Features

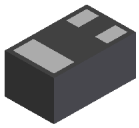
- N-Channel MOSFET
- Low On-Resistance
- Very Low Gate Threshold Voltage, 1.2V max
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- Ultra-Small Surface Mount Package
- ESD Protected Gate
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

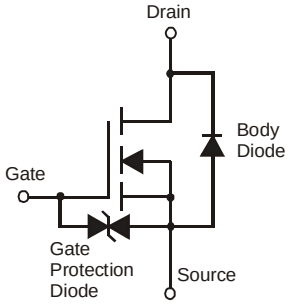
- Case: X2-DFN1006-3
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish – NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208 e4
- Weight: 0.001 grams (approximate)

ESD PROTECTED

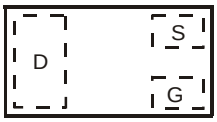
X2-DFN1006-3



Bottom View



Equivalent Circuit



Top View
Pin-Out

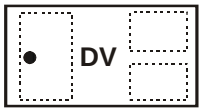
Ordering Information (Note 4)

Part Number	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
DMN32D2LFB4-7	DV	7	8	3000
DMN32D2LFB4-7B	DV	7	8	10,000

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at http://www.diodes.com.

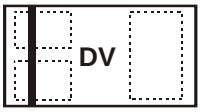
Marking Information

DMN32D2LFB4-7



Top View
Dot Denotes
Drain Side

DMN32D2LFB4-7B



Top View
Bar Denotes Gate
and Source Side

DV = Product Type Marking Code

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Drain Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±10	V
Drain Current (Note 5)	I_D	300	mA

Thermal Characteristics @T_A = 25°C unless otherwise specified

Total Power Dissipation (Note 5) @T_A = 25°C	P_D	350	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	357	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)							
Drain-Source Breakdown Voltage		BV_{DSS}	30	—	—	V	V_{GS} = 0V, I_D = 10μA
Zero Gate Voltage Drain Current	@ T_C = 25°C	I_{DSS}	—	—	1	μA	V_{DS} = 30V, V_{GS} = 0V
Gate-Body Leakage		I_{GSS}	—	—	±10 ±500	μA nA	V_{GS} = ±10V, V_{DS} = 0V V_{GS} = ±5V, V_{DS} = 0V
ON CHARACTERISTICS (Note 6)							
Gate Threshold Voltage		$V_{GS(th)}$	0.6	—	1.2	V	V_{DS} = V_{GS}, I_D = 250μA
Static Drain-Source On-Resistance		$R_{DS\ (ON)}$	— — —	— — —	2.2 1.5 1.2	Ω	V_{GS} = 1.8V, I_D = 20mA V_{GS} = 2.5V, I_D = 20mA V_{GS} = 4.0V, I_D = 100mA
Forward Transconductance		$\|Y_{fs}\|$	100	—	—	mS	V_{DS} =10V, I_D = 0.1A
Source-Drain Diode Forward Voltage		V_{SD}	0.5	—	1.4	V	V_{GS} = 0V, I_S = 115mA
DYNAMIC CHARACTERISTICS							
Input Capacitance		C_{iss}	—	39	—	pF	V_{DS} = 3V, V_{GS} = 0V f = 1.0MHz
Output Capacitance		C_{oss}	—	10	—	pF	
Reverse Transfer Capacitance		C_{rss}	—	3.6	—	pF	
Switching Time	Turn-on Time	t_{on}	—	11	—	nS	V_{DD} = 5V, I_D = 10 mA, V_{GS} = 0-5V
	Turn-off Time	t_{off}	—	51	—	nS	

Notes: 5. Device mounted on FR-4 PCB, pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com.
6. Short duration pulse test used to minimize self-heating effect.

