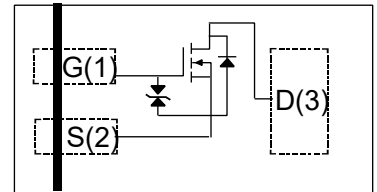


Description

The MOSFET provide the best combination of fast switching, low on-resistance and cost-effectiveness.

MOSFET Product Summary		
V _{DS} (V)	R _{DS(on)} (mΩ)	I _D (A)
20	200@ V _{GS} =4.5V	±1
	250@ V _{GS} =2.5V	
	310@ V _{GS} =1.8V	



Top View

Absolute maximum rating@25°C

Parameter		Symbol	Value	Units
Drain-Source Voltage		V _{DS}	20	V
Gate-Source Voltage		V _{GS}	±10	V
Continuous Drain Current	Continuous	I _D	±1	A
	Pulsed	I _{DP}	±4	
Total power dissipation		P _D	300	mW
Channel temperature		T _J	150	°C
Range of storage temperature		T _{STG}	-55 to +150	°C

Thermal resistance

Parameter	Symbol	Limits	Units
Channel to ambient	R _{th(ch-a)}	420	°C/W

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 1mA, V_{GS} = 0V$	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 8V$	-	-	± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.4	-	0.9	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 0.65A$	-	200	250	m Ω
		$V_{GS} = 2.5V, I_D = 0.45A$	-	250	300	m Ω
		$V_{GS} = 1.8V, I_D = 0.25A$	-	310	450	m Ω
Forward transfer admittance	g_{FS}	$V_{DS} = 10V, I_D = 300mA$	-	1.6	-	s
Input Capacitance	C_{ISS}	$V_{GS} = 0V, V_{DS} = 10V,$ $f = 1MHz$	-	48	-	pF
Output Capacitance	C_{OSS}		-	13	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	10	-	pF
Total Gate Charge	Q_G	$V_{GS} = 4.5V, V_{DS} = 10V,$ $I_D = 0.01A$	-	1.0	-	nC
Gate-Source Charge	Q_{GS}		-	0.1	-	nC
Gate-Drain Charge	Q_{GD}		-	0.42	-	nC
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 6V, V_{GS} = 4.5V,$ $R_G = 50\Omega, R_L = 12\Omega,$ $I_D = 500mA$	-	9	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	40	-	ns
Turn-On Rise Time	t_r		-	4	-	ns
Turn-On Fall Time	t_f		-	18	-	ns
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 100mA$	-	0.7	1	V

Typical Characteristics

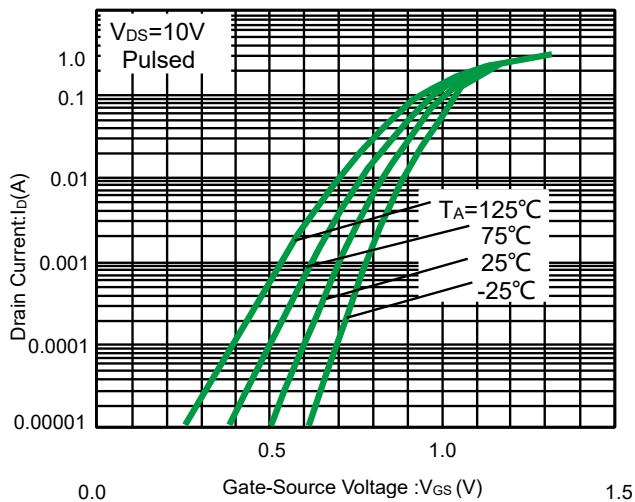


Fig 1. Typical transfer Characteristics

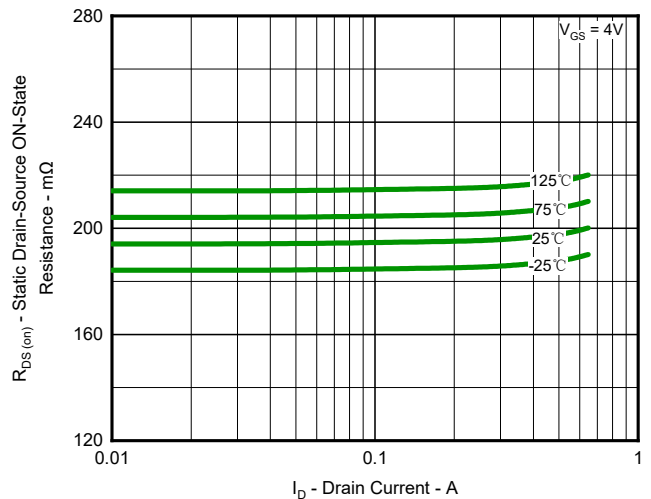


Fig 2. Static drain-source on-state resistance vs. drain current (I)

