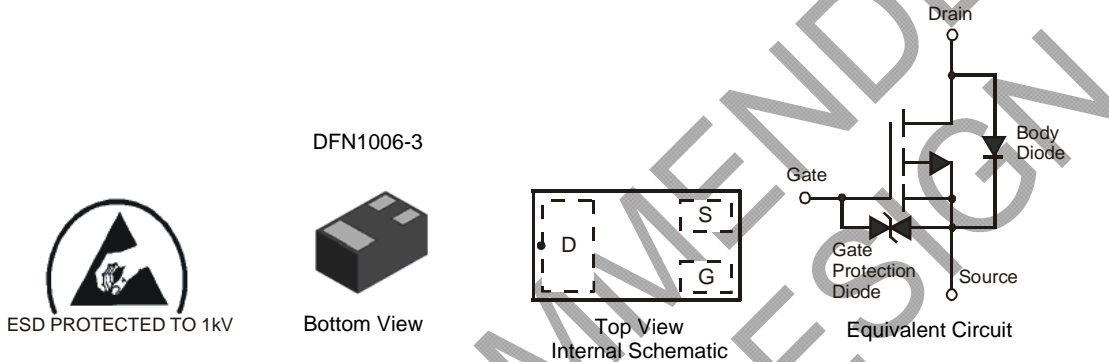


Features

- Low On-Resistance:
 - $R_{DS(ON)} \leq 6\Omega$ @ $V_{GS} = -4.0V$
 - $R_{DS(ON)} \leq 8\Omega$ @ $V_{GS} = -2.5V$
- Very Low Gate Threshold Voltage, $\leq 1.0V$
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- **ESD Protected Gate, 1KV**
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

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

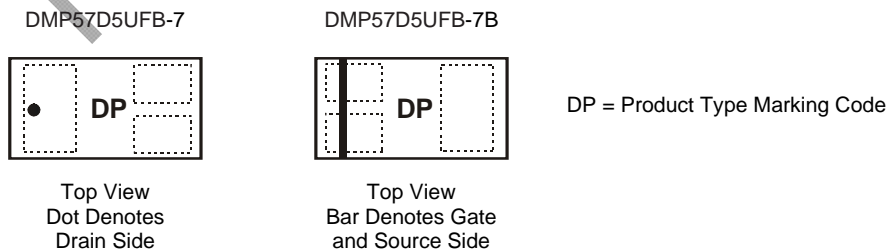


Ordering Information (Note 3)

Part Number	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
DMP57D5UFB-7	DP	7	8	3000
DMP57D5UFB-7B	DP	7	8	10,000

- 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



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

Characteristic		Symbol	Value	Units
Drain-Source Voltage		V_{DSS}	-50	V
Gate-Source Voltage		V_{GSS}	± 8	V
Drain Current (Note 4)	Steady	I_D	-200	mA
Pulsed Drain Current (Note 5)		I_{DM}	-700	mA

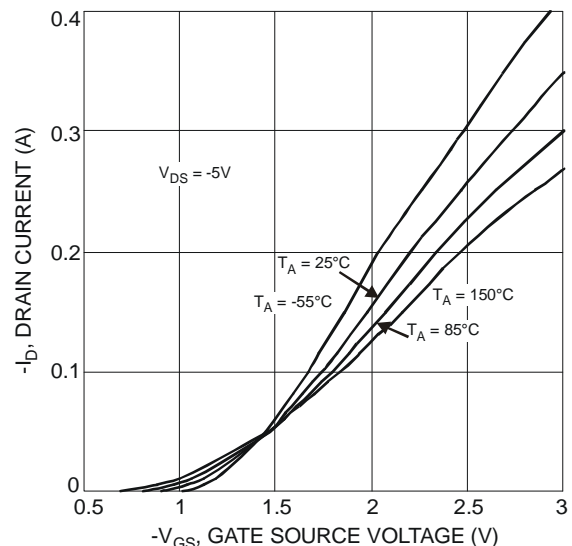
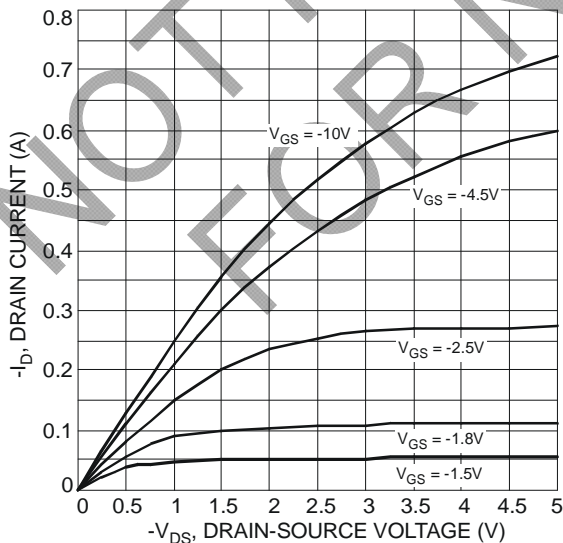
Thermal Characteristics

