

Features

- Low On-Resistance
- Very Low Gate Threshold Voltage, 0.9V Max.
- Fast Switching Speed
- Low Input/Output Leakage
- Ultra-Small Surface Mount Package
- **Lead Free By Design/RoHS Compliant (Note 2)**
- **"Green" Device (Note 4)**
- **ESD Protected Gate**
- **Ultra Low Profile Package**
- **Qualified to AEC-Q101 Standards for High Reliability**



ESD protected

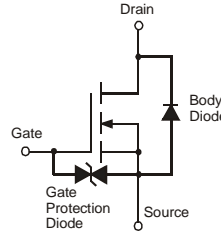


BOTTOM VIEW

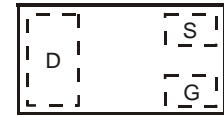
DFN1006H4-3

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-020C
- Terminal Connections: See Diagram
- Terminals: Finish — NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.001 grams



EQUIVALENT CIRCUIT


 TOP VIEW
Pin Out Configuration

Maximum Ratings @_{T_A} = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V _{DSS}	20	V
Gate-Source Voltage	V _{GSS}	±10	V
Drain Current per element (Note 1)	I _D	Continuous	200
		Pulsed (Note 3)	250

Thermal Characteristics @_{T_A} = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 1)	P _d	200	mW
Thermal Resistance, Junction to Ambient	R _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _j , T _{STG}	-65 to +150	°C

Electrical Characteristics @_{T_A} = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (per element) (Note 5)						
Drain-Source Breakdown Voltage	BV _{DSS}	20	—	—	V	V _{GS} = 0V, I _D = 100μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	10	μA	V _{DS} = 17V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±5	μA	V _{GS} = ±8V, V _{DS} = 0V
ON CHARACTERISTICS (per element) (Note 5)						
Gate Threshold Voltage	V _{GS(th)}	0.53	—	0.9	V	V _{DS} = V _{GS} , I _D = 100μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	0.9	1.5	Ω	V _{GS} = 4V, I _D = 10mA
		—	0.85	1.7		V _{GS} = 2.7V, I _D = 200mA
		—	1.2	1.7		V _{GS} = 2.5V, I _D = 10mA
		—	2.4	3.5		V _{GS} = 1.8V, I _D = 200mA
		—	2.5	3.5		V _{GS} = 1.5V, I _D = 1mA
Forward Transfer Admittance	Y _{fs}	40	—	—	mS	V _{DS} = 3V, I _D = 10mA

- Notes:
1. Device mounted on FR-4 PCB.
 2. No purposefully added lead.
 3. Pulse width ≤10μs, Duty Cycle ≤1%.
 4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 5. Short duration pulse test used to minimize self-heating effect.

