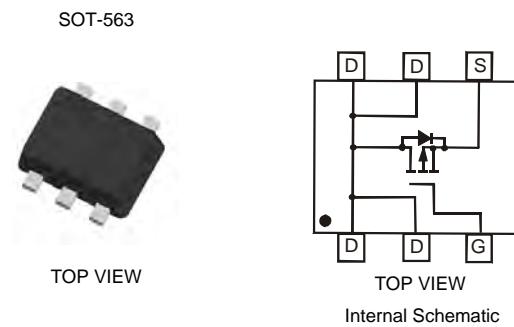


Features

- 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 1)**
- "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: SOT-563
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals Connections: See Diagram
- Terminals: Finish - Matte Tin annealed over Copper lead frame. Solderable per MIL-STD-202, Method 208
- Weight: 0.006 grams (approximate)



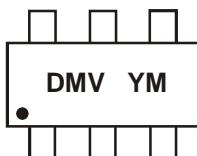
Ordering Information (Note 3)

Part Number	Case	Packaging
DMP2104V-7	SOT-563	3000/Tape & Reel

Notes:

1. No purposefully added lead.
2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
3. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



DMV = Marking Code
 YM = Date Code Marking
 Y = Year (ex: T = 2006)
 M = Month (ex: 9 = September)

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012					
Code	T	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

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V_{DSS}	-20	V
Gate-Source Voltage			V_{GSS}	± 12	V
Continuous Drain Current (Note 4)	Steady State	$T_A = 25^\circ\text{C}$ $T_A = 70^\circ\text{C}$	I_D	-860 -690	mA
Continuous Drain Current (Note 4)	$t \leq 5\text{s}$	$T_A = 25^\circ\text{C}$ $T_A = 70^\circ\text{C}$	I_D	-950 -760	mA

