

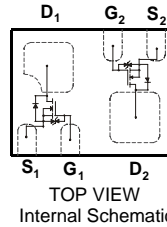
## Features

- 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**

## Mechanical Data

- Case: DFN1310H4-6
- 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 annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering & Date Code Information: See Page 3

DFN1310H4-6



## Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DSS</sub>	20	V
Gate-Source Voltage	V <sub>GSS</sub>	±10	V
Drain Current per element (Note 1)	I <sub>D</sub>	Continuous	200
		Pulsed (Note 3)	250

## Thermal Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 1)	P <sub>d</sub>	350	mW
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	357	°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +150	°C

## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (per element) (Note 5)</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	20	—	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = 100μA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	—	—	10	μA	V <sub>DS</sub> = 17V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±5	μA	V <sub>GS</sub> = ±8V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (per element) (Note 5)</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	0.53	—	0.9	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 100μA
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	—	0.9	1.5	Ω	V <sub>GS</sub> = 4V, I <sub>D</sub> = 10mA
		—	0.85	1.7		V <sub>GS</sub> = 2.7V, I <sub>D</sub> = 200mA
		—	1.2	1.7		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 10mA
		—	2.4	3.5		V <sub>GS</sub> = 1.8V, I <sub>D</sub> = 200mA
		—	2.5	3.5		V <sub>GS</sub> = 1.5V, I <sub>D</sub> = 1mA
Forward Transfer Admittance	Y <sub>fs</sub>	40	—	—	mS	V <sub>DS</sub> = 3V, I <sub>D</sub> = 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](http://www.diodes.com/products/lead_free/index.php).
  5. Short duration pulse test used to minimize self-heating effect.

