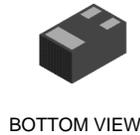


**Features**

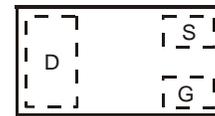
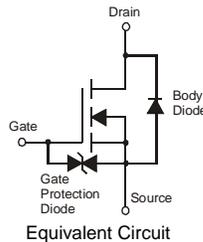
- N-Channel MOSFET
- Low On-Resistance:
  - 3.0  $\Omega$  @ 4.5V
  - 4.0  $\Omega$  @ 2.5V
  - 6.0  $\Omega$  @ 1.8V
  - 10  $\Omega$  @ 1.5V
- Very Low Gate Threshold Voltage, 1.2V max
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- Ultra-Small Surface Mount Package
- ESD Protected Gate
- **Lead, Halogen and Antimony Free, RoHS Compliant (Note 2)**
- **"Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**Mechanical Data**

- Case: DFN1006H4-3
- 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 – NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 4
- Ordering Information: See Page 4
- Weight: 0.001 grams (approximate)



DFN1006H4-3



TOP VIEW

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

Characteristic	Symbol	Value	Unit
Drain Source Voltage	$V_{DSS}$	20	V
Gate-Source Voltage	$V_{GSS}$	$\pm 10$	V
Drain Current (Note 1)	$I_D$	230	mA
Pulsed Drain Current	$I_{DM}$	805	mA
	$T_P = 10\mu\text{s}$		

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

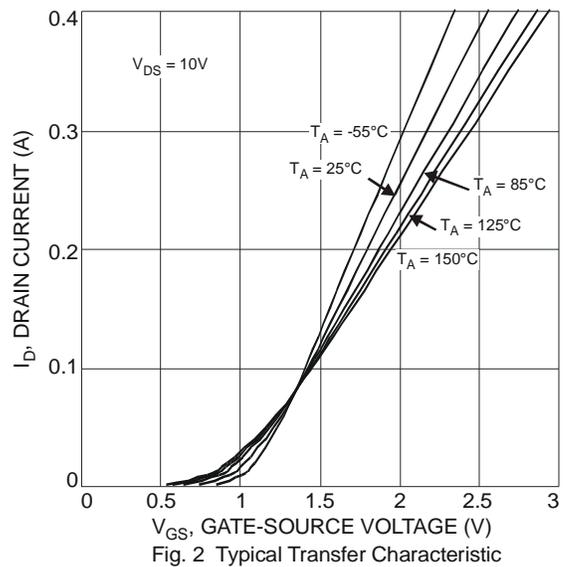
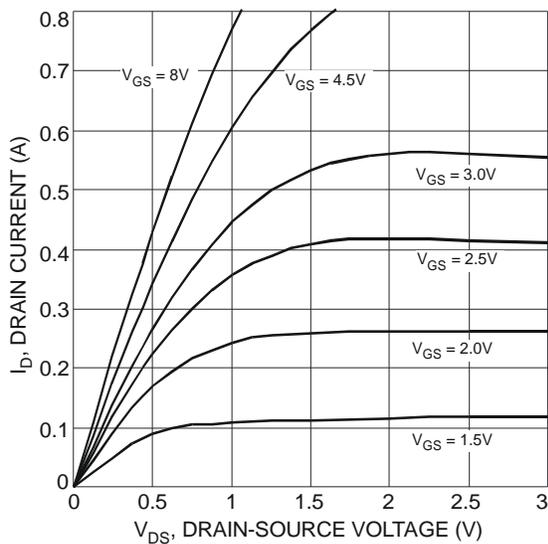
Total Power Dissipation (Note 1) @ $T_A = 25^\circ\text{C}$	$P_D$	350	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

