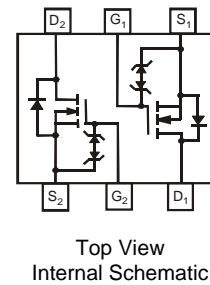


## Features

- Dual N-Channel MOSFET
- Low On-Resistance
- 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 1)**
- **ESD Protected up to 2KV**
- **"Green" Device (Note 2)**
- **Qualified to AEC-Q101 standards for High Reliability**

## Mechanical Data

- Case: SOT26
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish — Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.015 grams (approximate)



## Ordering Information (Note 3)

Part Number	Case	Packaging
DMN2004DMK-7	SOT26	3000/Tape & Reel

- Notes:
1. No purposefully added lead.
  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



NAB = Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: T = 2006)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	T	U	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	Units	
Drain-Source Voltage		$V_{DSS}$	20	V	
Gate-Source Voltage		$V_{GSS}$	$\pm 8$	V	
Drain Current (Note 4)	Steady State	$I_D$	$T_A = 25^\circ\text{C}$	540	mA
			$T_A = 85^\circ\text{C}$	390	
Pulsed Drain Current (Note 5)		$I_{DM}$	1.5	A	

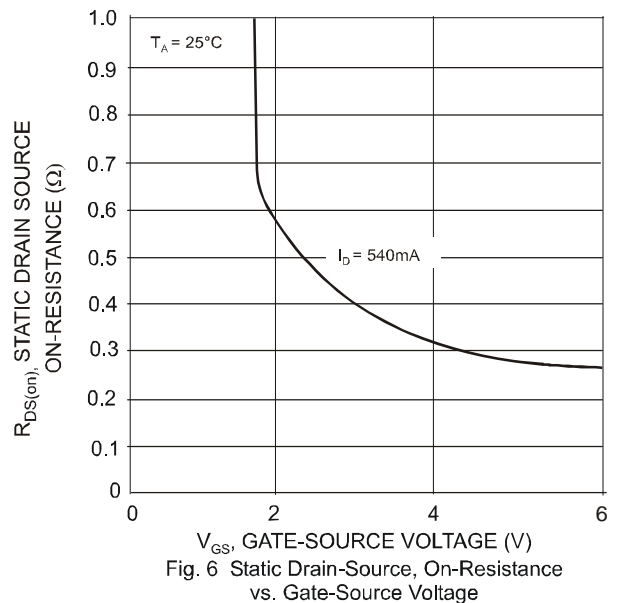
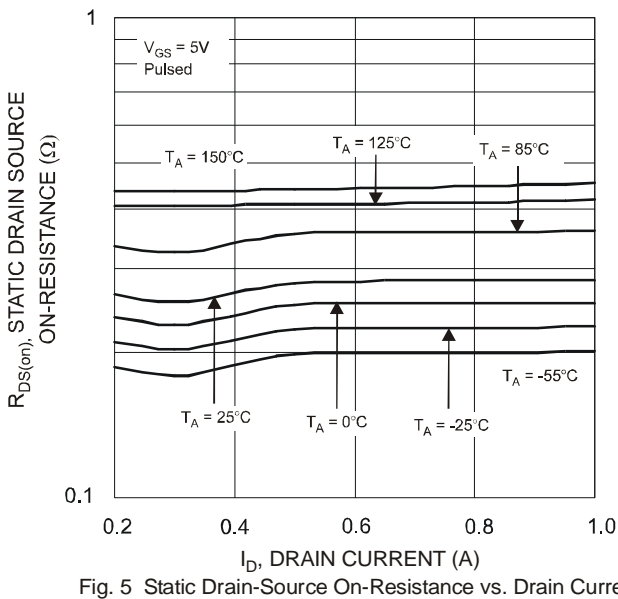
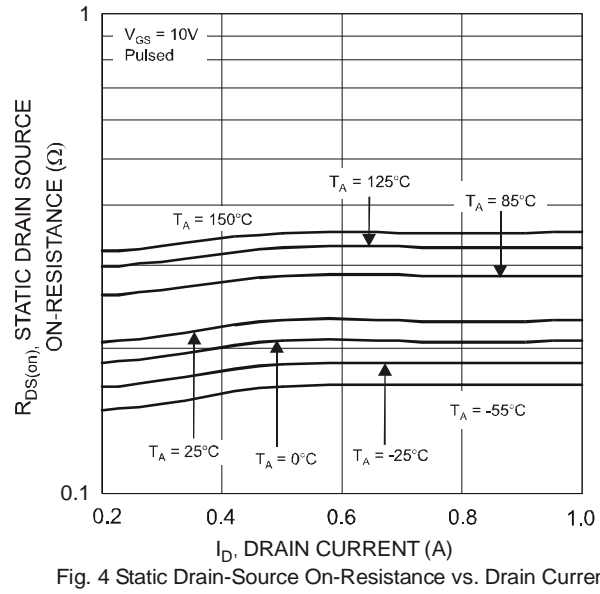