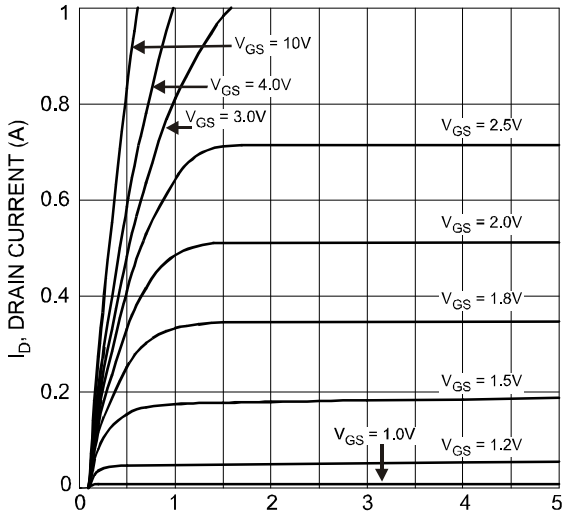


Fig. 1 Typical Output Characteristics

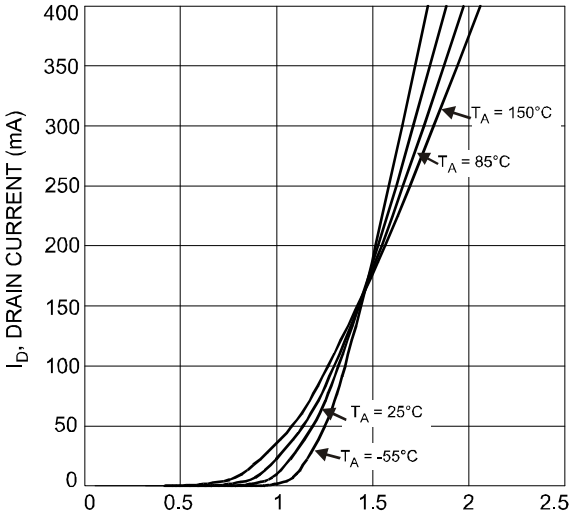


Fig. 2 Typical Transfer Characteristics

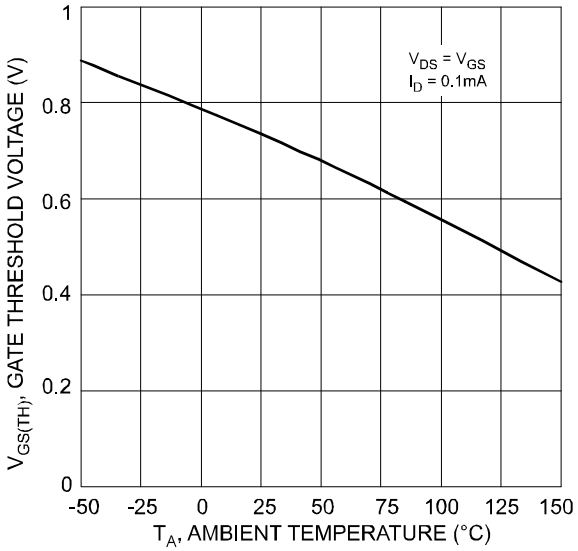


Fig. 3 Gate Threshold Voltage vs. Ambient Temperature

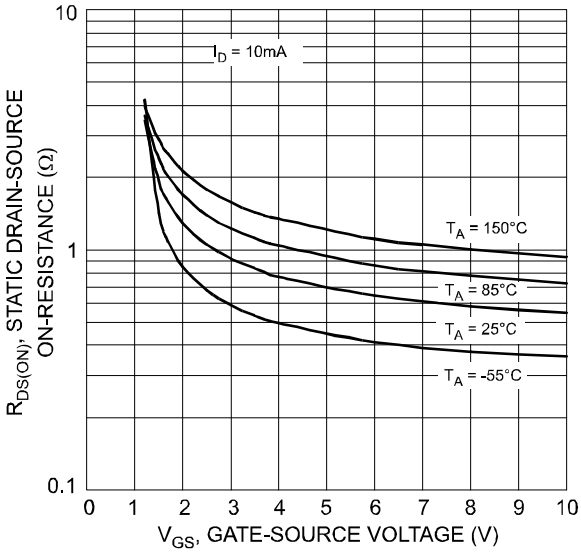


Fig. 4 Static Drain-Source On-Resistance vs. Gate-Source Voltage

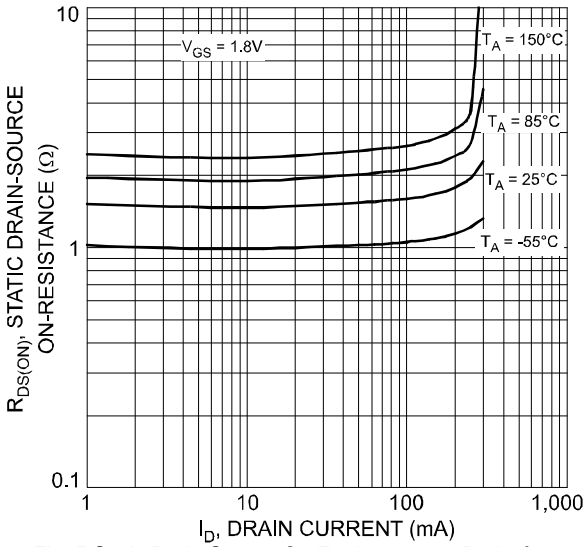


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

