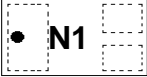

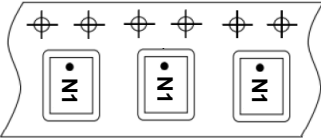
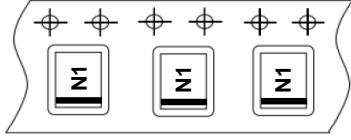

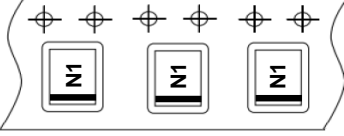


## Marking Information

<p><b>DMP210DUFB4-7</b></p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Top View Dot Denotes Drain Side</p> </div> <div style="text-align: center;"> <p>From date code 1527 (YYWW), this changes to:</p>  <p>Top View Bar Denotes Gate and Source Side</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;">   </div>
<p><b>DMP210DUFB4-7B</b></p>	<div style="text-align: center; margin-bottom: 10px;">  <p>Top View Bar Denotes Gate and Source Side</p> </div> <div style="display: flex; justify-content: space-between; align-items: center;">  <div> <p>N1 = Part Marking Code</p> </div> </div>

**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
Continuous Drain Current (Note 5) V <sub>GS</sub> = -4.5V	Steady State	T <sub>A</sub> = +25°C T <sub>A</sub> = +70°C	I <sub>D</sub>	-200 -160	mA
Continuous Drain Current (Note 5) V <sub>GS</sub> = -1.8V	Steady State	T <sub>A</sub> = +25°C T <sub>A</sub> = +70°C	I <sub>D</sub>	-140 -110	mA
Pulsed Drain Current t <sub>P</sub> = 10μs			I <sub>DM</sub>	-600	mA

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P <sub>D</sub>	350	mW
Thermal Resistance, Junction to Ambient (Note 5)	R <sub>θJA</sub>	357	°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
OFF CHARACTERISTICS (Note 6)						
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>	—	—	-100	nA	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V
		—	—	-50	nA	V <sub>DS</sub> = -5.0V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±100	nA	V <sub>GS</sub> = ±5.0V, V <sub>DS</sub> = 0V
				±1	μA	V <sub>GS</sub> = ±8.0V, V <sub>DS</sub> = 0V
				±10	μA	V <sub>GS</sub> = ±10.0V, V <sub>DS</sub> = 0V
ON CHARACTERISTICS (Note 6)						
Gate Threshold Voltage @T <sub>J</sub> = +25°C	V <sub>GS(TH)</sub>	-0.5	—	-1.0	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA
Gate Threshold Voltage (Note 7) @T <sub>J</sub> = 0°C @T <sub>J</sub> = +85°C @T <sub>J</sub> = +100°C	V <sub>GS(TH)</sub>	-0.55	—	-1.05	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA
		-0.40	—	-0.90		
		-0.35	—	-0.85		
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	—	—	5	Ω	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -100mA
		—	—	7		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -50mA
		—	—	10		V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -20mA
		—	—	15		V <sub>GS</sub> = -1.5V, I <sub>D</sub> = -10mA
		—	20	—		V <sub>GS</sub> = -1.2V, I <sub>D</sub> = -1mA
Forward Transfer Admittance	Y <sub>FS</sub>	—	200	—	mS	V <sub>DS</sub> = -10V, I <sub>D</sub> = -200mA
Diode Forward Voltage (Note 5)	V <sub>SD</sub>	-0.5	—	-1.2	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = -115mA
DYNAMIC CHARACTERISTICS (Note 7)						
Input Capacitance	C <sub>iss</sub>	—	13.72	175	pF	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	—	4.01	30	pF	
Reverse Transfer Capacitance	C <sub>rss</sub>	—	2.34	20	pF	
SWITCHING CHARACTERISTICS (Note 7)						
Turn-On Delay Time	t <sub>D(ON)</sub>	—	7.7	—	ns	V <sub>GS</sub> = -4.5V, V <sub>DD</sub> = -15V I <sub>D</sub> = -180mA, R <sub>G</sub> = 2.0Ω
Rise Time	t <sub>r</sub>	—	19.3	—		
Turn-Off Delay Time	t <sub>D(OFF)</sub>	—	25.9	—		
Fall Time	t <sub>f</sub>	—	31.5	—		

- Notes:
5. Device mounted on FR-4 PC board, with minimum recommended pad layout, single sided.
  6. Short duration pulse test used to minimize self-heating effect.
  7. Guaranteed by design. Not subject to production testing.