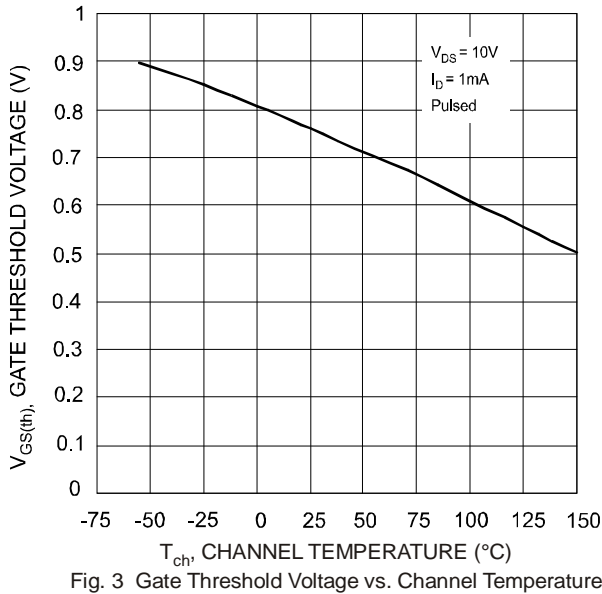
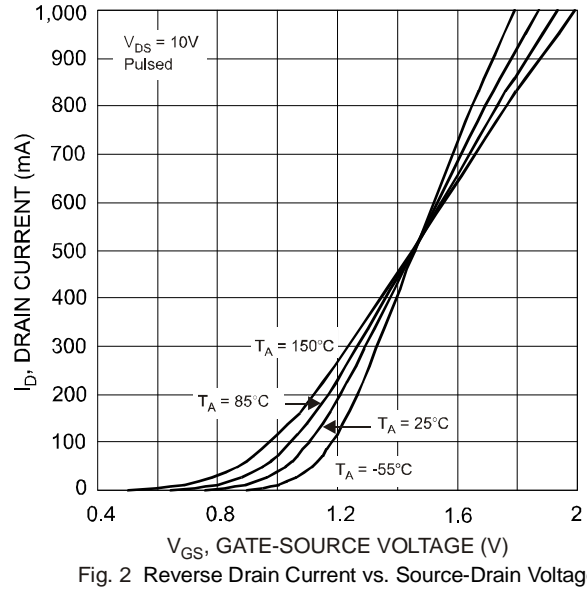
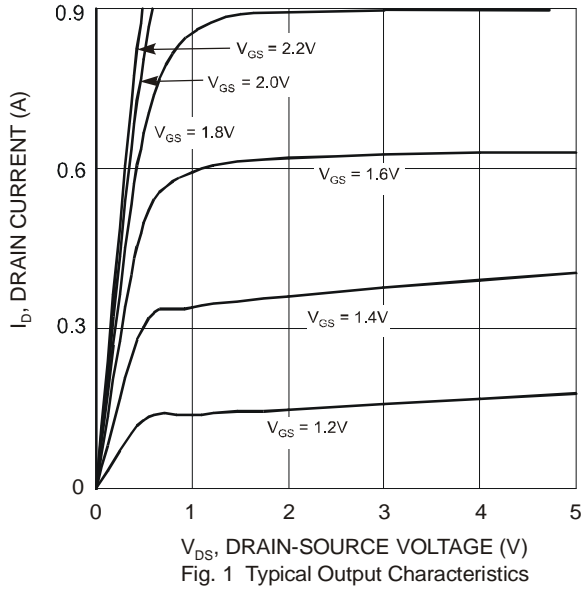
**Thermal Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 4)	$P_D$	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 6)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	20	—	—	V	$V_{GS} = 0V, I_D = 10\mu\text{A}$
Zero Gate Voltage Drain Current	$I_{DSS}$	—	—	1	$\mu\text{A}$	$V_{DS} = 16V, V_{GS} = 0V$
Gate-Source Leakage	$I_{GSS}$	—	—	$\pm 1$	$\mu\text{A}$	$V_{GS} = \pm 4.5V, V_{DS} = 0V$
<b>ON CHARACTERISTICS (Note 6)</b>						
Gate Threshold Voltage	$V_{GS(th)}$	0.5	—	1.0	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	0.4	0.55	$\Omega$	$V_{GS} = 4.5V, I_D = 540\text{mA}$
			0.5	0.70		$V_{GS} = 2.5V, I_D = 500\text{mA}$
			0.7	0.9		$V_{GS} = 1.8V, I_D = 350\text{mA}$
Forward Transfer Admittance	$ Y_{fs} $	200	—	—	ms	$V_{DS} = 10V, I_D = 0.2A$
Diode Forward Voltage (Note 6)	$V_{SD}$	0.5	—	1.4	V	$V_{GS} = 0V, I_S = 115\text{mA}$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{iss}$	—	—	150	pF	$V_{DS} = 16V, V_{GS} = 0V$ $f = 1.0\text{MHz}$
Output Capacitance	$C_{oss}$	—	—	25	pF	
Reverse Transfer Capacitance	$C_{rss}$	—	—	20	pF	

