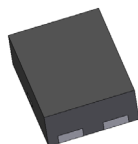
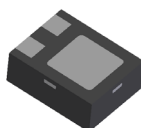


## Features

- P-Channel MOSFET
- Very 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)**
- **Qualified to AEC-Q101 Standards for High Reliability**

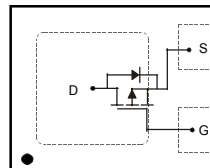


TOP VIEW



BOTTOM VIEW

DFN1411-3


TOP VIEW  
Internal Schematic

## Mechanical Data

- Case: DFN1411-3
- 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 lead frame. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.003 grams (approximate)

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

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V <sub>DSS</sub>	-20	V
Gate-Source Voltage	V <sub>GSS</sub>	±12	V
Continuous Drain Current (Note 1)	I <sub>D</sub>	-1.5 -1.2	A

T<sub>A</sub> = 25°C  
T<sub>A</sub> = 70°C

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

Characteristic	Symbol	Value	Units
Power Dissipation (Note 1)	P <sub>D</sub>	500	mW
Thermal Resistance, Junction to Ambient (Note 1)	R <sub>θJA</sub>	250	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 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 (Note 4)</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	-20	—	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	—	—	-1.0 -5.0	μA	T <sub>J</sub> = 25°C T <sub>J</sub> = 125°C V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±100	nA	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (Note 4)</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	-0.45	—	-1.0	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	—	92 134 180	150 200 240	mΩ	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -950mA
						V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -670mA
						V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -200mA
Forward Transconductance	g <sub>FS</sub>	—	3.1	—	S	V <sub>DS</sub> = -10V, I <sub>D</sub> = -810mA
Diode Forward Voltage (Note 4)	V <sub>SD</sub>	—	—	-0.9	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = -360mA
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	C <sub>iss</sub>	—	320	—	pF	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	—	80	—	pF	
Reverse Transfer Capacitance	C <sub>rss</sub>	—	60	—	pF	

- Notes:
1. Device mounted on FR-4 PCB with 1 inch square pads.
  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).
  4. Short duration pulse test used to minimize self-heating effect.