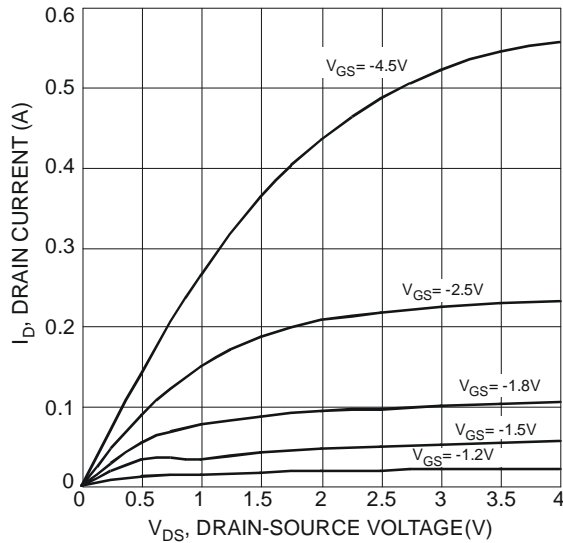


Fig. 1 Typical Output Characteristics

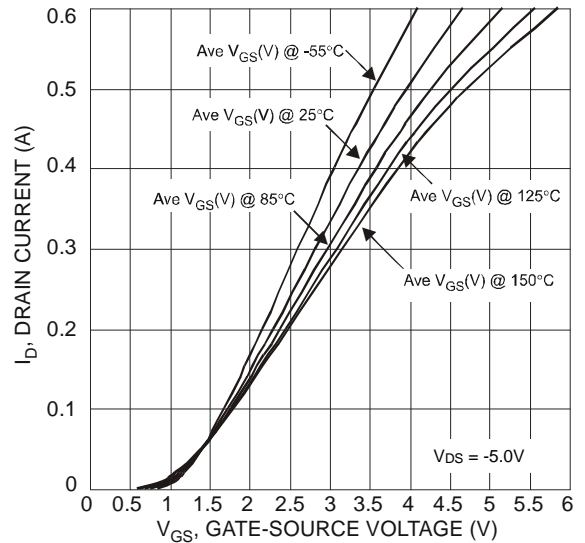


Fig. 2 Typical Transfer Characteristics

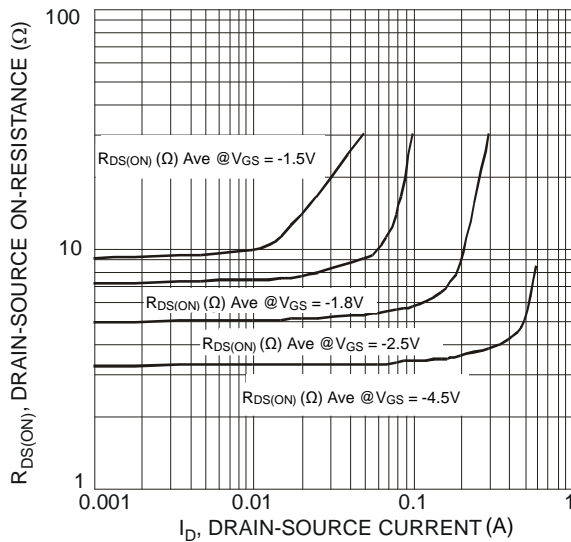


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

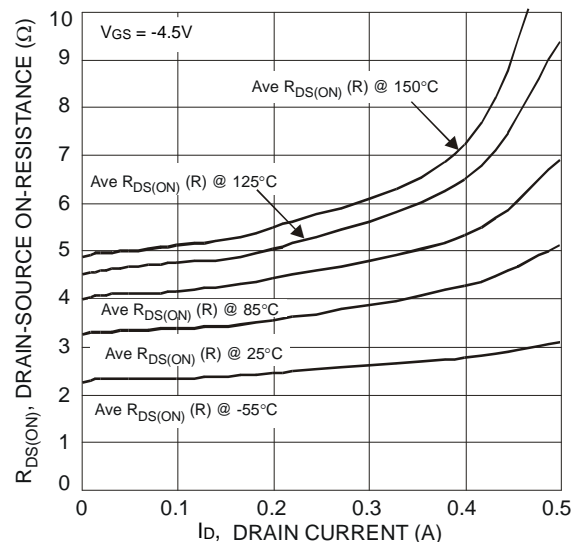


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

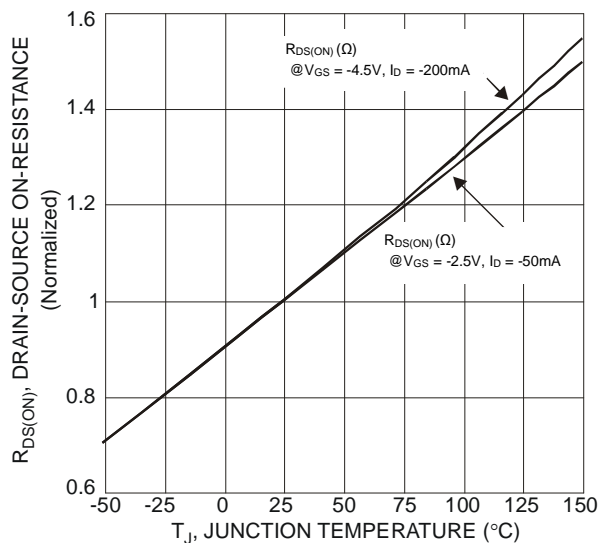