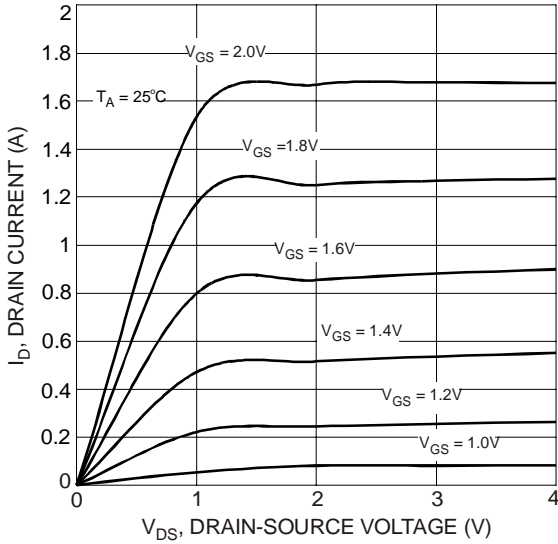


Fig. 1 Typical Output Characteristics

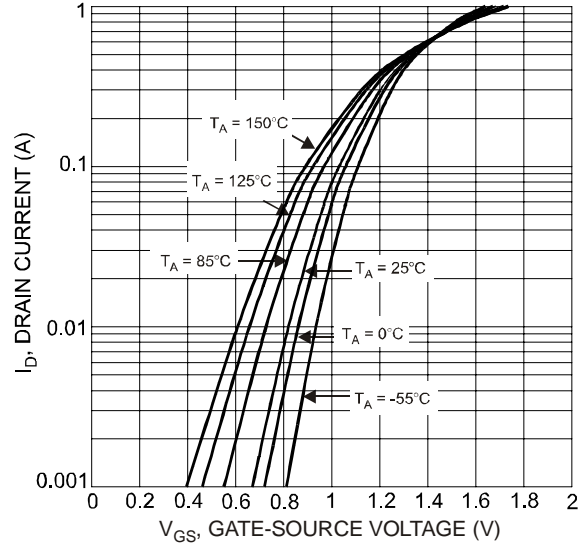


Fig. 2 Reverse Drain Current vs. Source-Drain Voltage

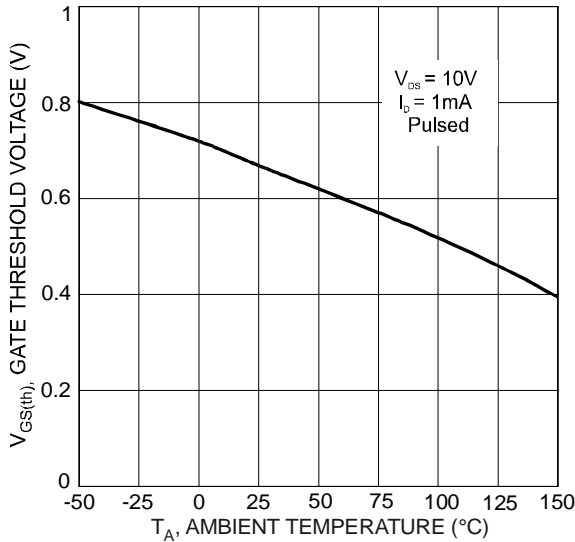


Fig. 3 Gate Threshold Voltage vs. Ambient Temperature

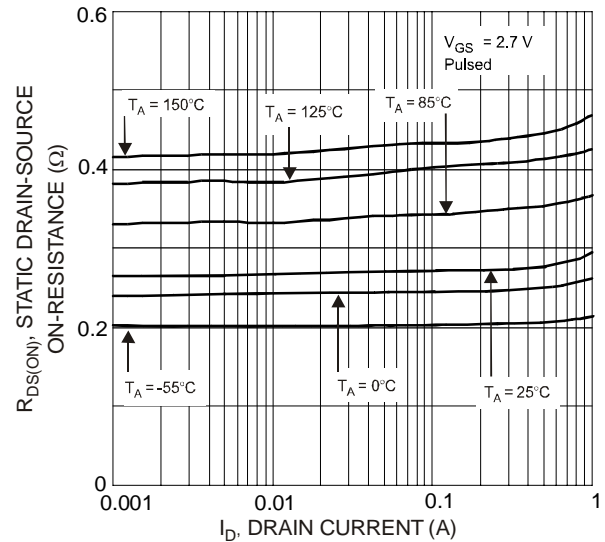


Fig. 4 Static Drain-Source On-State Resistance vs. Drain Current

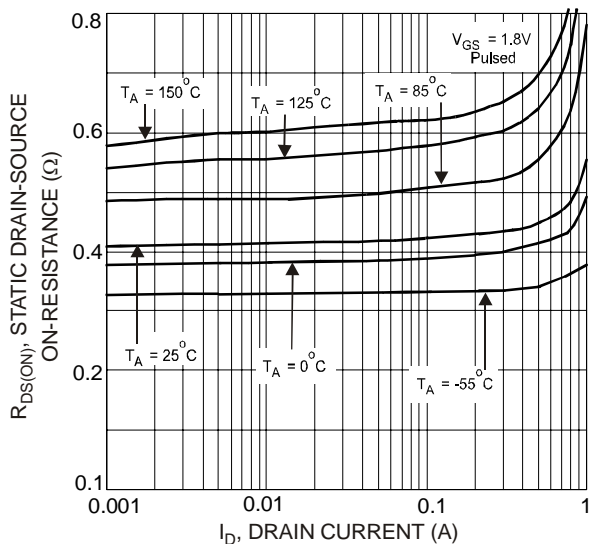


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

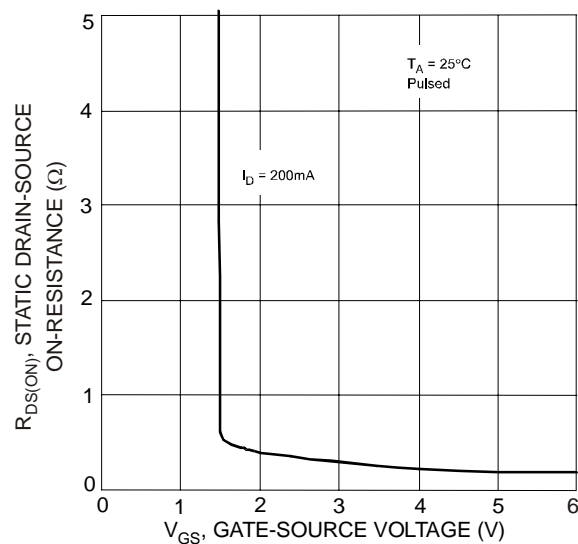


Fig. 6 Static Drain-Source, On-Resistance vs. Gate-Source Voltage

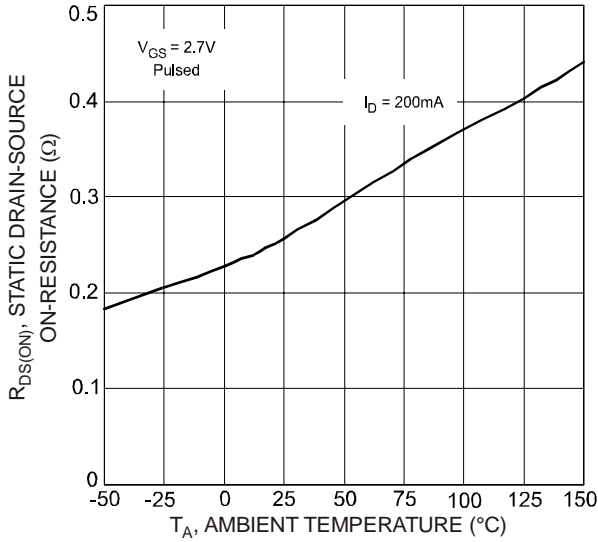


Fig. 7 Static Drain-Source, On-Resistance vs. Ambient Temperature

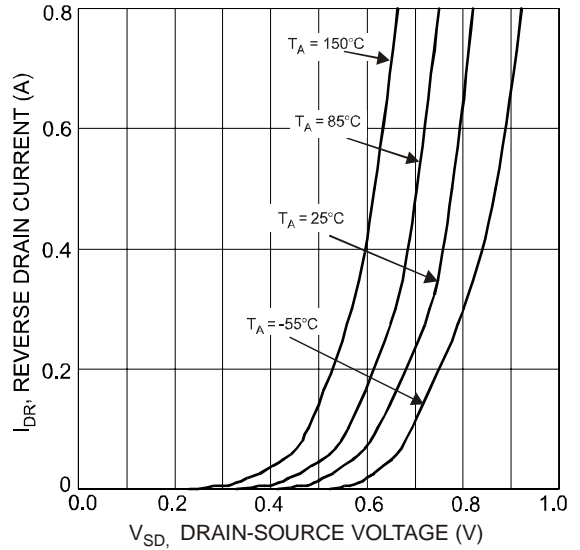


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

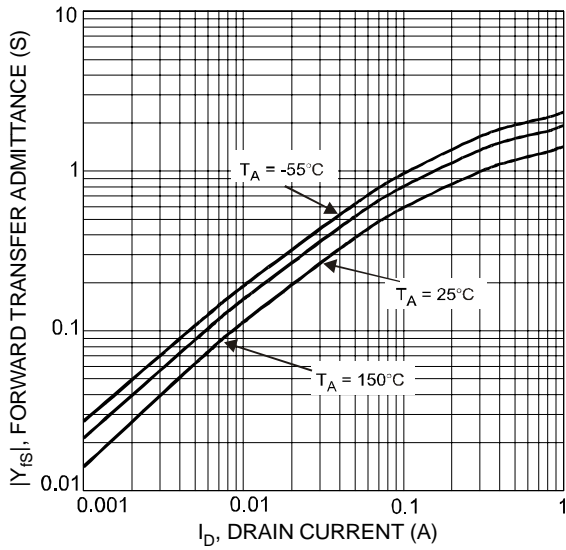


Fig. 9 Forward Transfer Admittance vs. Drain Current

