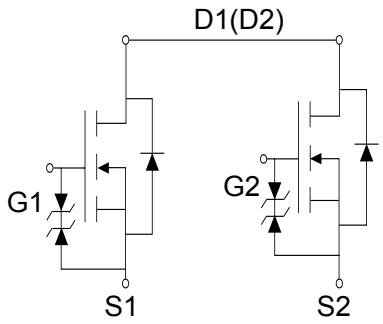
Description

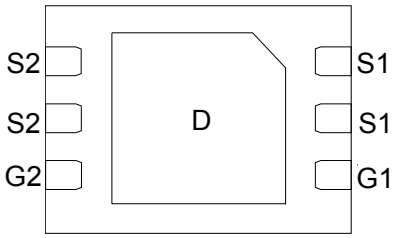
The MOSFET provide the best combination of fast switching,
low on-resistance and cost-effectiveness.

MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(mΩ)	I_D(A)
20	14@ VGS=4.5V	7

Internal Structure



Top View(DFN2*3-6L)



Absolute maximum rating@25℃

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±10	V
Drain Current-Continuous	I_D	7	A
Drain Current-Pulsed (Note 1)	I_{DM}	30	A
Maximum Power Dissipation	P_D	0.98	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	℃

Absolute maximum rating@25℃

Parameter	Typical	Maximum	Units
Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	126	℃/W

Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	I_D =250μA,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}=±10V	-	-	±10	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.45	0.7	0.95	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D =6.5A		14	20	mΩ
		V_{GS}=2.5V, I_D =5.5A		19	25	
Forward Transconductance	G_{FS}	V_{dS}=5V, I_D =7A		20		S
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =10V, f=1MHz	-	1150		pF
Output Capacitance	C_{OSS}		-	185		pF
Reverse Transfer Capacitance	C_{RSS}		-	145		pF
Turn-On Delay Time	$t_{d(on)}$	V_{DD} =10V, R_{GEN} =3Ω, V_{GS}=5V,R_L=1.35Ω	-	6		nS
Turn-On Rise Time	t_r		-	13		nS
Turn-Off Delay Time	$t_{d(off)}$		-	52		nS
Turn-Off Fall Time	t_f		-	16		nS
Total Gate Charge	Q_g	V_{DS} =10V, I_D =7A, V_{GS}=4.5V		15		nC
Gate-Source Charge	Q_{gs}			0.8		nC
Gate-Drain Charge	Q_{gd}			3.2		nC
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=1A			1.2	V
Diode Forward Current	I_S				7	A

Note 1: Repetitive Rating: Pulse width lidth limited by maximum junction temperature.