- Notes:
1. Device mounted on FR-4 PCB, 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	$BV_{DSS}$	20	—	—	V	$V_{GS} = 0V, I_D = 100\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	—	—	500	nA	$V_{DS} = 20V, V_{GS} = 0V$
Gate-Body Leakage	$I_{GSS}$	—	—	$\pm 1$ $\pm 100$	$\mu A$ nA	$V_{GS} = \pm 10V, V_{DS} = 0V$ $V_{GS} = \pm 5V, V_{DS} = 0V$
<b>ON CHARACTERISTICS (Note 4)</b>						
Gate Threshold Voltage	$V_{GS(th)}$	0.6	—	0.9	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	1.8	3.0	$\Omega$	$V_{GS} = 4.5V, I_D = 100mA$ $V_{GS} = 2.5V, I_D = 50mA$ $V_{GS} = 1.8V, I_D = 20mA$ $V_{GS} = 1.5V, I_D = 10mA$ $V_{GS} = 1.2V, I_D = 1mA$
		—	2.4	4.0		
		—	2.9	6.0		
		—	3.7	10.0		
		—	5.4	15.0		
Forward Transconductance	$ Y_{fs} $	100	242	—	mS	$V_{DS} = 10V, I_D = 0.1A$
Source-Drain Diode Forward Voltage	$V_{SD}$	0.5	—	1.4	V	$V_{GS} = 0V, I_S = 115mA$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{iss}$	—	14.1	—	pF	$V_{DS} = 15V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	$C_{oss}$	—	2.9	—	pF	
Reverse Transfer Capacitance	$C_{rss}$	—	1.6	—	pF	
<b>SWITCHING CHARACTERISTICS</b>						
Turn-On Time	$T_{ON}$	—	12	—	ns	$V_{GS} = 4.5V, V_{DD} = 10V$ $I_D = 200mA, R_G = 2.0\Omega$
Turn-Off Time	$T_{OFF}$	—	29	—		