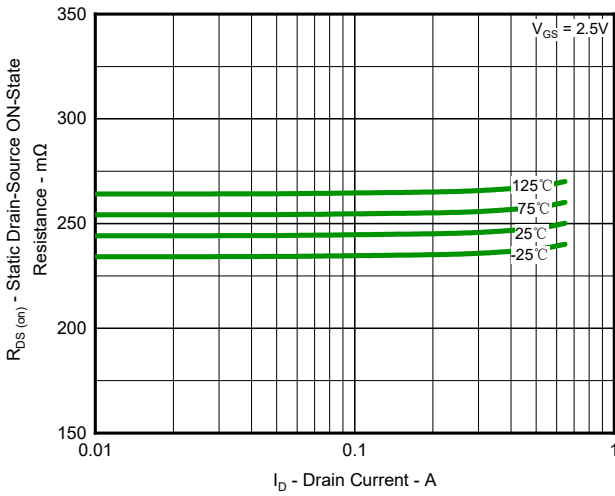


Fig 3. Static drain-source on-state resistance Vs. drain current (II)

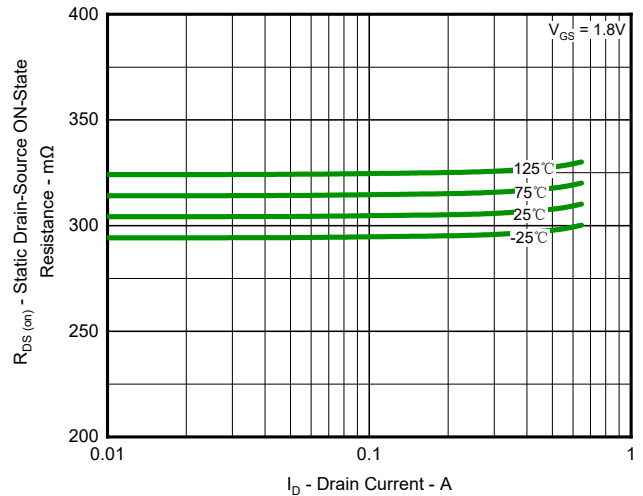


Fig 4. Static drain-source on-state resistance vs. drain current (III)