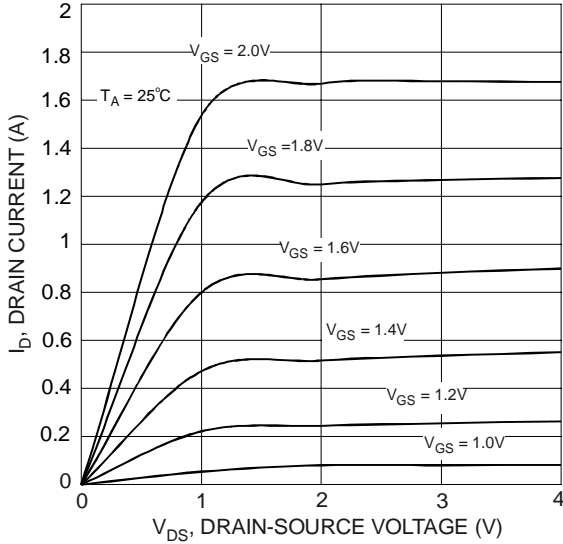


Fig. 1 Typical Output Characteristics

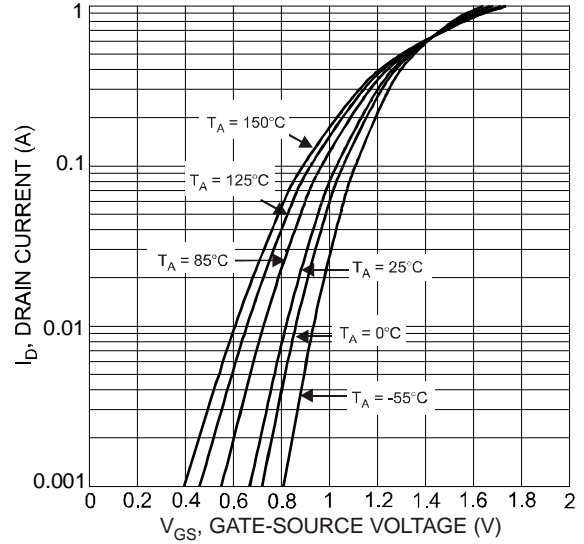


Fig. 2 Reverse Drain Current vs. Source-Drain Voltage

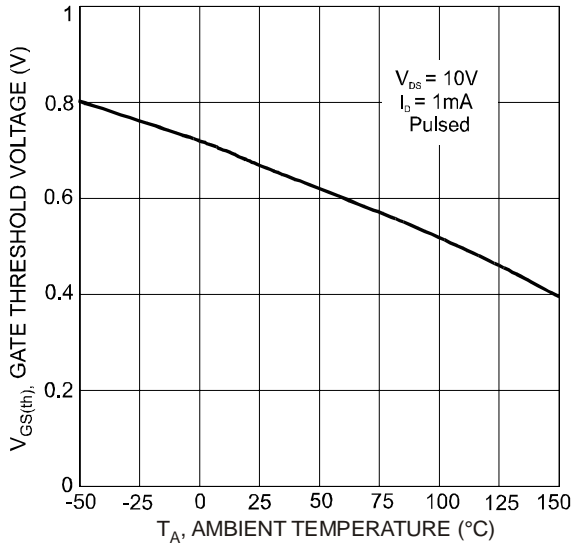


Fig. 3 Gate Threshold Voltage vs. Ambient Temperature

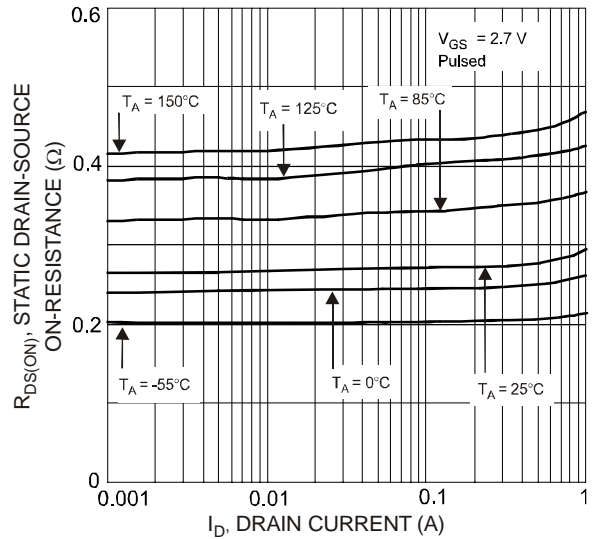


Fig. 4 Static Drain-Source On-State Resistance vs. Drain Current

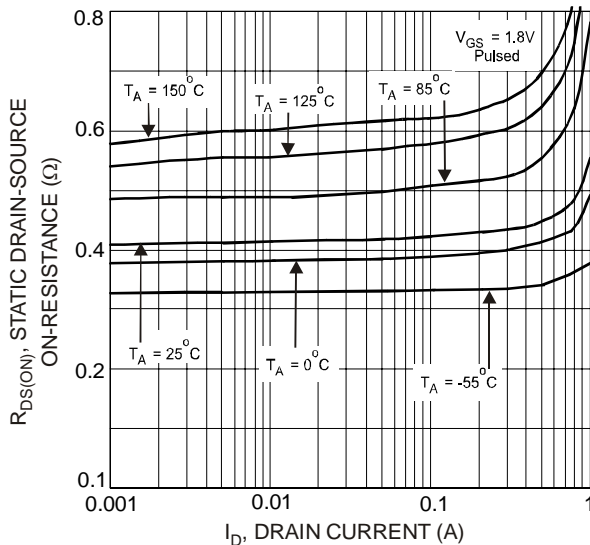


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

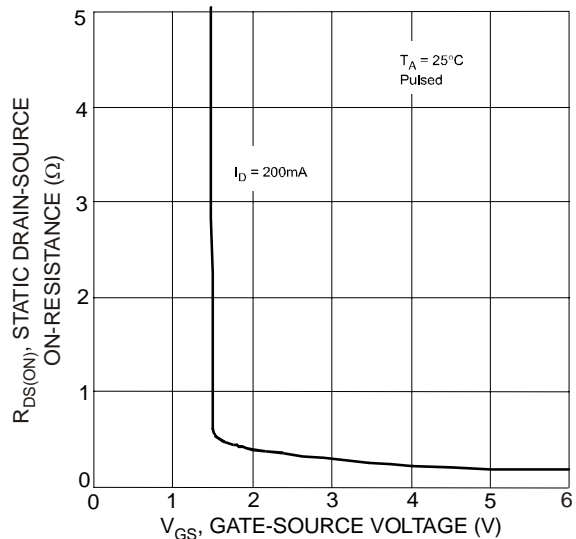