Fig. 5 On-Resistance Variation with Temperature

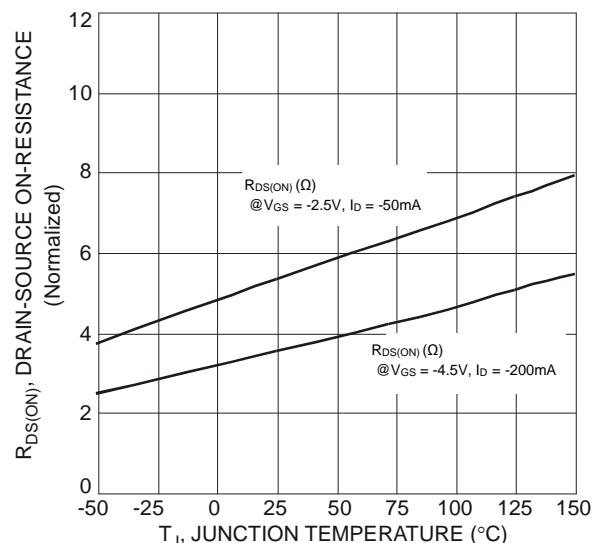


Fig. 6 On-Resistance vs. Temperature

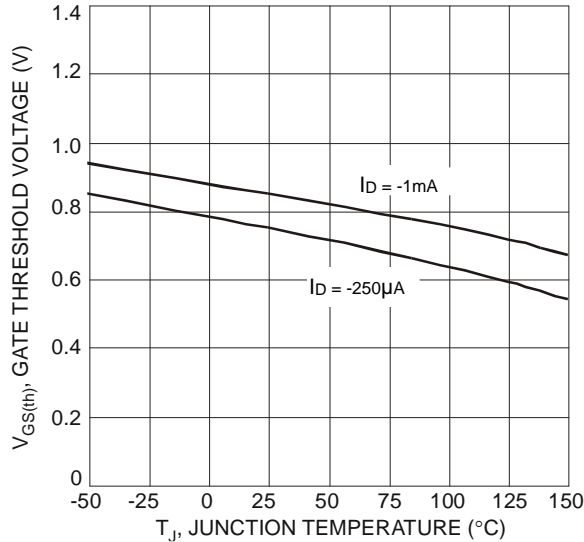


Fig. 7 Gate Threshold Variation vs. Junction Temperature

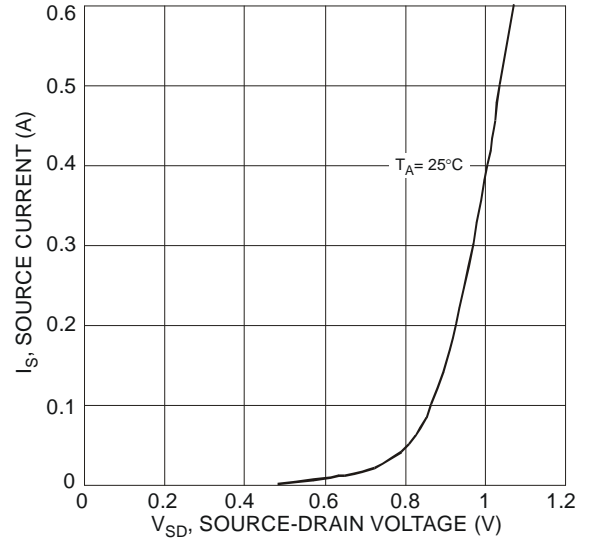


Fig. 8 Diode Forward Voltage vs. Current

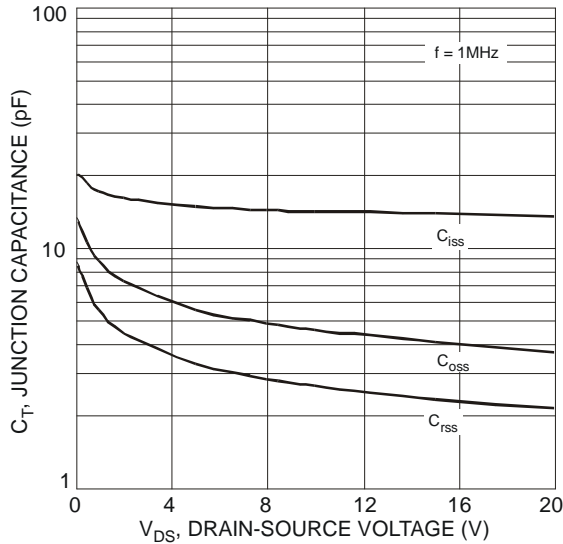


Fig. 9 Typical Junction Capacitance