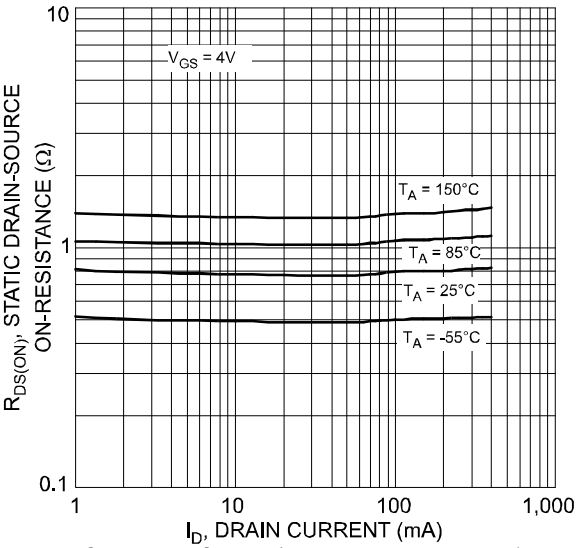


Fig. 6 Static Drain-Source On-Resistance vs. Drain Current

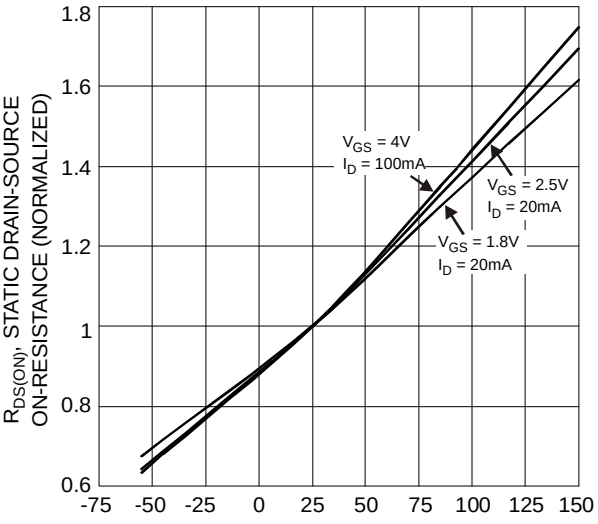


Fig. 7 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

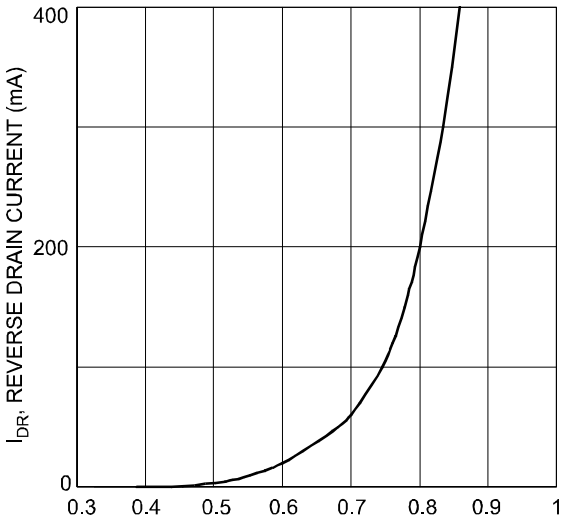


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

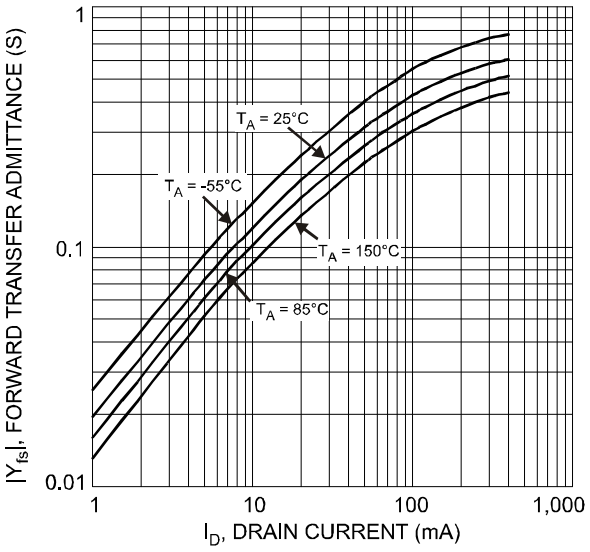


Fig. 9 Forward Transfer Admittance vs. Drain Current

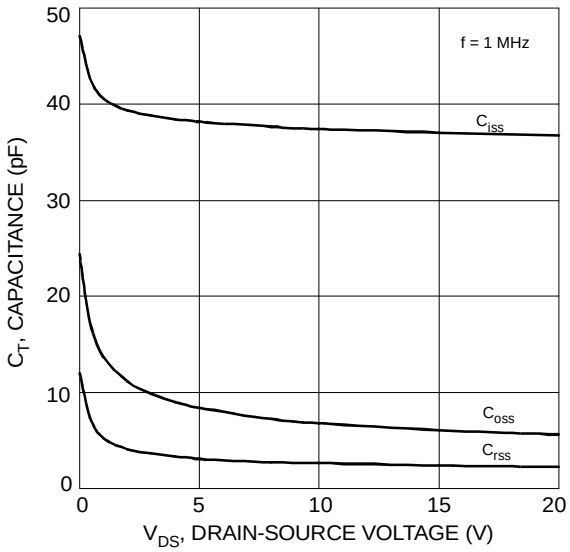