Fig. 6 Static Drain-Source, On-Resistance vs. Gate-Source Voltage

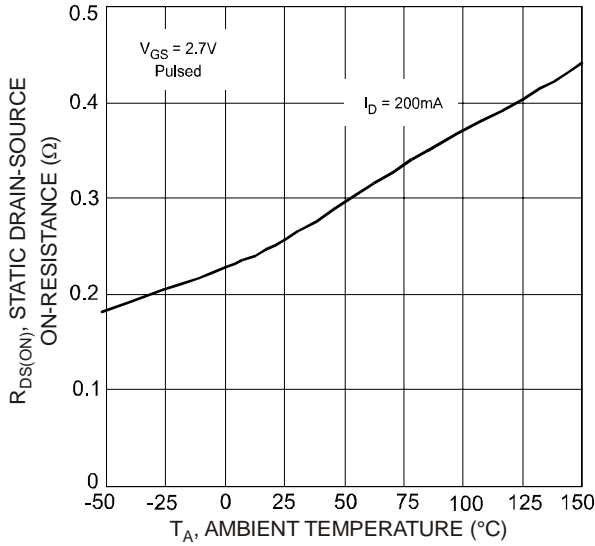


Fig. 7 Static Drain-Source, On-Resistance vs. Ambient Temperature

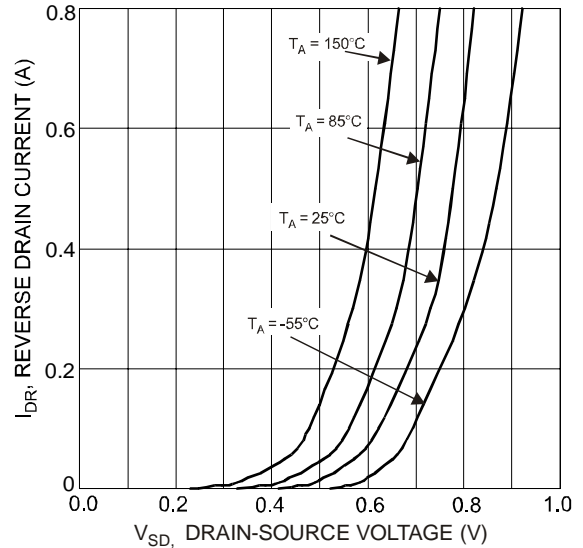


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

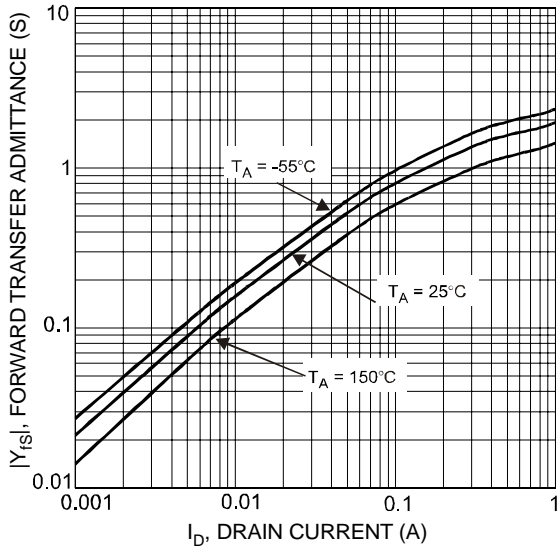


Fig. 9 Forward Transfer Admittance vs. Drain Current

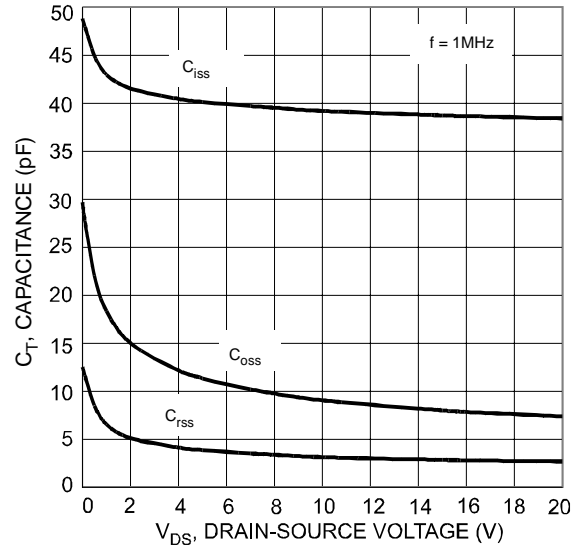


Fig. 10 Capacitance Variation

Ordering Information (Note 6)

Part Number	Case	Packaging
DMN2005LP4K-7	DFN1006H4-3	3000/Tape & Reel

