



DMP2104LP

### P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

### **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

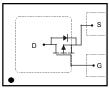




DFN1411-3

### **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)



TOP VIEW Internal Schematic

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

TOP VIEW

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) $ T_A = 25^{\circ}C $ $ T_A = 70^{\circ}C $	ln ln	-1.5 -1.2	А

## Thermal Characteristics @TA = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Power Dissipation (Note 1)	$P_{D}$	500	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{ hetaJA}$	250	°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-55 to +150	°C

### **Electrical Characteristics** @TA = 25°C unless otherwise specified

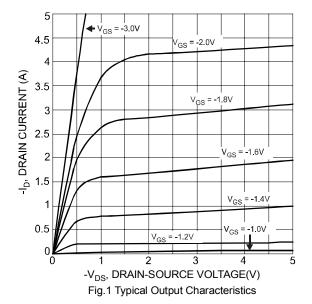
Characteristic			Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 4)							
Drain-Source Breakdown Voltage		$BV_{DSS}$	-20	_	_	V	$V_{GS} = 0V, I_D = -250\mu A$
Zero Gate Voltage Drain Current	T <sub>J</sub> = 25°C T <sub>J</sub> = 125°C	I <sub>DSS</sub>	_	_	-1.0 -5.0	μА	V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0V
Gate-Source Leakage		I <sub>GSS</sub>			±100	nA	$V_{GS} = \pm 12V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 4)							
Gate Threshold Voltage		$V_{GS(th)}$	-0.45	_	-1.0	V	$V_{DS} = V_{GS}, I_{D} = -250 \mu A$
Static Drain-Source On-Resistance		R <sub>DS (ON)</sub>	_	92 134 180	150 200 240	mΩ	$V_{GS}$ = -4.5V, $I_{D}$ = -950mA $V_{GS}$ = -2.5V, $I_{D}$ = -670mA $V_{GS}$ = -1.8V, $I_{D}$ = -200mA
Forward Transconductance		<b>g</b> FS	_	3.1	_	S	$V_{DS} = -10V, I_D = -810mA$
Diode Forward Voltage (Note 4)		$V_{SD}$	_	_	-0.9	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = -360mA
DYNAMIC CHARACTERISTICS					•	•	
Input Capacitance		C <sub>iss</sub>		320	_	pF	101/1/
Output Capacitance		Coss	_	80	_	pF	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V f = 1.0MHz
Reverse Transfer Capacitance		Crss	_	60	_	pF	1 - 1.0W112

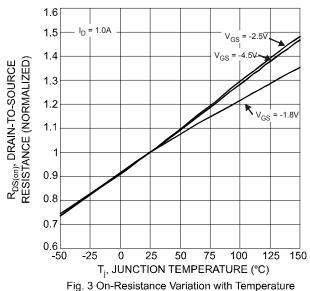
Notes:

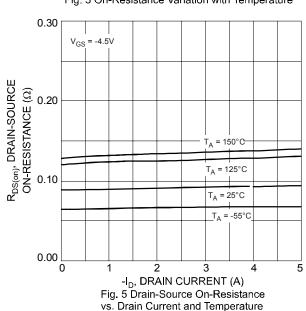
- 1. Device mounted on FR-4 PCB with 1 inch square pads.
- 2. No purposefully added lead.
- 3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.
- 4. Short duration pulse test used to minimize self-heating effect.

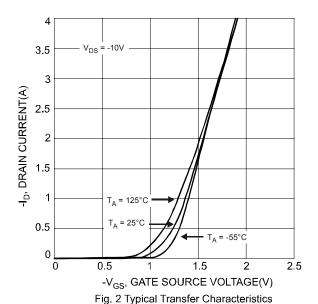
Downloaded from Elcodis.com electronic components distributor











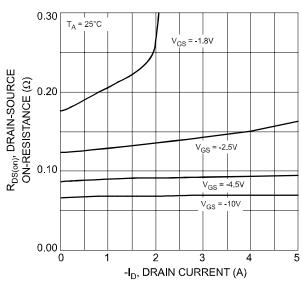
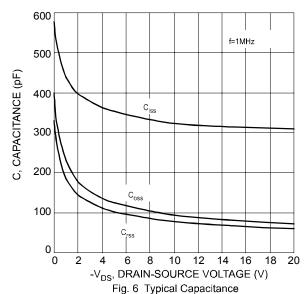


Fig. 4 On-Resistance vs. Drain Current and Gate Voltage





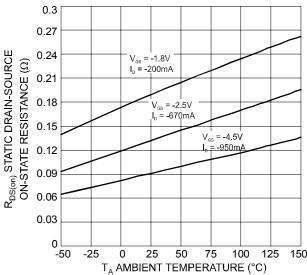
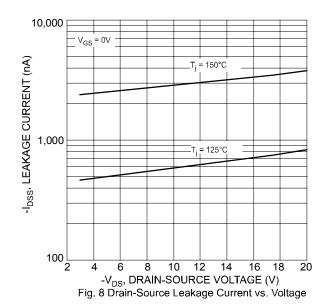
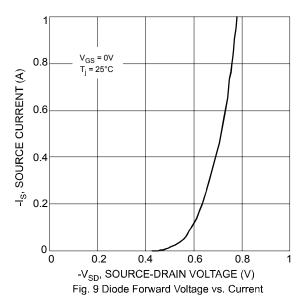


Fig. 7 Static Drain-Source On-State Resistance vs. Ambient Temperature





# 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

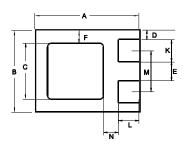
Date Code Key

Year	20	07	20	80	20	09	20	10	20	11	20	12
Code	Ų	J	\	/	٧	V		<	`	1	Z	7
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



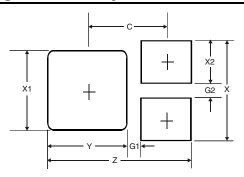
## **Package Outline Dimensions**





DFN1411-3						
Dim	Min	Max	Тур			
Α	1.35	1.48	1.40			
В	1.05	1.18	1.10			
С	0.65	0.85	0.75			
D	_	_	0.125			
Е	_	_	0.25			
F	_	_	0.175			
G	0.47	0.53	0.50			
Н	0	0.05	0.02			
K	0.25	0.35	0.30			
L	0.22	0.33	0.275			
М			0.55			
N	_	_	0.20			
All D	All Dimensions in mm					

# **Suggested Pad Layout**



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

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