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



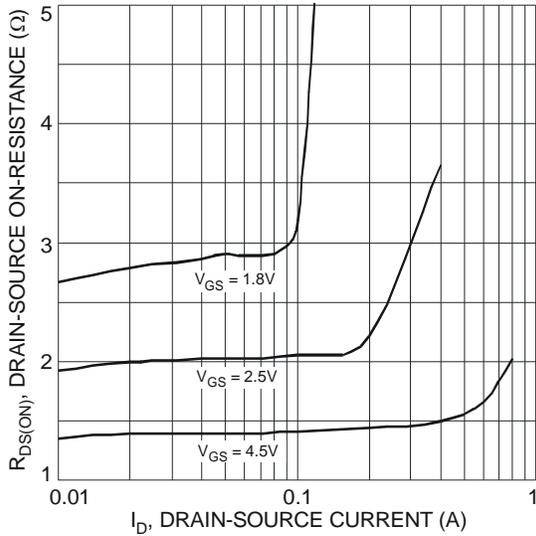


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

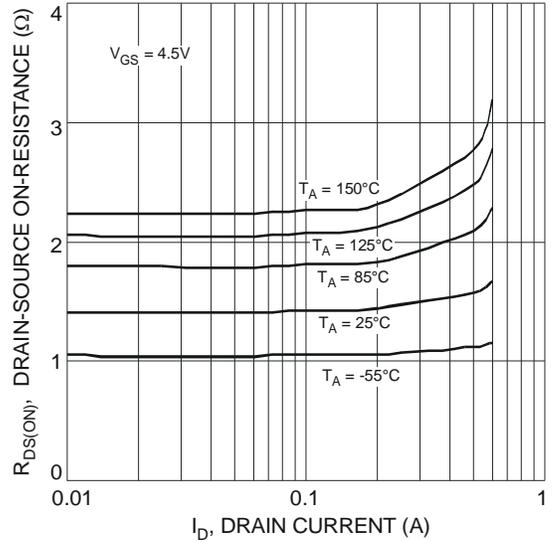


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

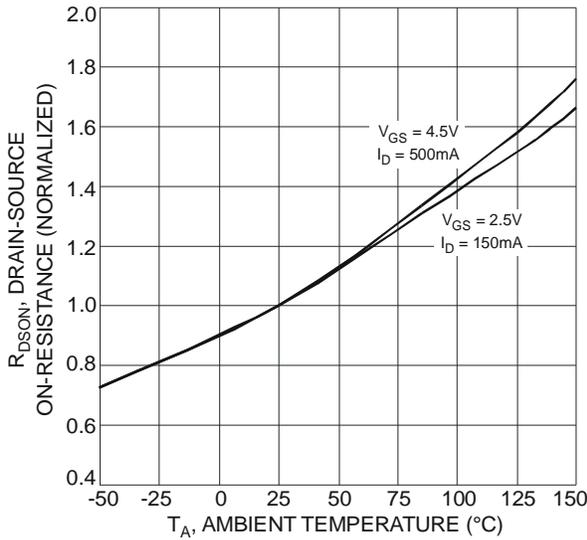


Fig. 5 On-Resistance Variation with Temperature

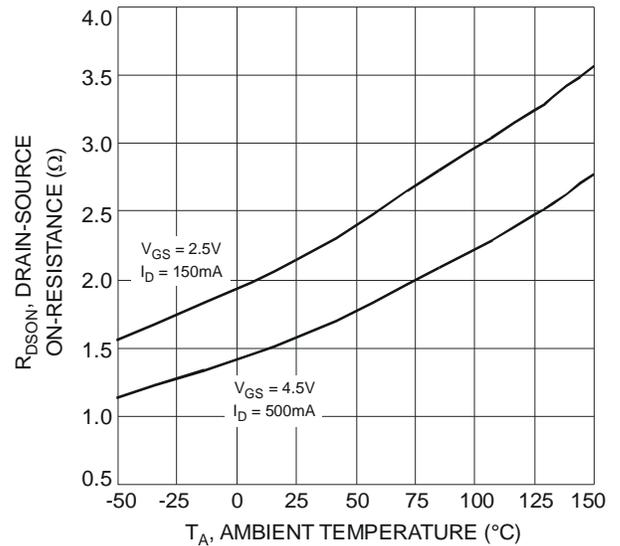


Fig. 6 On-Resistance Variation with Temperature

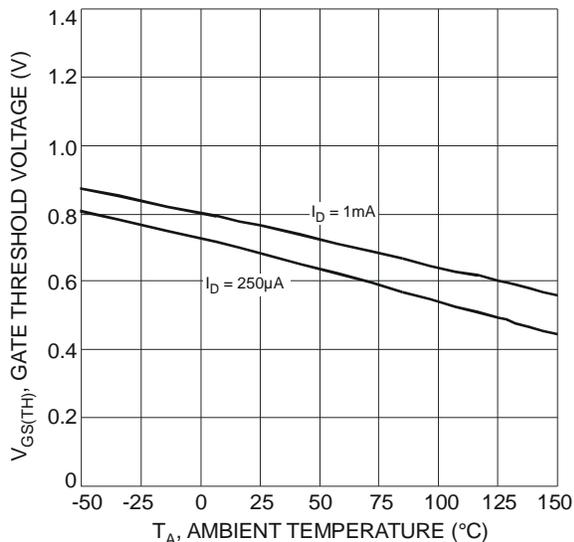


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

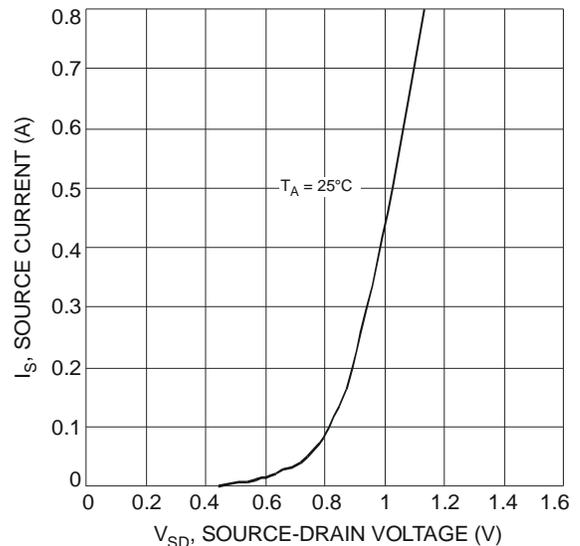


Fig. 8 Diode Forward Voltage vs. Current

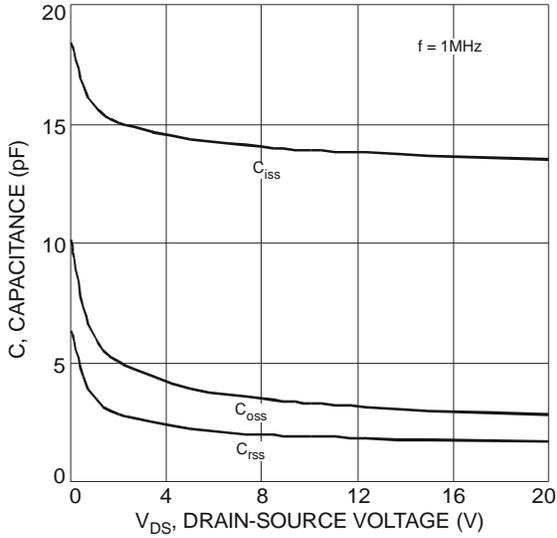


Fig. 9 Typical Total Capacitance

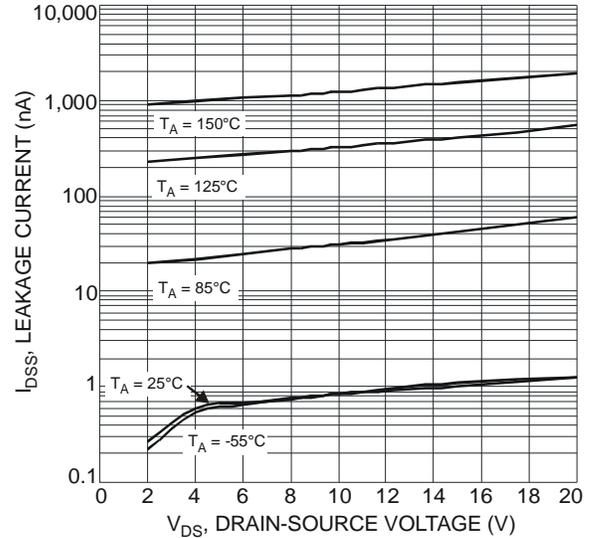


Fig. 10 Typical Leakage Current vs. Drain-Source Voltage