- Notes:
- Device mounted on FR-4 PCB.
  - Pulse width  $\leq 10\mu\text{s}$ , Duty Cycle  $\leq 1\%$ .
  - Short duration pulse test used to minimize self-heating effect.



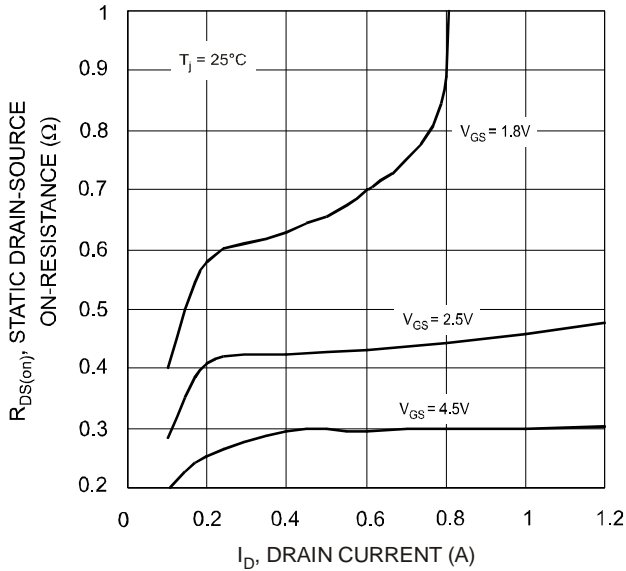


Fig. 7 On-Resistance vs. Drain Current and Gate Voltage

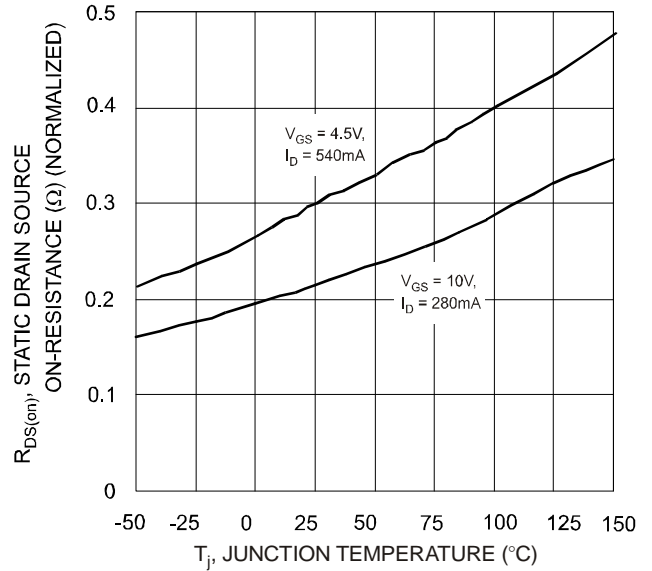


Fig. 8 Static Drain-Source, On-Resistance vs. Temperature

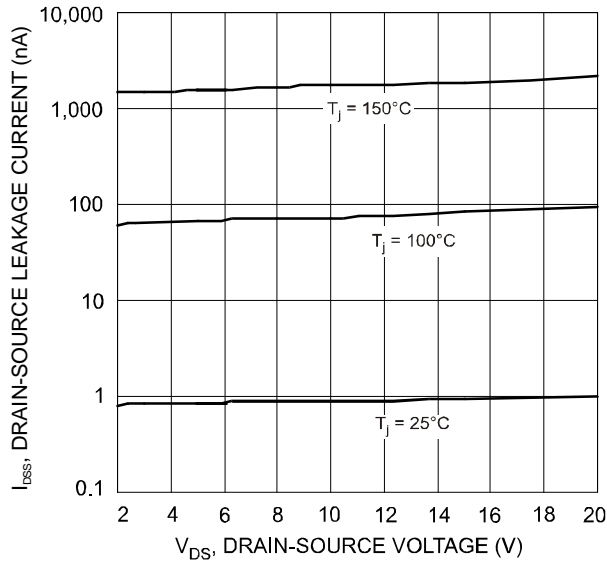


Fig. 9 Drain Source Leakage Current vs. Voltage

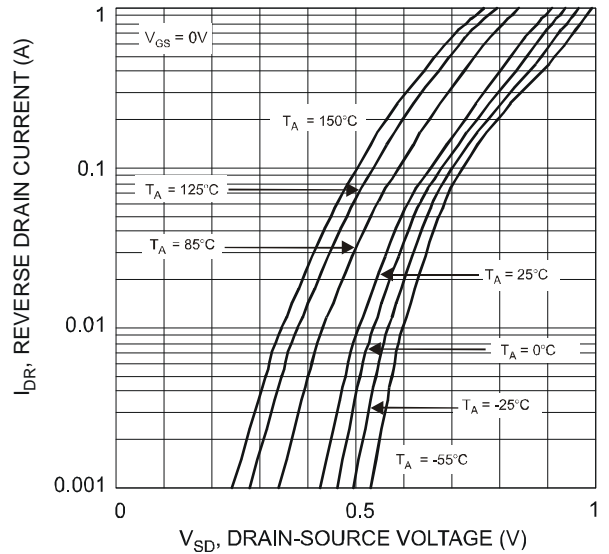