Note 2: Surface Mounted on FR4 Board,t≤ 10 sec

Typical Characteristics

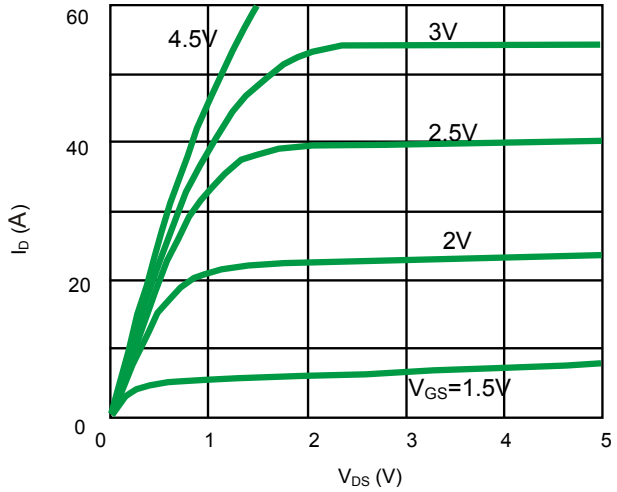


Fig 1. On-Region Characteristics

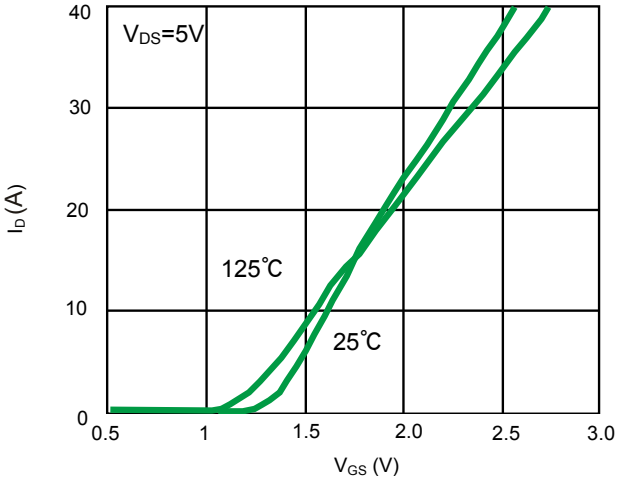


Fig 2. Transfer Characteristics

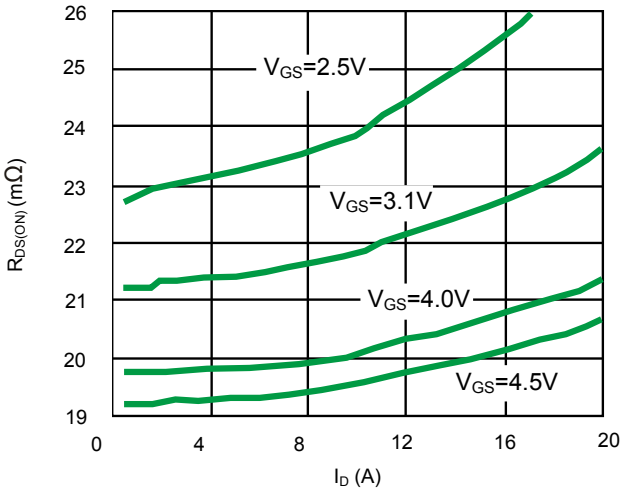


Fig 3. On-Resistance vs. Drain Current and gate Voltage