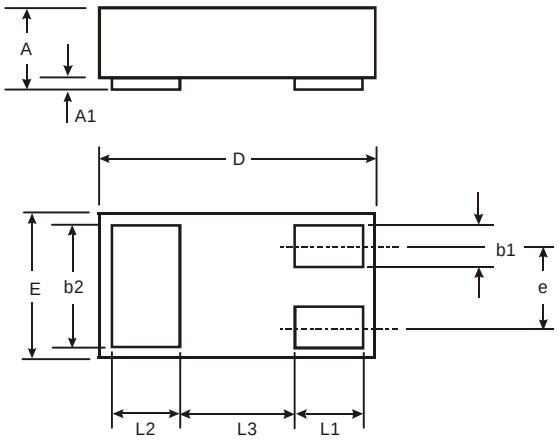


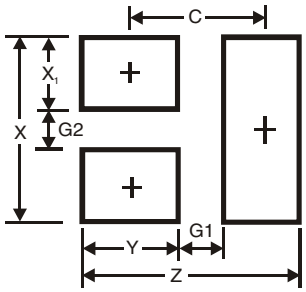
Fig. 10 Typical Capacitance

Package Outline Dimensions



X2-DFN1006-3			
Dim	**Min**	**Max**	**Typ**
A	—	0.40	—
A1	0	0.05	0.02
b1	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	—	—	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	—	—	0.40
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	1.1
G1	0.3
G2	0.2
X	0.7
X1	0.25
Y	0.4
C	0.7

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