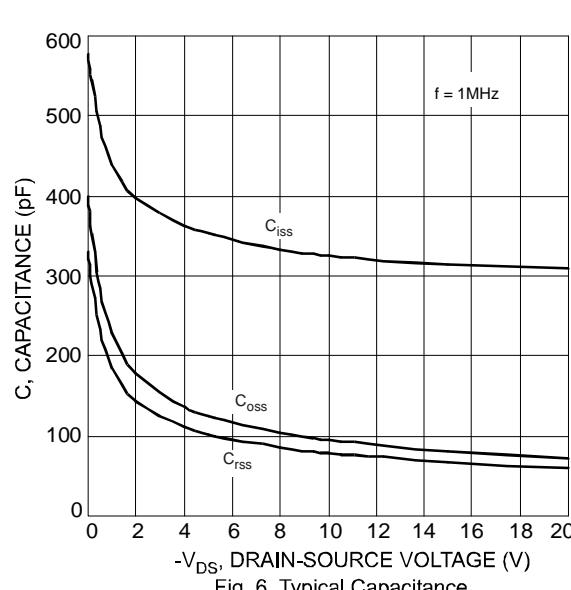
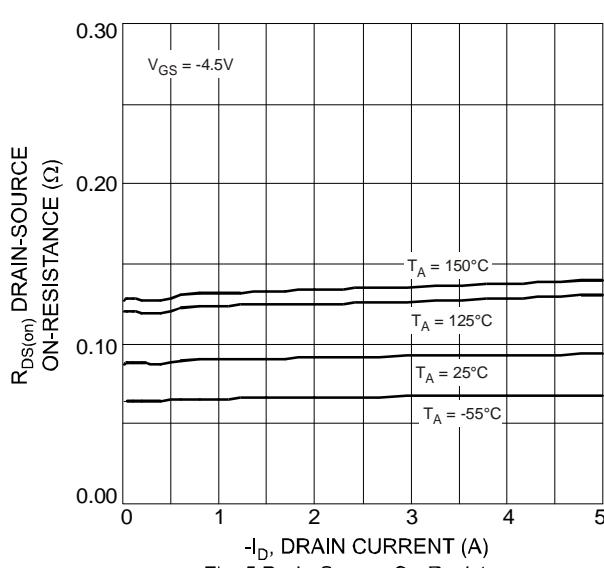
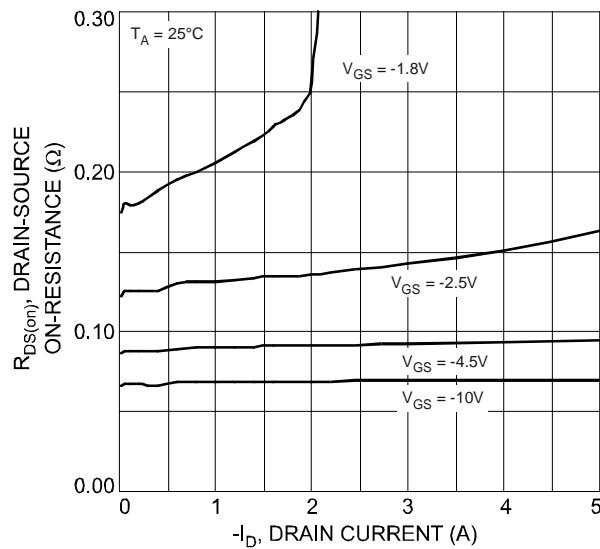
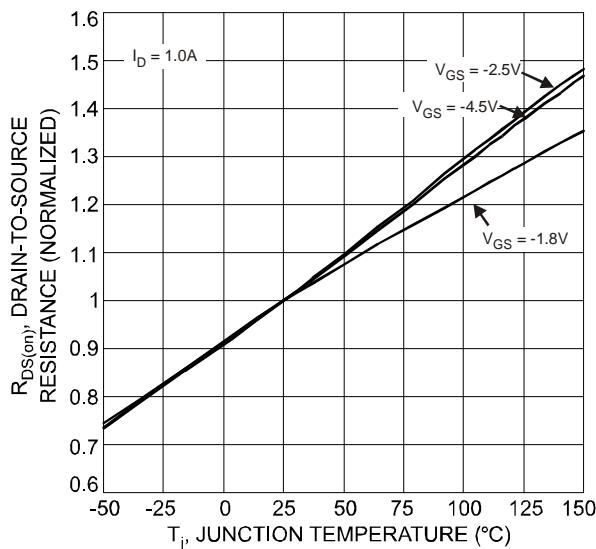
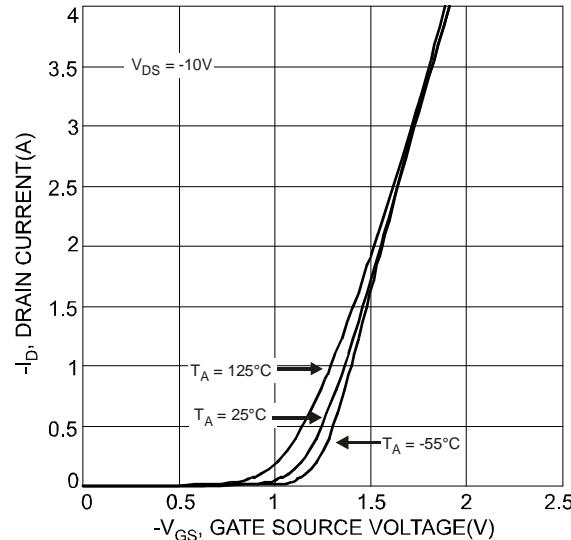
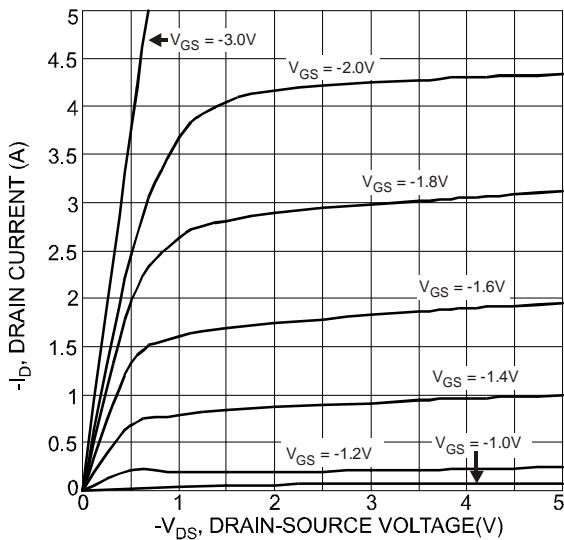
Thermal Characteristics