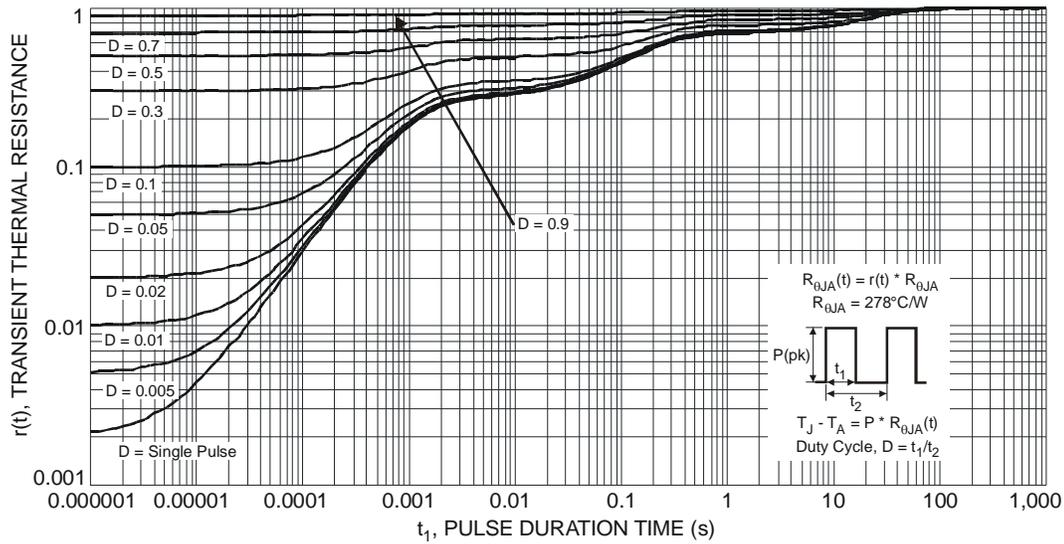


Fig. 11 Transient Thermal Response

**Ordering Information** (Note 5)

Part Number	Case	Packaging
DMN26D0UFB4-7	DFN1006H4-3	3000/Tape & Reel

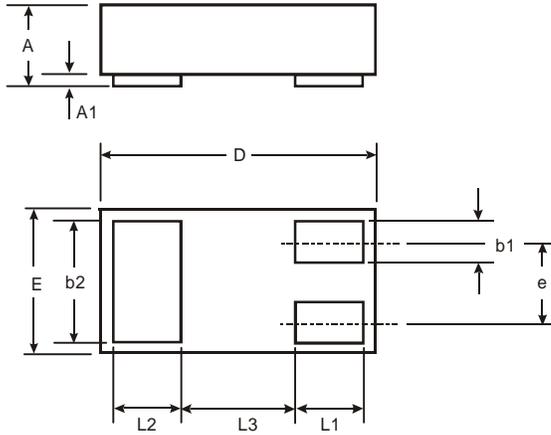
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



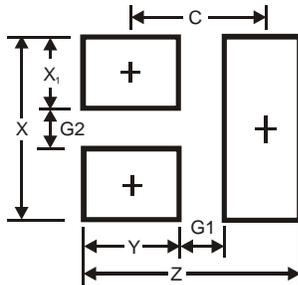
M1 = Product Type Marking Code

**Package Outline Dimensions**



DFN1006H4-3			
Dim	Min	Max	Typ
A	—	0.40	—
A1	0	0.05	0.02
b1	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.05	1.00
E	0.55	0.65	0.60
e	—	—	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	—	—	0.40
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	1.1
G1	0.3
G2	0.2
X	0.7
X1	0.25
Y	0.4
C	0.7

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