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 4)	P_D	425	mW
Thermal Resistance, Junction to Ambient @ $T_A = 25^\circ\text{C}$ (Note 4)	$R_{\theta JA}$	294	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)						
Drain-Source Breakdown Voltage	BV_{DSS}	-50	—	—	V	$V_{GS} = 0V, I_D = -250\mu\text{A}$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	-10	μA	$V_{DS} = -50V, V_{GS} = 0V$
Gate-Source Leakage	I_{GSS}	—	—	± 500	nA	$V_{GS} = \pm 8V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 6)						
Gate Threshold Voltage	$V_{GS(th)}$	-0.7	—	-1.0	V	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	4.6 6	6 8	Ω	$V_{GS} = -4.0V, I_D = -100\text{mA}$ $V_{GS} = -2.5V, I_D = -80\text{mA}$
Forward Transfer Admittance	$ Y_{fs} $	100	—	—	mS	$V_{DS} = -5V, I_D = -100\text{mA}$
Diode Forward Voltage (Note 6)	V_{SD}	—	—	-1.2	V	$V_{GS} = 0V, I_S = -100\text{mA}$
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	—	29	—	pF	
Output Capacitance	C_{oss}	—	7.3	—	pF	$V_{DS} = -4V, V_{GS} = 0V$
Reverse Transfer Capacitance	C_{rss}	—	2.5	—	pF	$f = 1.0\text{MHz}$

- Notes:
- Device mounted on FR-4 PCB. $t \leq 5$ sec.
 - Pulse width $\leq 10\mu\text{s}$, Duty Cycle $\leq 1\%$.
 - Short duration pulse test used to minimize self-heating effect.