Fig. 10 Reverse Drain Current vs. Source-Drain Voltage

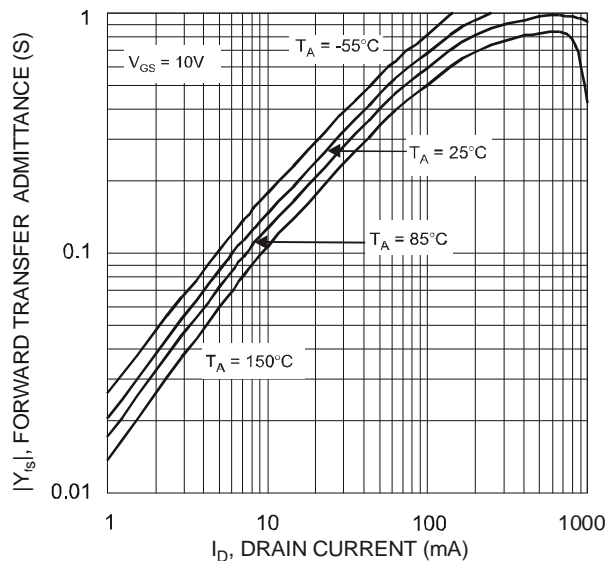


Fig. 11 Forward Transfer Admittance vs. Drain Current

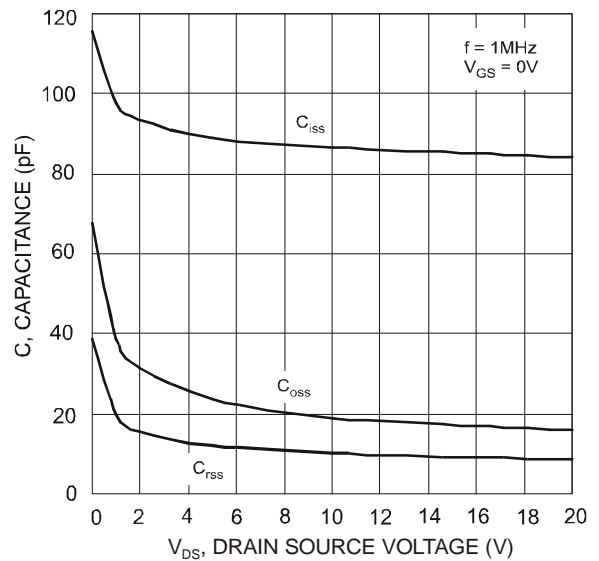
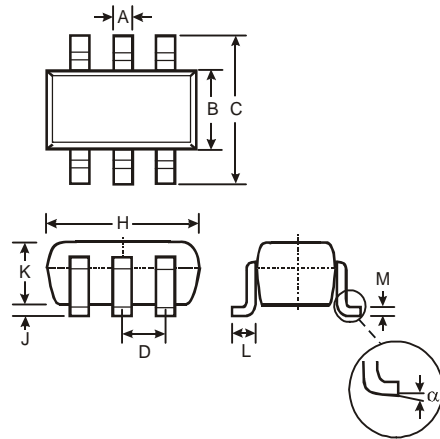


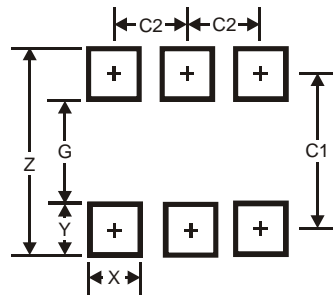
Fig. 12 Capacitance Variation

**Package Outline Dimensions**



SOT26			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
α	0°	8°	—
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

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