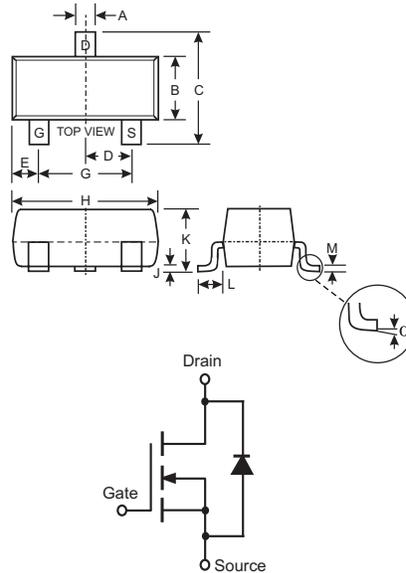


### Features

- Single N-Channel MOSFET
- Low On-Resistance
- Very Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- Ultra-Small Surface Mount Package
- **Lead Free By Design/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3)**

### 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-020C
- Terminals Connections: See Diagram
- Terminals: Finish — Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking: Date Code and Type Code, See Page 2
- Ordering & Date Code Information: See Page 2
- Weight: 0.008 grams (approximate)



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
E	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
$\alpha$	0°	8°
<b>All Dimensions in mm</b>		

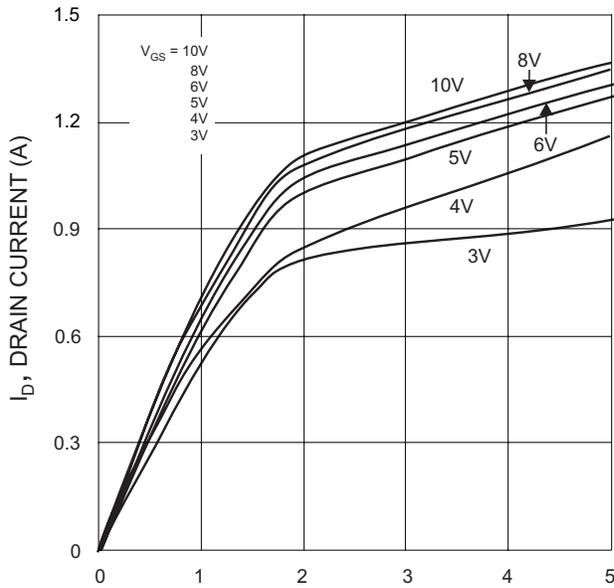
### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Units	
Drain-Source Voltage	$V_{DSS}$	50	V	
Drain-Gate Voltage $R_{GS} \leq 1.0M\Omega$	$V_{DGR}$	50	V	
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V	
		$\pm 40$		
Drain Current (Note 1)	Continuous	$I_D$	280	mA
	Pulsed	$I_{DM}$	1.5	A
Total Power Dissipation (Note 1)	$P_d$	350	mW	
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	357	$^\circ\text{C/W}$	
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$	

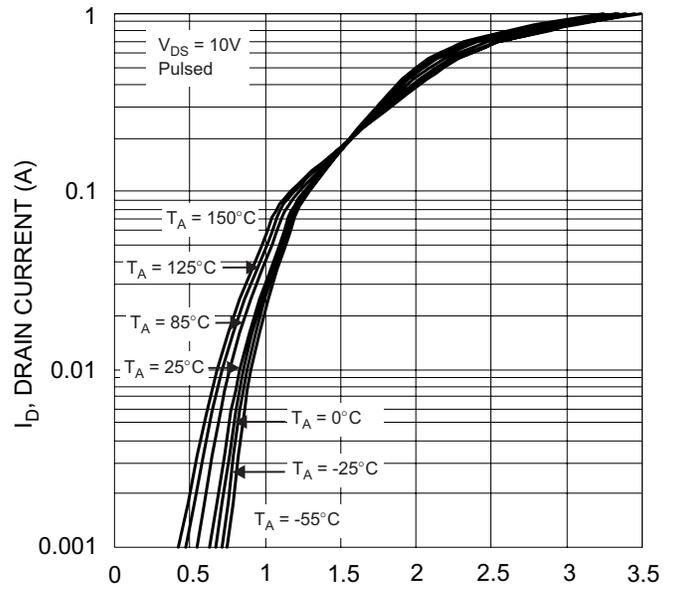
- Notes:
1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. No purposefully added lead.
  3. Diodes Inc's "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 4)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	50	—	—	V	$V_{GS} = 0V, I_D = 10\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	—	—	0.1 500	$\mu A$	@ $T_C = 25^\circ\text{C}$ @ $T_C = 125^\circ\text{C}$ $V_{DS} = 50V, V_{GS} = 0V$
Gate-Body Leakage	$I_{GSS}$	—	—	$\pm 20$	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$
<b>ON CHARACTERISTICS (Note 4)</b>						
Gate Threshold Voltage	$V_{GS(th)}$	0.49	—	1.2	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	1.6 2.2	3 4	$\Omega$	$V_{GS} = 2.7V, I_D = 0.2A,$ $V_{GS} = 1.8V, I_D = 50mA$
On-State Drain Current	$I_{D(ON)}$	0.5	1.0	—	A	$V_{GS} = 10V, V_{DS} = 7.5V$
Forward Transconductance	$g_{FS}$	200	—	—	mS	$V_{DS} = 10V, I_D = 0.2A$
Source-Drain Diode Forward Voltage	$V_{SD}$	0.5	—	1.4	V	$V_{GS} = 0V, I_S = 115mA$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{iss}$	—	—	50	pF	$V_{DS} = 25V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	$C_{oss}$	—	—	25	pF	
Reverse Transfer Capacitance	$C_{rss}$	—	—	5.0	pF	