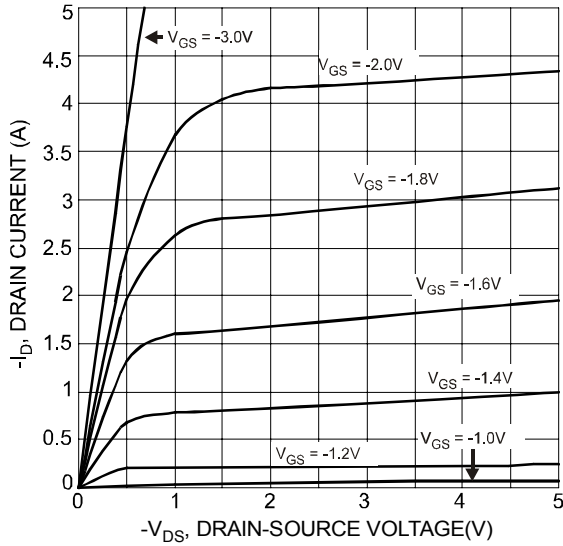


Fig. 1 Typical Output Characteristics

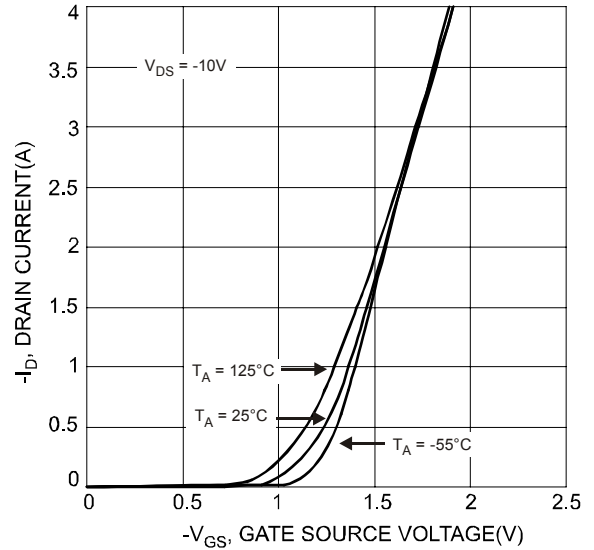


Fig. 2 Typical Transfer Characteristics

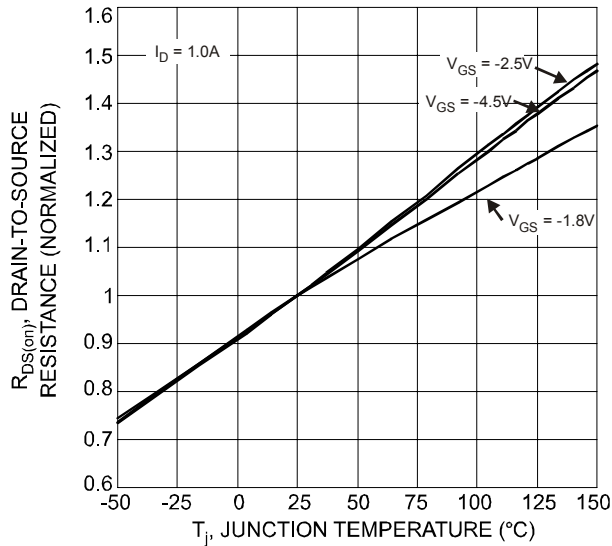


Fig. 3 On-Resistance Variation with Temperature

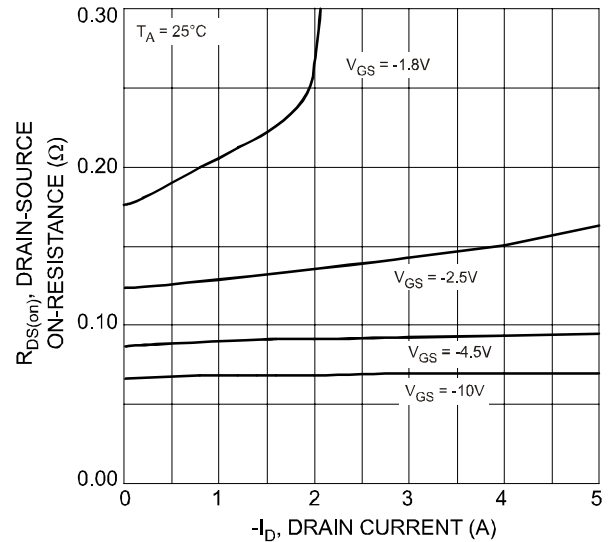


Fig. 4 On-Resistance vs. Drain Current and Gate Voltage

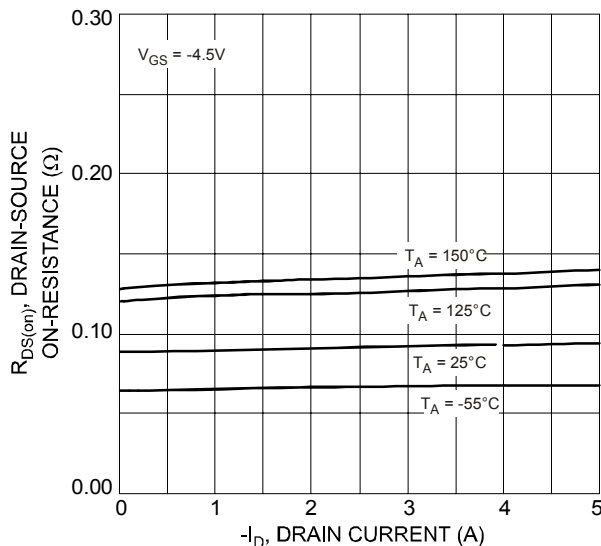


Fig. 5 Drain-Source On-Resistance vs. Drain Current and Temperature

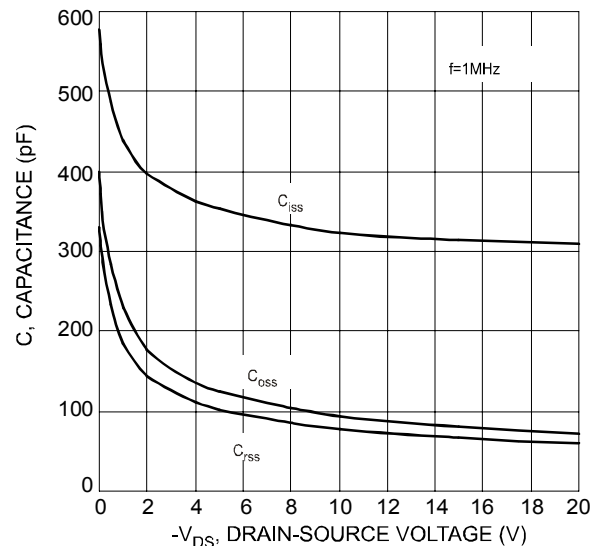


Fig. 6 Typical Capacitance

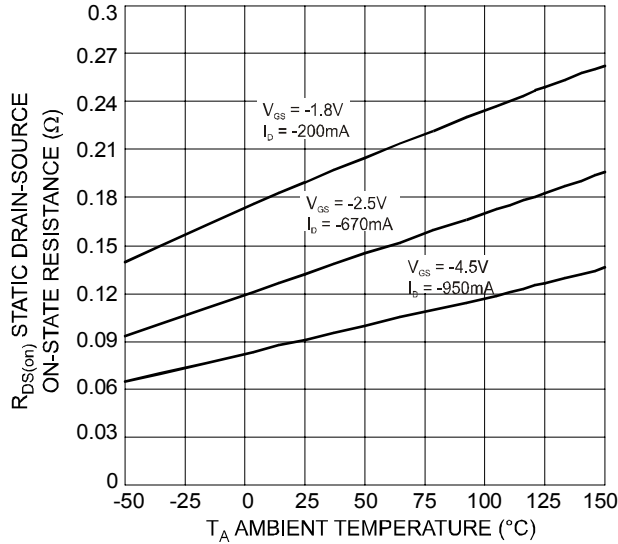


Fig. 7 Static Drain-Source On-State Resistance vs. Ambient Temperature

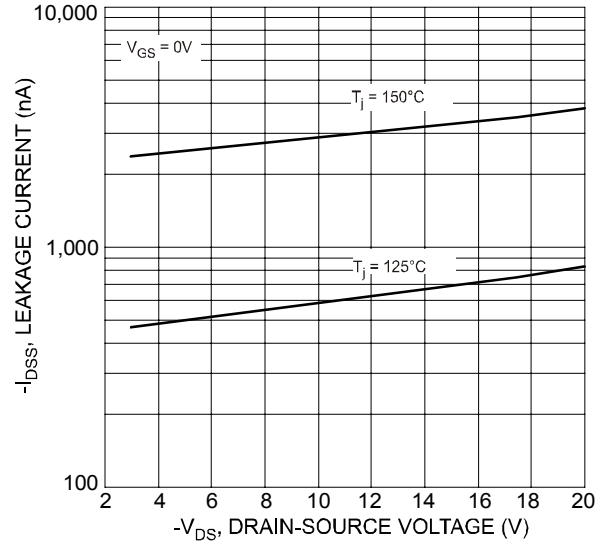


Fig. 8 Drain-Source Leakage Current vs. Voltage

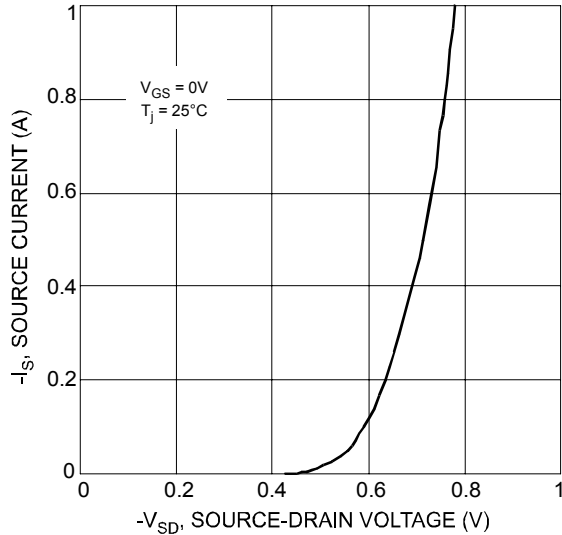


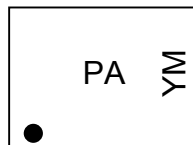
Fig. 9 Diode Forward Voltage vs. Current

## Ordering Information (Note 5)

Part Number	Case	Packaging