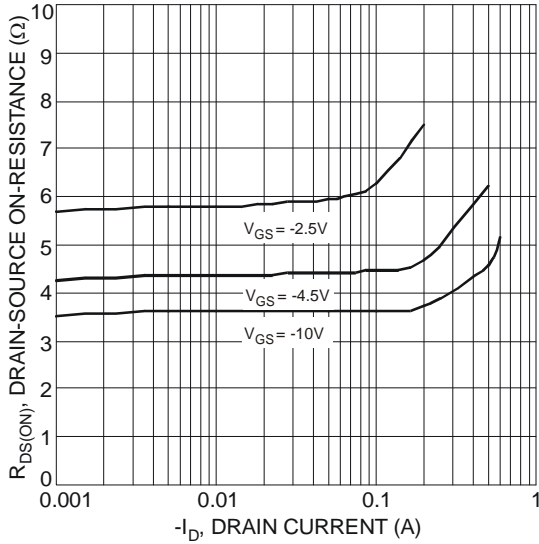


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

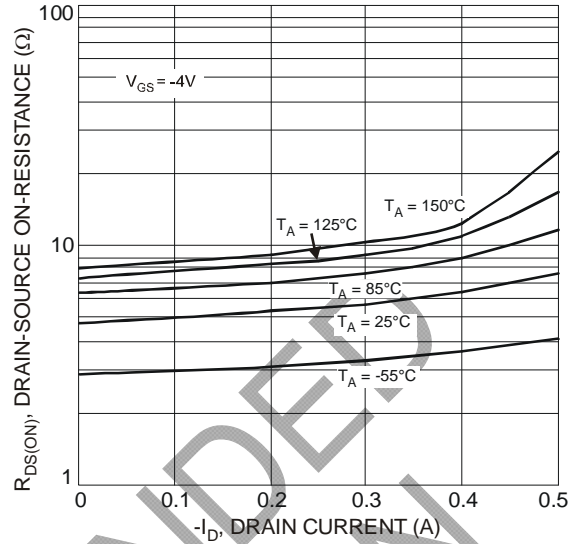


Fig. 4 Typical Drain-Source On-Resistance vs. Drain Current and Temperature

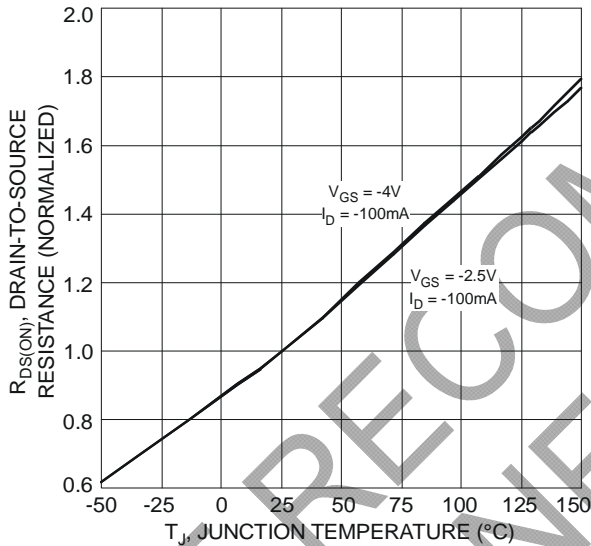


Fig. 5 On-Resistance Variation with Temperature

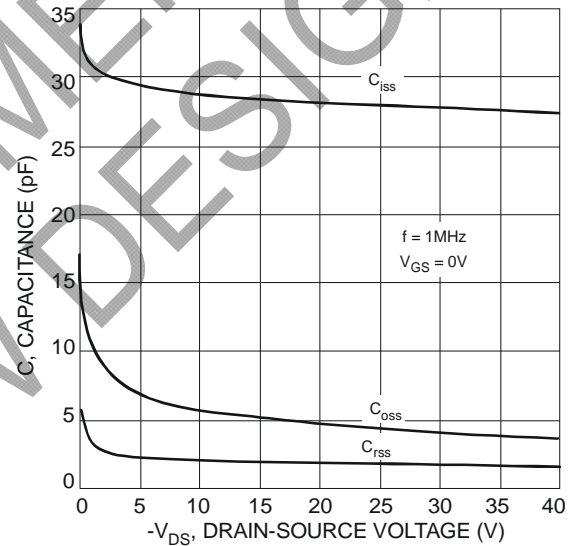


Fig. 6 Typical Capacitance

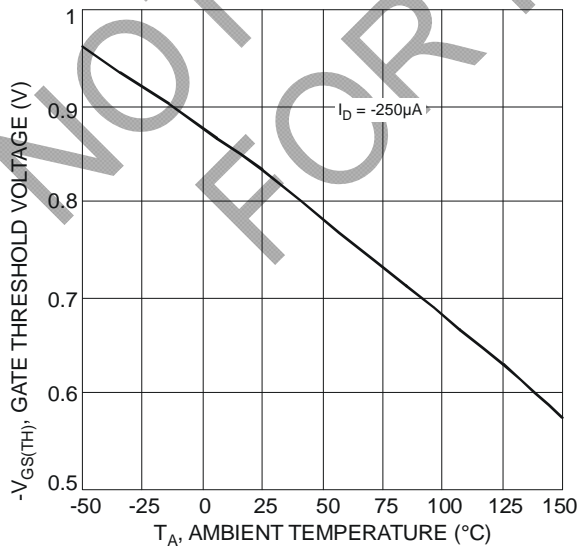


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