$V_{DS}$ , DRAIN-SOURCE VOLTAGE (V)  
Fig. 1 Typical Output Characteristics



$V_{GS}$ , GATE-SOURCE VOLTAGE (V)  
Fig. 2 Typical Transfer Characteristics

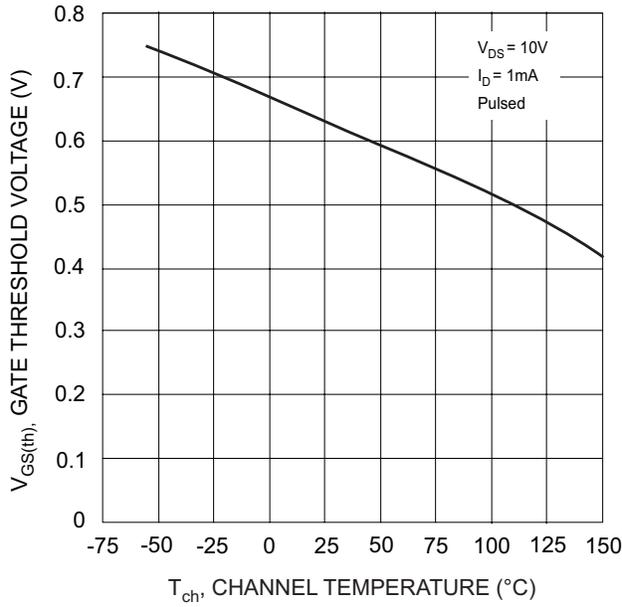


Fig. 3 Gate Threshold Voltage vs. Channel Temperature

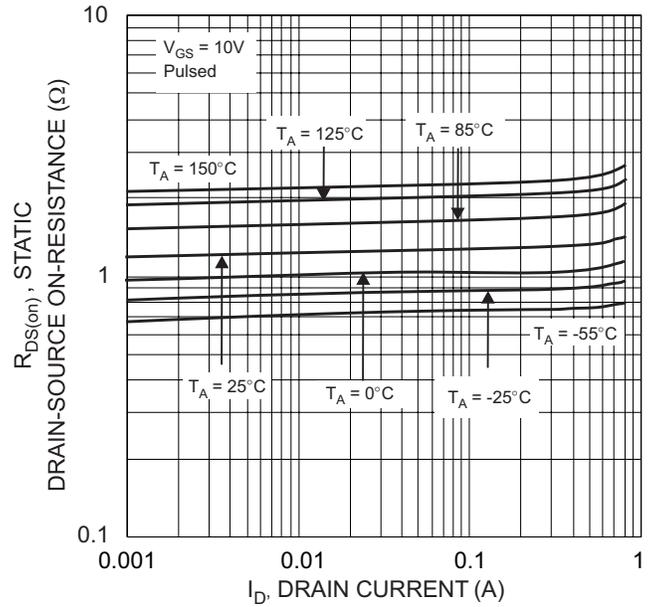


Fig. 4 Static Drain-Source On-Resistance Vs. Drain Current

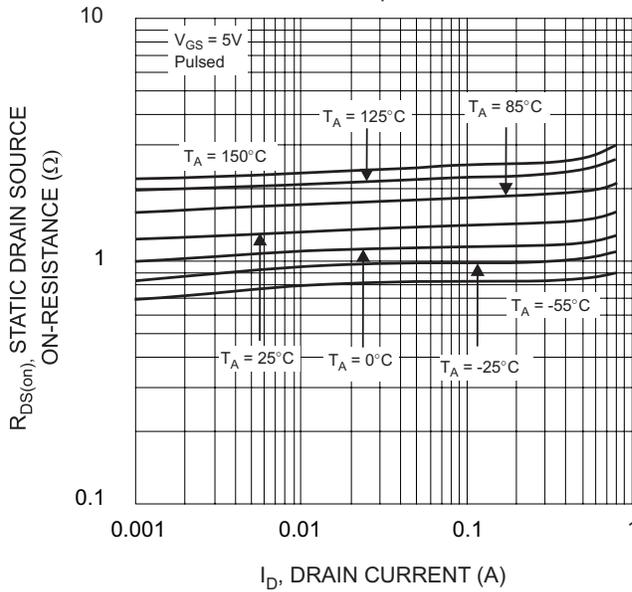


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

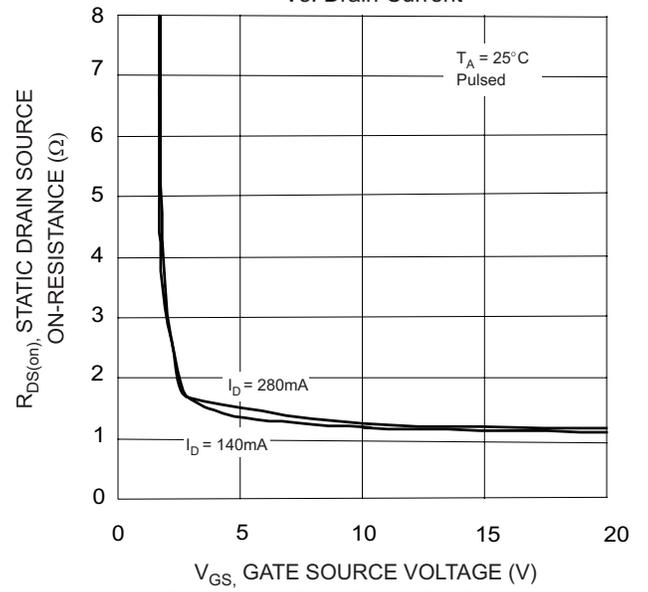


Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Voltage

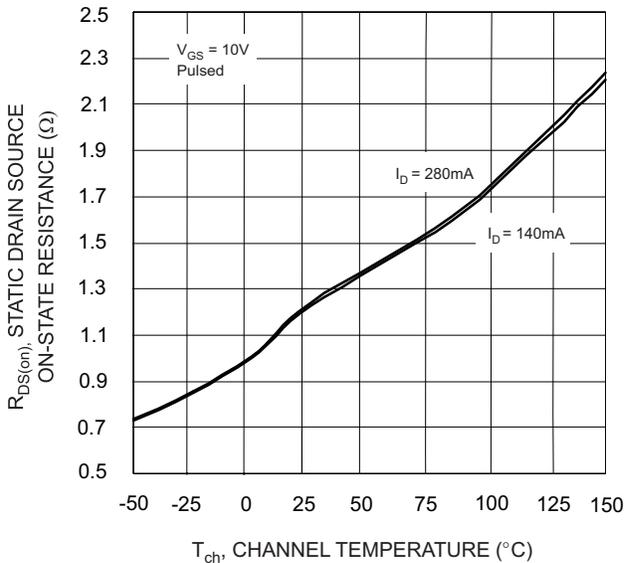


Fig. 7 Static Drain-Source On-State Resistance vs. Channel Temperature

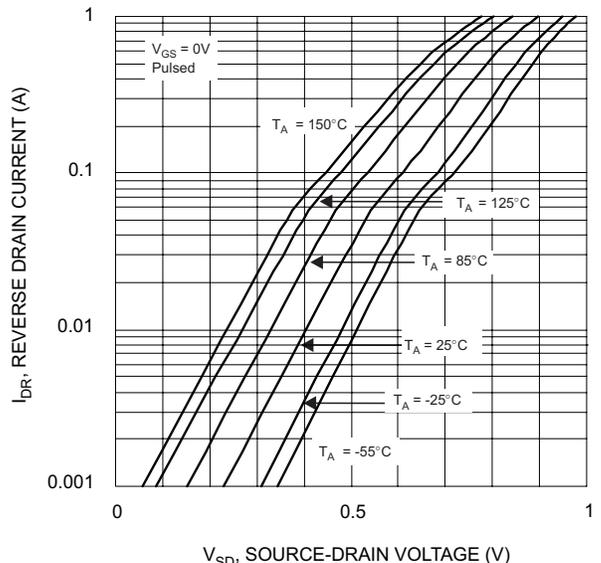


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

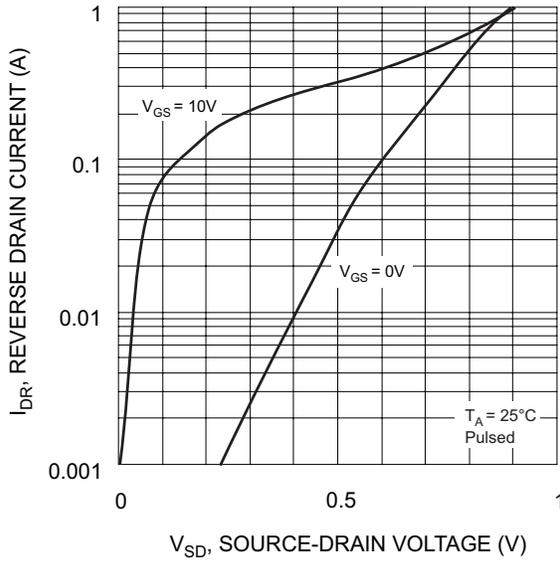


Fig. 9 Reverse Drain Current vs. Source-Drain Voltage

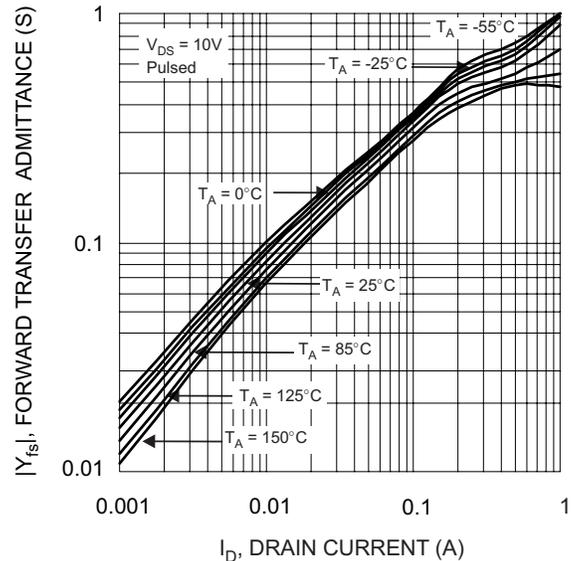


Fig. 10 Forward Transfer Admittance vs. Drain Current

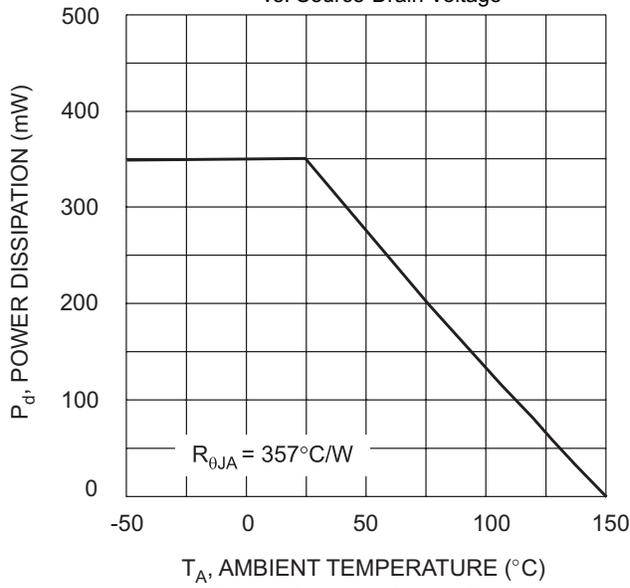


Fig. 11, Derating Curve - Total

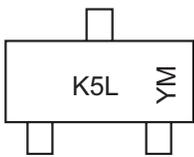
**Ordering Information**

(Note 5)

Device	Packaging	Shipping
DMN5L06-7	SOT-23	3000/Tape & Reel

- Notes: 4. Short duration test pulse used to minimize self-heating effect.  
5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



K5L = DMN5L06 Product Type Marking Code  
YM = Date Code Marking  
Y = Year ex: S = 2005  
M = Month ex: 9 = September

Date Code Key

Year	2005	2006	2007	2008	2009
Code	S	T	U	V	W

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