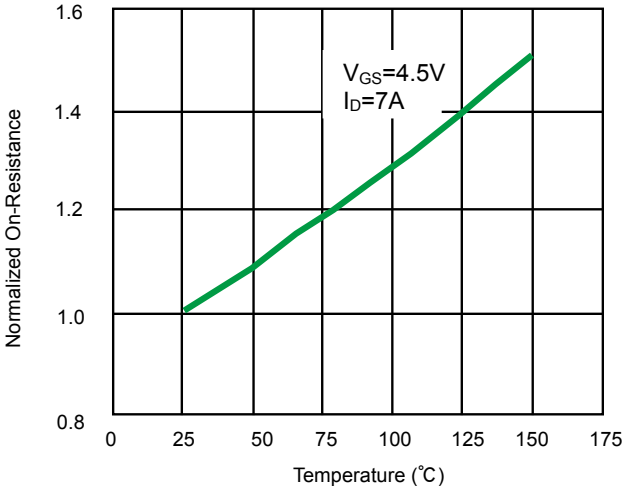


Fig 4. On-Resistance vs. Junction Temperature

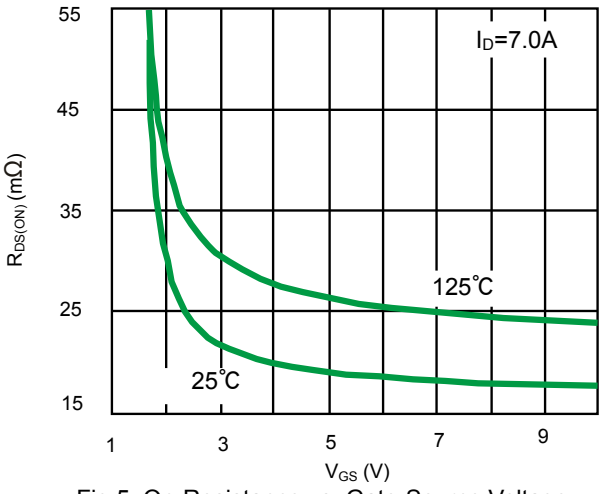


Fig 5. On-Resistance vs. Gate-Source Voltage

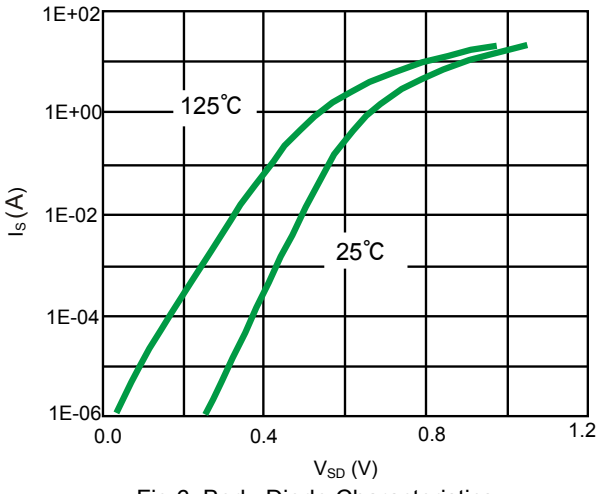


Fig 6. Body-Diode Characteristics

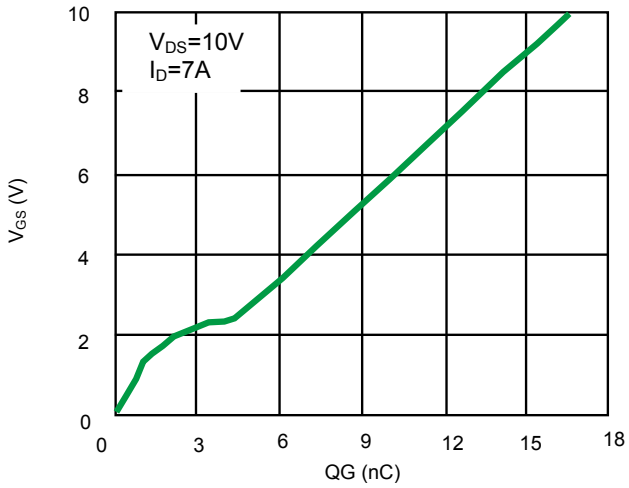


Fig 7. Gate Charge Characteristics