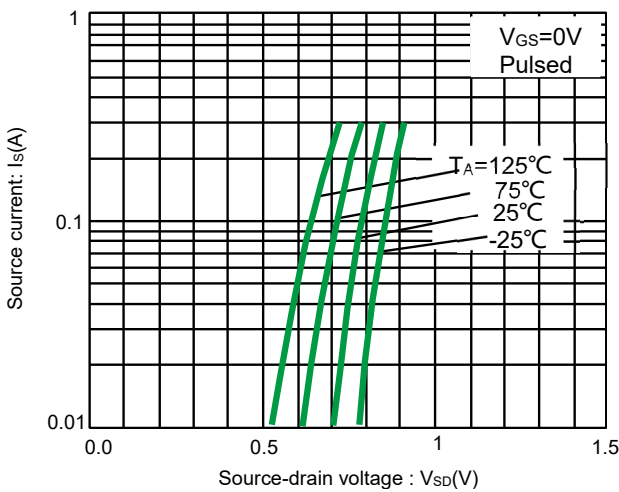


Fig 5. Source current vs. source-drain voltage

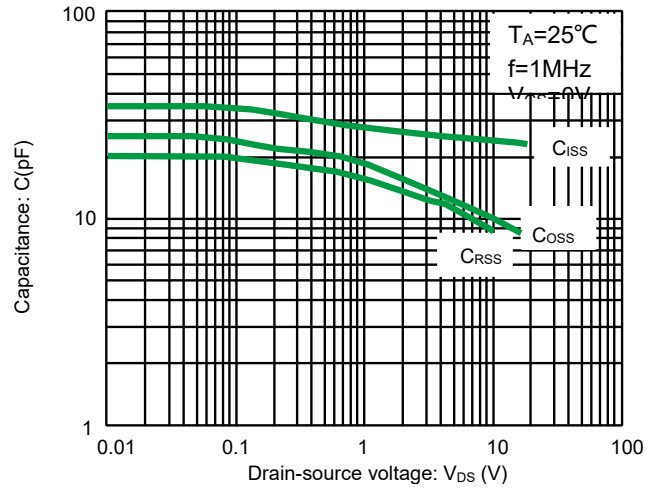


Fig 6. Typical capacitance vs. drain-source voltage

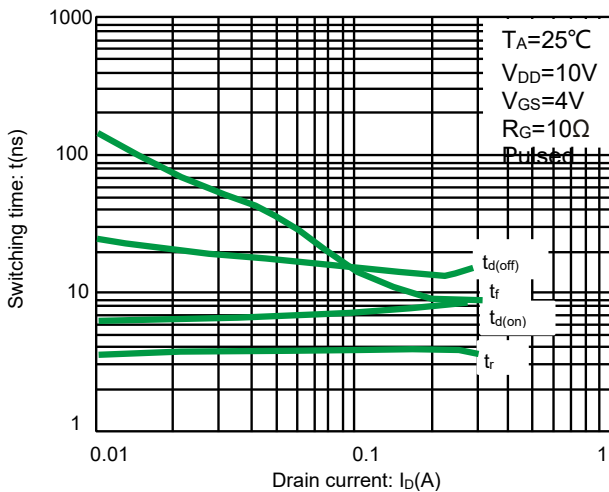


Fig 7. Switching characteristics

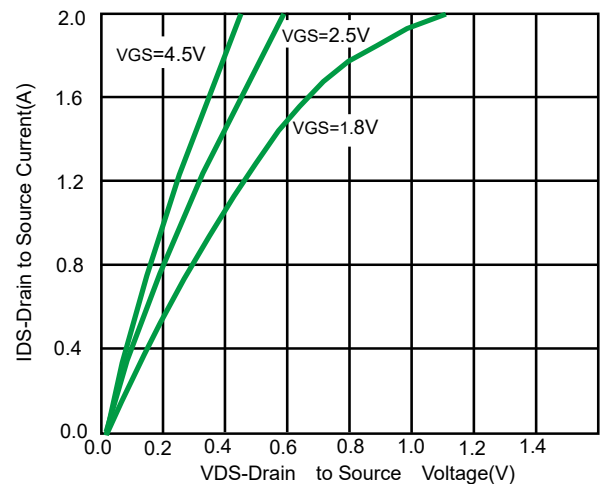


Fig 8. Output characteristics

Switching characteristics measurement circuit

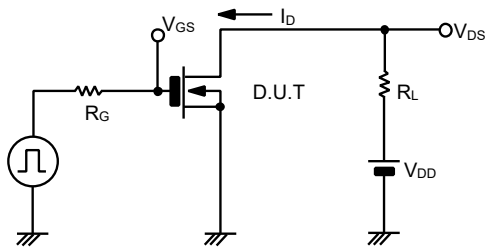


Fig.8 Switching time measurement circuit

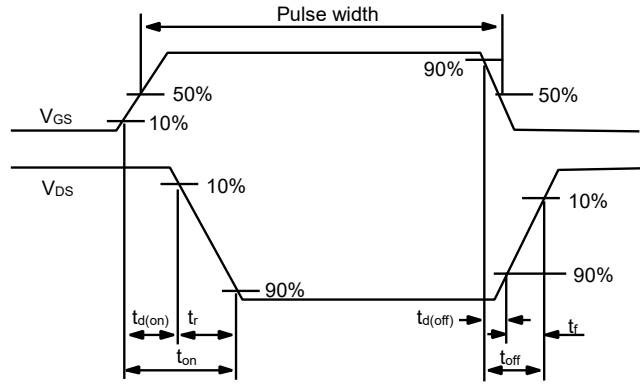
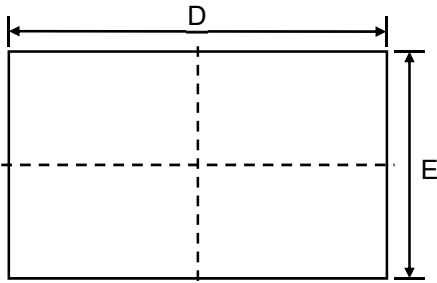
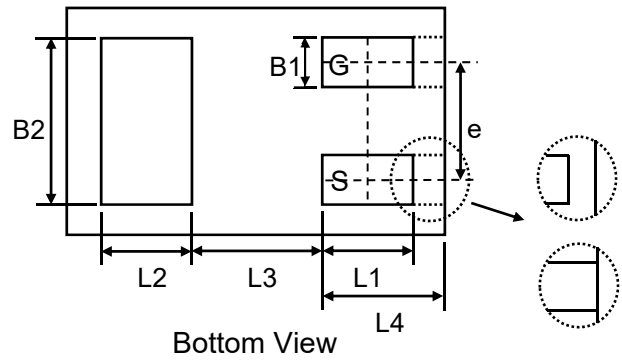


Fig.9 Switching time waveforms

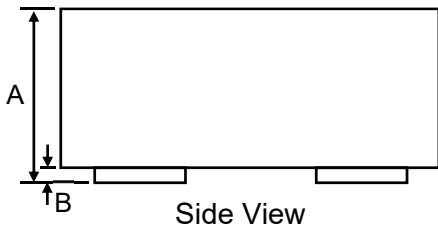
Product dimension (DFN1006-3L)