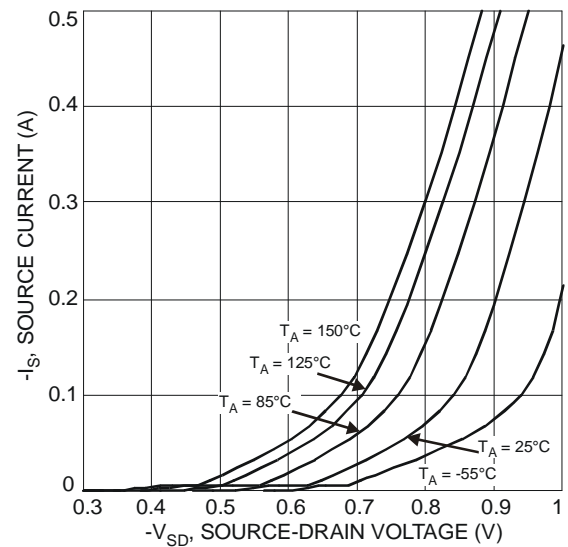


Fig. 8 Diode Forward Voltage vs. Current

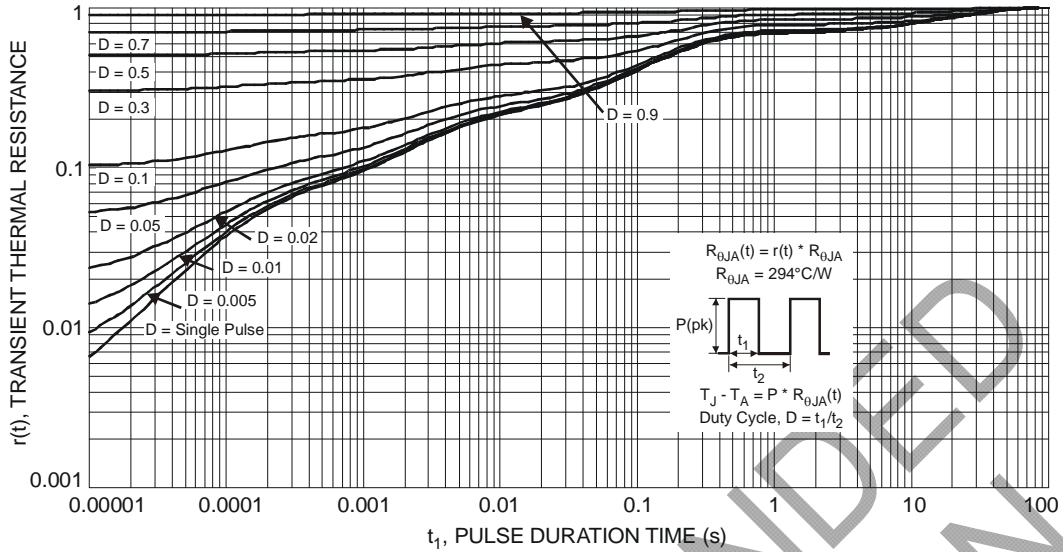
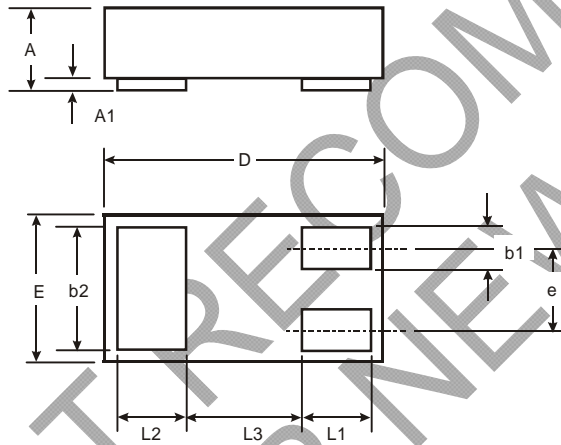


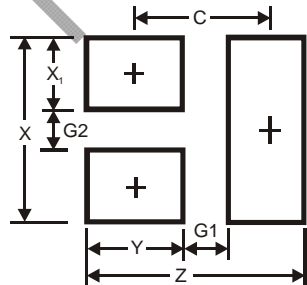
Fig. 9 Transient Thermal Response

Package Outline Dimensions



DFN1006-3			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0	0.05	0.03
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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