Characteristic		Symbol	Value	Units
Power Dissipation (Note 4)	Steady State	P_D	170	mW
Power Dissipation (Note 4)	$t \leq 5\text{s}$	P_D	210	mW
Pulsed Drain Current	$t_p = 10\mu\text{s}$	I_{DM}	-4.0	A
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)						
Drain-Source Breakdown Voltage	BV_{DSS}	-20	—	—	V	$V_{GS} = 0\text{V}, I_D = -250\mu\text{A}$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	-1.0 -5.0	μA	$V_{DS} = -20\text{V}, V_{GS} = 0\text{V}$
Gate-Source Leakage	I_{GSS}	—	—	± 100	nA	$V_{GS} = \pm 12\text{V}, V_{DS} = 0\text{V}$
ON CHARACTERISTICS (Note 5)						
Gate Threshold Voltage	$V_{GS(\text{th})}$	-0.45	—	-1.0	V	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$
Static Drain-Source On-Resistance	$R_{DS(\text{ON})}$	—	92 134 180	150 200 240	$\text{m}\Omega$	$V_{GS} = -4.5\text{V}, I_D = -950\text{mA}$ $V_{GS} = -2.5\text{V}, I_D = -670\text{mA}$ $V_{GS} = -1.8\text{V}, I_D = -200\text{mA}$
Forward Transconductance	g_{FS}	—	3.1	—	S	$V_{DS} = -10\text{V}, I_D = -810\text{mA}$
Diode Forward Voltage (Note 5)	V_{SD}	—	—	-0.9	V	$V_{GS} = 0\text{V}, I_S = -360\text{mA}$
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	—	320	—	pF	$V_{DS} = -16\text{V}, V_{GS} = 0\text{V}$ $f = 1.0\text{MHz}$
Output Capacitance	C_{oss}	—	80	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	60	—	pF	

