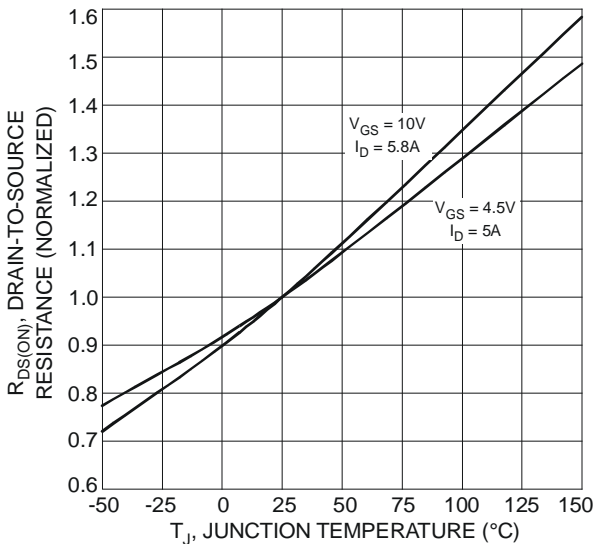


Fig. 5 On-Resistance Variation with Temperature

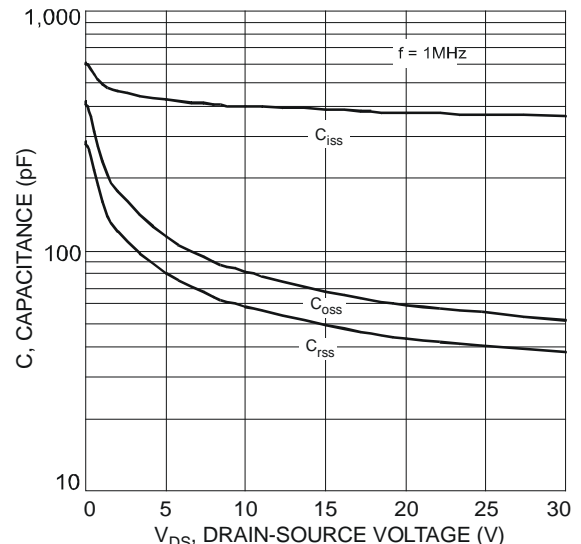


Fig. 6 Typical Capacitance

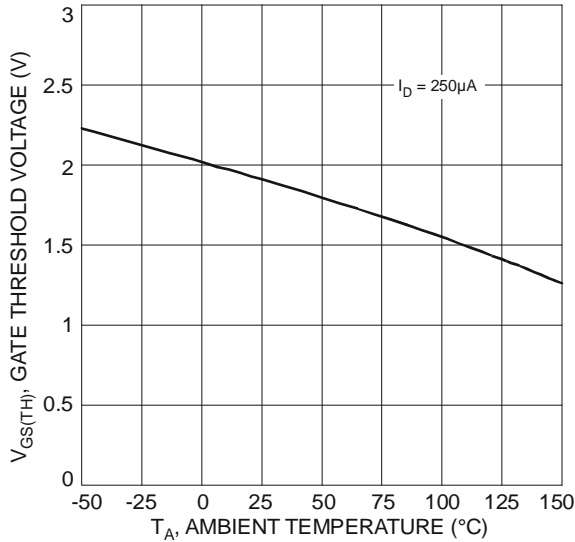


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

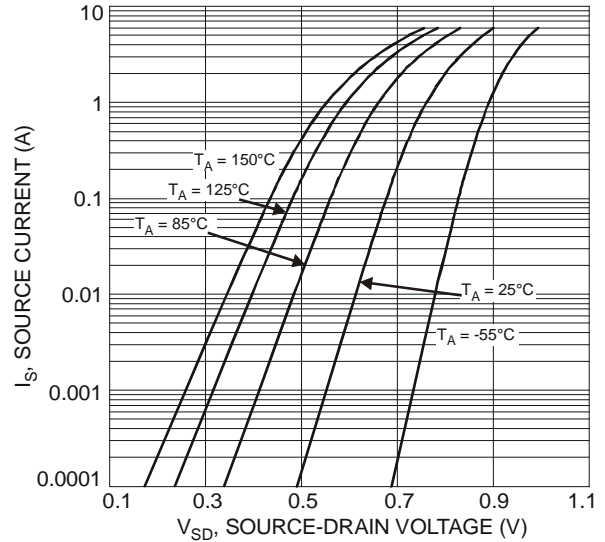


Fig. 8 Diode Forward Voltage vs. Current

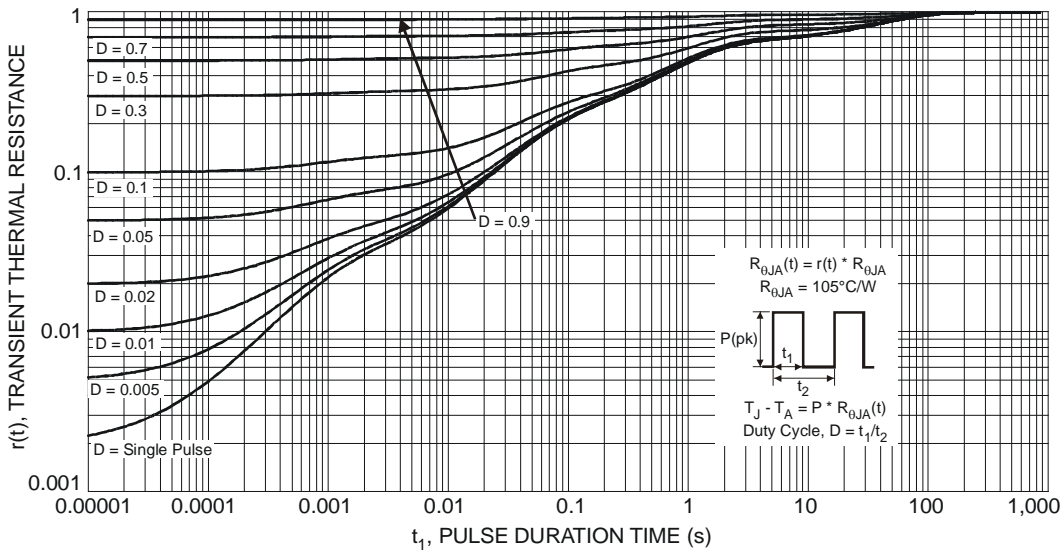


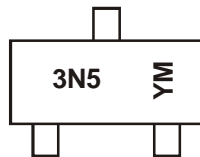
Fig. 9 Transient Thermal Response

Ordering Information (Note 5)

Part Number	Case	Packaging