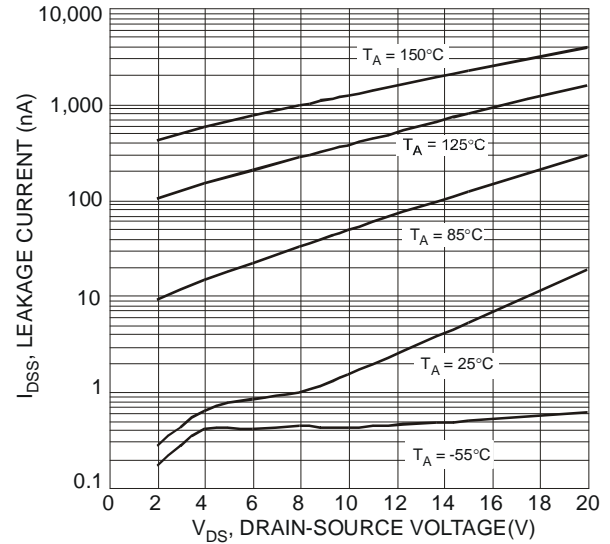


Fig. 10 Typical Drain-Source Leakage Current vs. Voltage

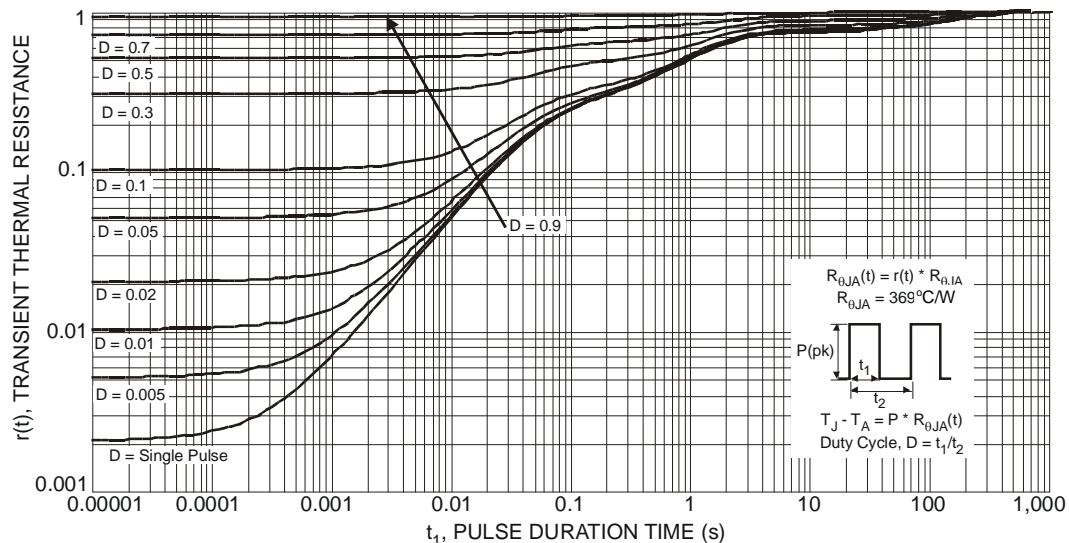
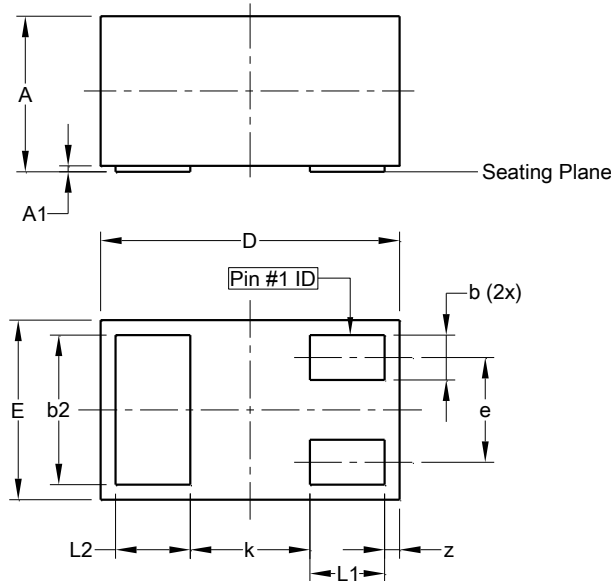


Fig. 11 Transient Thermal Response

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**X2-DFN1006-3**

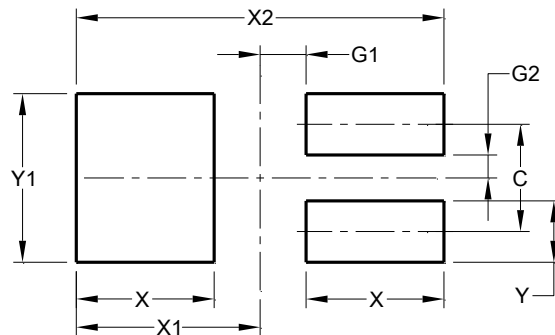


X2-DFN1006-3			
Dim	Min	Max	Typ
A	—	0.40	—
A1	0.00	0.05	0.03
b	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.05	1.00
E	0.55	0.65	0.60
e	—	—	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
k	—	—	0.40
z	0.02	0.08	0.05
All Dimensions in mm			

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**X2-DFN1006-3**



Dimensions	Value (in mm)
C	0.350
G1	0.150
G2	0.075
X	0.450
X1	0.600
X2	1.200
Y	0.200
Y1	0.550

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