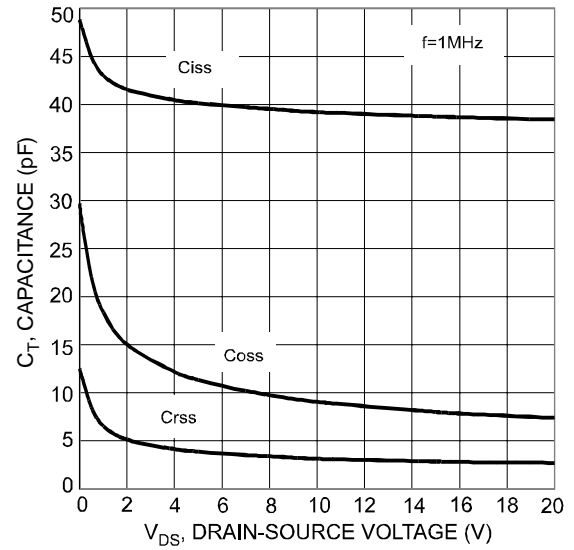


Fig. 10 Typical Capacitance

**Ordering Information** (Note 6)

Part Number	Case	Packaging
DMN2005DLP4K-7	DFN1310H4-6	3000/Tape & Reel

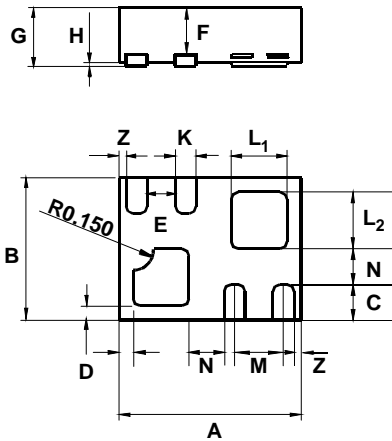
Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



DL = Product Type Marking Code

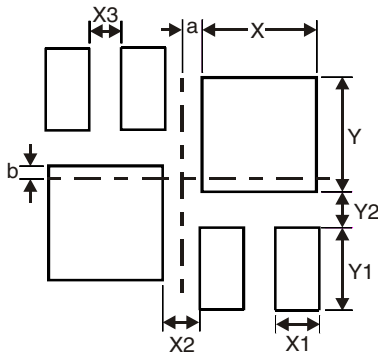
**Package Outline Dimensions**



DFN1310H4-6			
Dim	Min	Max	Typ
A	1.25	1.38	1.30
B	0.95	1.08	1.00
C	0.20	0.30	0.25
D*	—	—	0.10
E**	—	—	0.20
F	—	—	—
G	—	0.40	—
H	0	0.05	0.02
K*	0.10	0.20	0.15
L	0.30	0.50	0.40
L1**	—	—	—
L2**	—	—	—
M**	—	—	0.35
N*	—	—	0.25
Z**	—	—	0.05

All Dimensions in mm  
 \* Dimensions D, K, N Repeat 4x  
 \*\* Dimensions E, L1, L2, M, Z Repeat 2x

**Suggested Pad Layout**



Dimensions	Value (in mm)
X	0.52
Y	0.52
X1	0.20
Y1	0.375
X2	0.17
Y2	0.16
X3	0.15
a	0.09
b	0.06

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