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



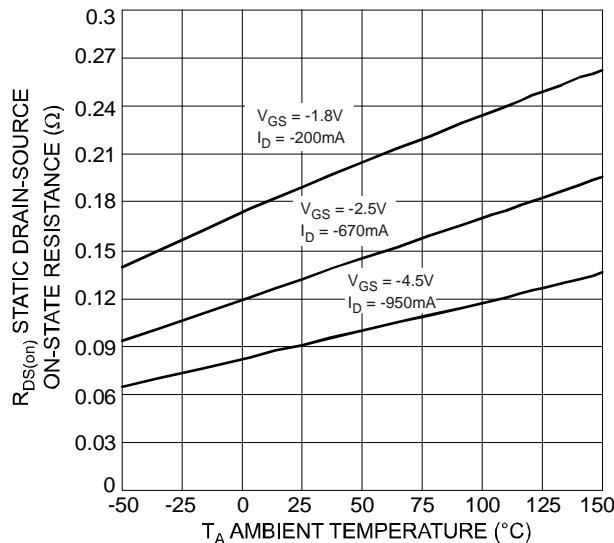


Fig. 7 Static Drain-Source On-State Resistance vs. Ambient Temperature

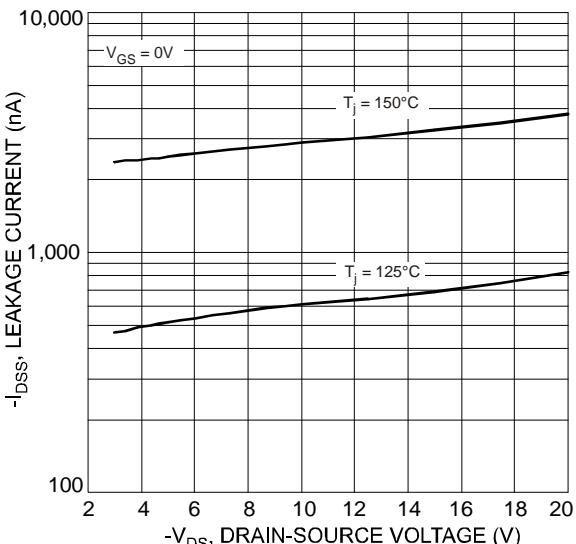


Fig. 8 Drain-Source Leakage Current vs. Voltage

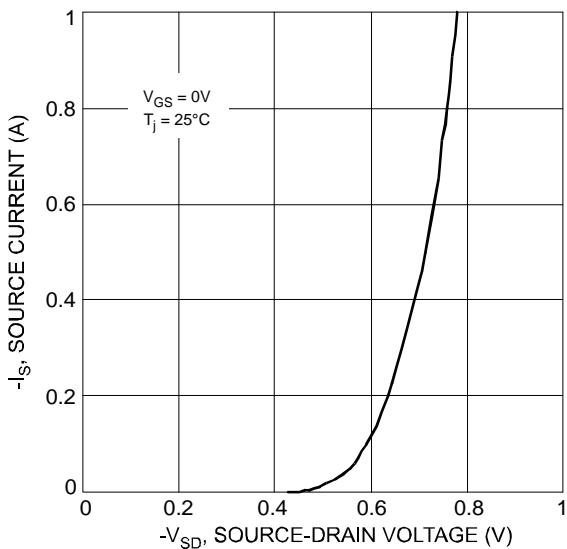


Fig. 9 Diode Forward Voltage vs. Current

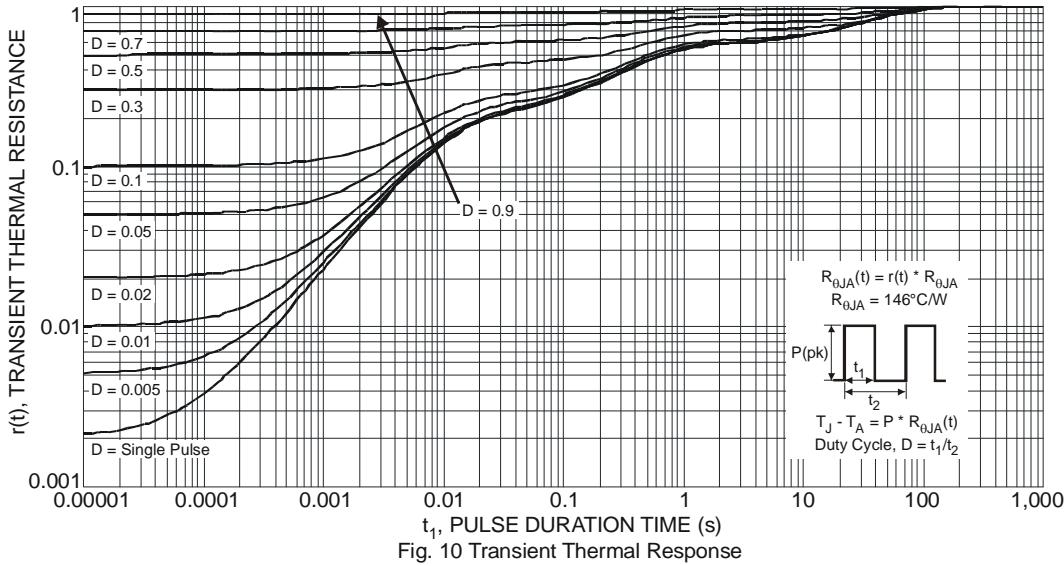
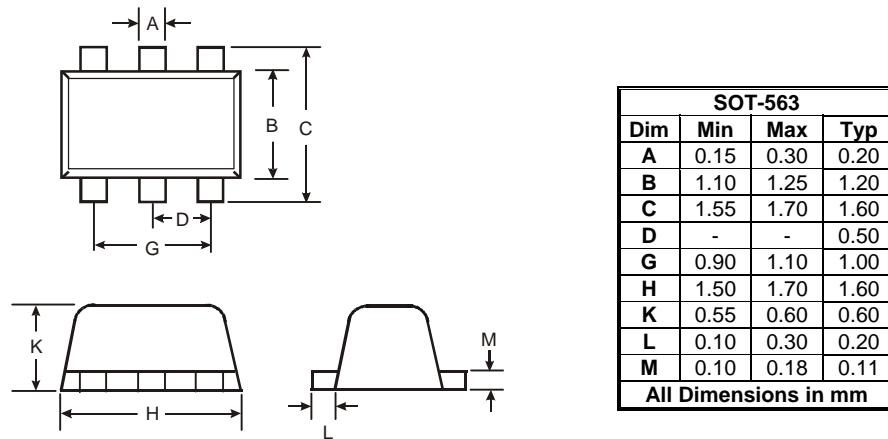
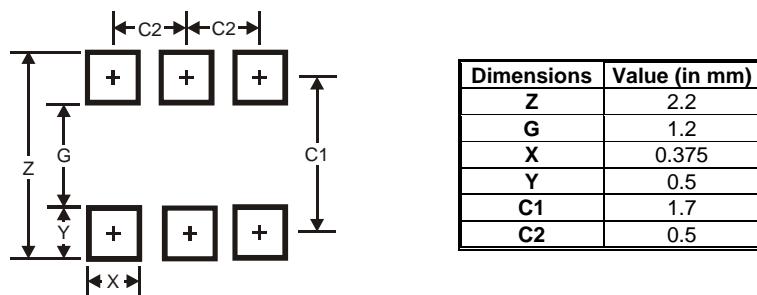


Fig. 10 Transient Thermal Response

Package Outline Dimensions



Suggested Pad Layout



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2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

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