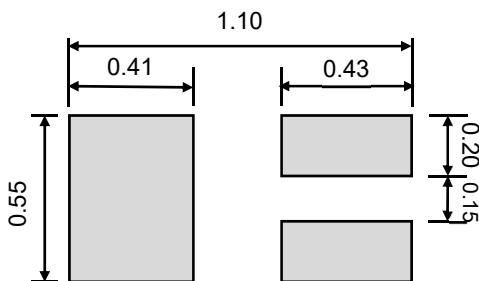
Top View



Bottom View



Side View



Suggested PCB Layout

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	0.33	0.55	0.013	0.022
B	0.00	0.05	0.000	0.002
B1	0.10	0.20	0.004	0.008
B2	0.45	0.55	0.018	0.022
D	0.90	1.05	0.035	0.041
E	0.50	0.65	0.020	0.026
e	0.35		0.014	
L1	0.20	0.30	0.008	0.012
L2	0.20	0.30	0.008	0.012
L3	0.39		0.015	
L4	0.25	0.35	0.010	0.014

Unit:mm

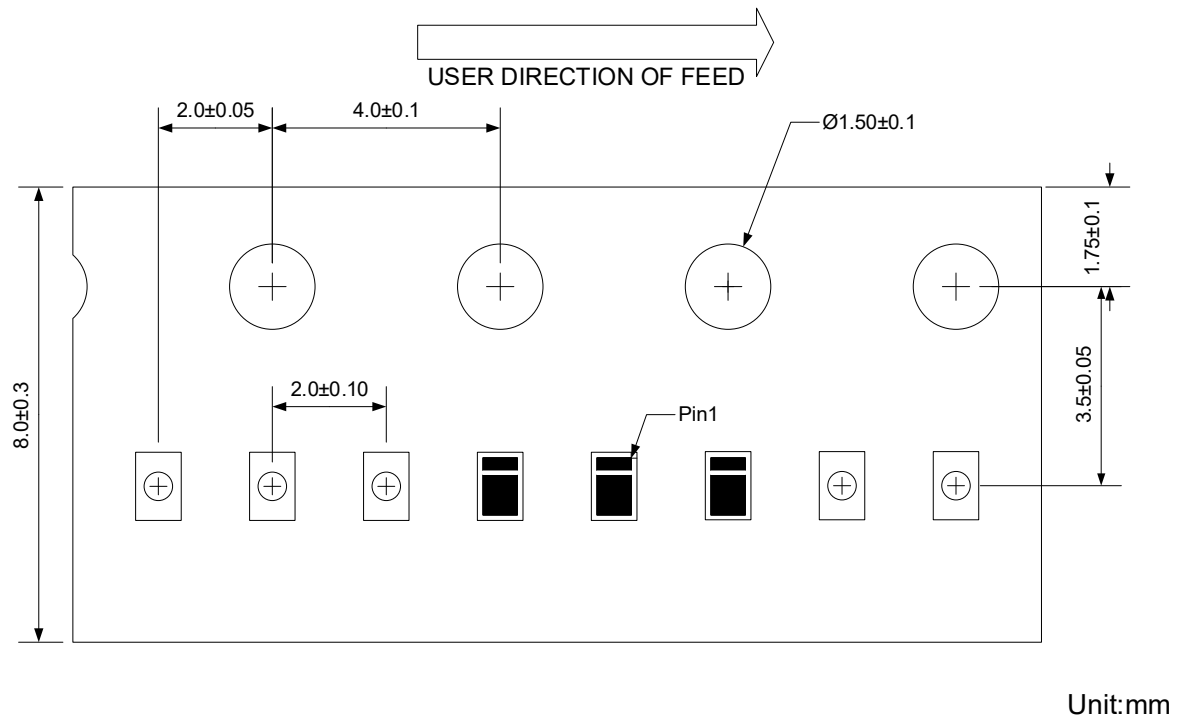
Marking information




Ordering information

Device	Package	Reel	Shipping
PNM3FD20V1EN	DFN1006-3L(Pb-Free)	7"	10000 / Tape & Reel

Load with information




IMPORTANT NOTICE

 and **Prisemi**[®] are registered trademarks of **Prisemi Electronics Co., Ltd (Prisemi)** ,Prisemi reserves the right to make changes without further notice to any products herein. Prisemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Prisemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in Prisemi data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Prisemi does not convey any license under its patent rights nor the rights of others. The products listed in this document are designed to be used with ordinary electronic equipment or devices, Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

Website: <http://www.prisemi.com>

For additional information, please contact your local Sales Representative.

©Copyright 2009, Prisemi Electronics

 **Prisemi**[®] is a registered trademark of Prisemi Electronics.

All rights are reserved.