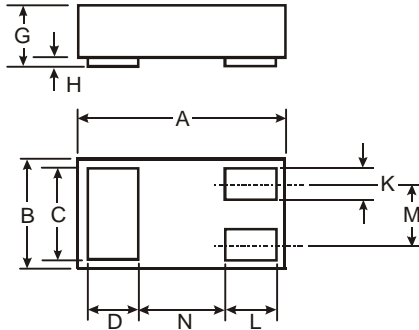
Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



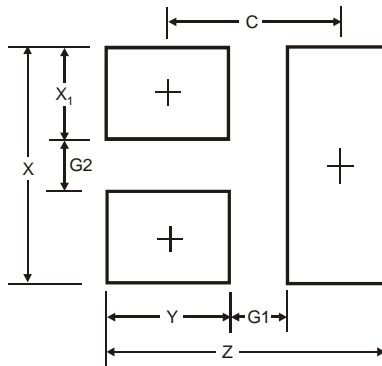
DN = Product Type Marking Code
Dot Denotes Drain Side

Package Outline Dimensions



DFN1006-3			
Dim	Min	Max	Typ
A	0.95	1.075	1.00
B	0.55	0.675	0.60
C	0.45	0.55	0.50
D	0.20	0.30	0.25
G	0.47	0.53	0.50
H	0	0.05	0.03
K	0.10	0.20	0.15
L	0.20	0.30	0.25
M	—	—	0.35
N	—	—	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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