DMP2104LP-7	DFN1411-3	3000/Tape & Reel

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

## Marking Information



PA = Marking Code  
 YM = Date Code Marking  
 Y = Year ex: U = 2007  
 M = Month ex: 9 = September

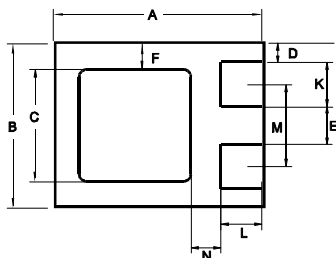
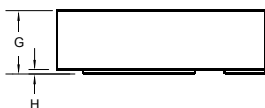
### Date Code Key

Year	2007	2008	2009	2010	2011	2012
Code	U	V	W	X	Y	Z

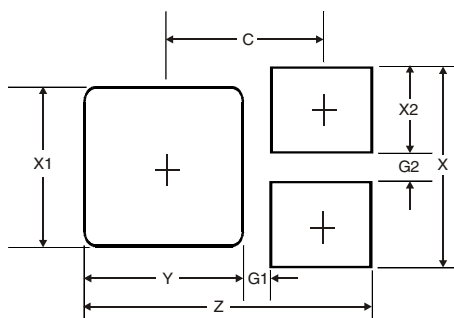
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

## Package Outline Dimensions



DFN1411-3			
Dim	Min	Max	Typ
A	1.35	1.48	1.40
B	1.05	1.18	1.10
C	0.65	0.85	0.75
D	—	—	0.125
E	—	—	0.25
F	—	—	0.175
G	0.47	0.53	0.50
H	0	0.05	0.02
K	0.25	0.35	0.30
L	0.22	0.33	0.275
M	—	—	0.55
N	—	—	0.20
All Dimensions in mm			

## Suggested Pad Layout



Dimensions	Value (in mm)
Z	1.38
G1	0.15
G2	0.15
X	0.95
X1	0.75
X2	0.40
Y	0.75
C	0.76

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