DMN3051L-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



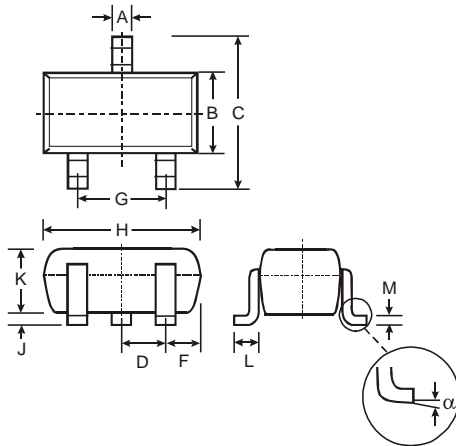
3N5 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year ex: U = 2007
 M = Month ex: 9 = September

Date Code Key

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	U	V	W	X	Y	Z	A	B	C

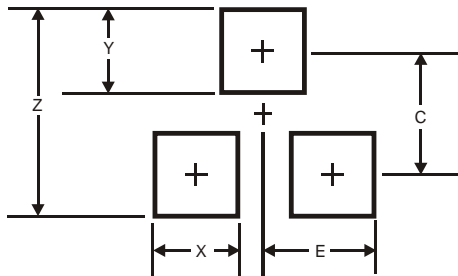
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
F	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
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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