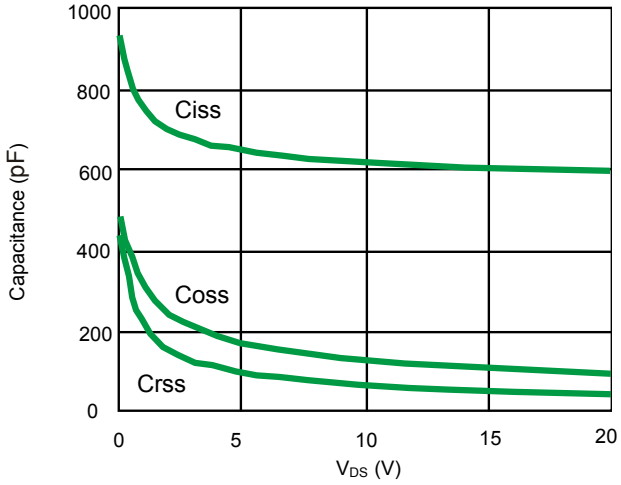


Fig 8. Capacitance Characteristics

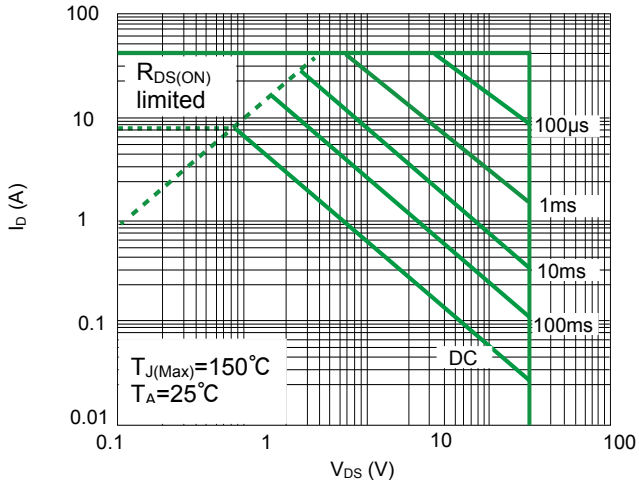


Fig 9. Maximum Forward Biased Safe Operating Area

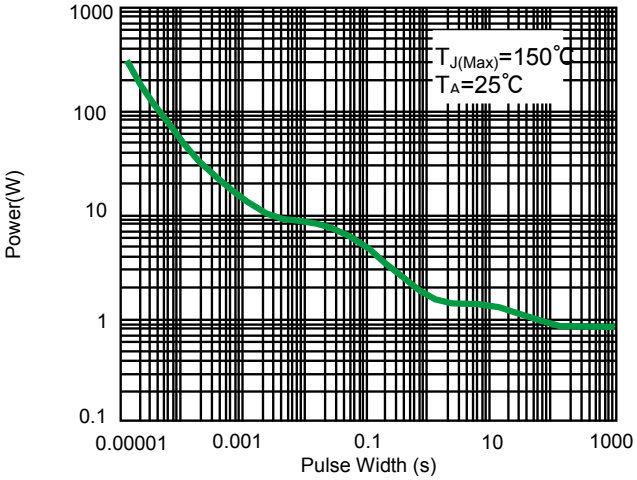


Fig 10. Single Pulse Power Rating Junction-to-Ambient

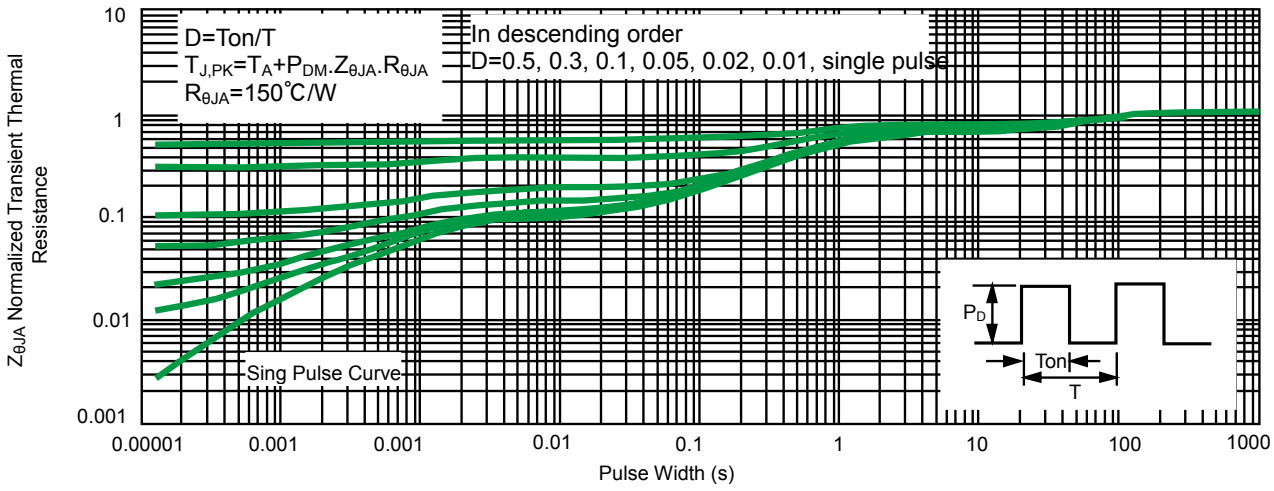
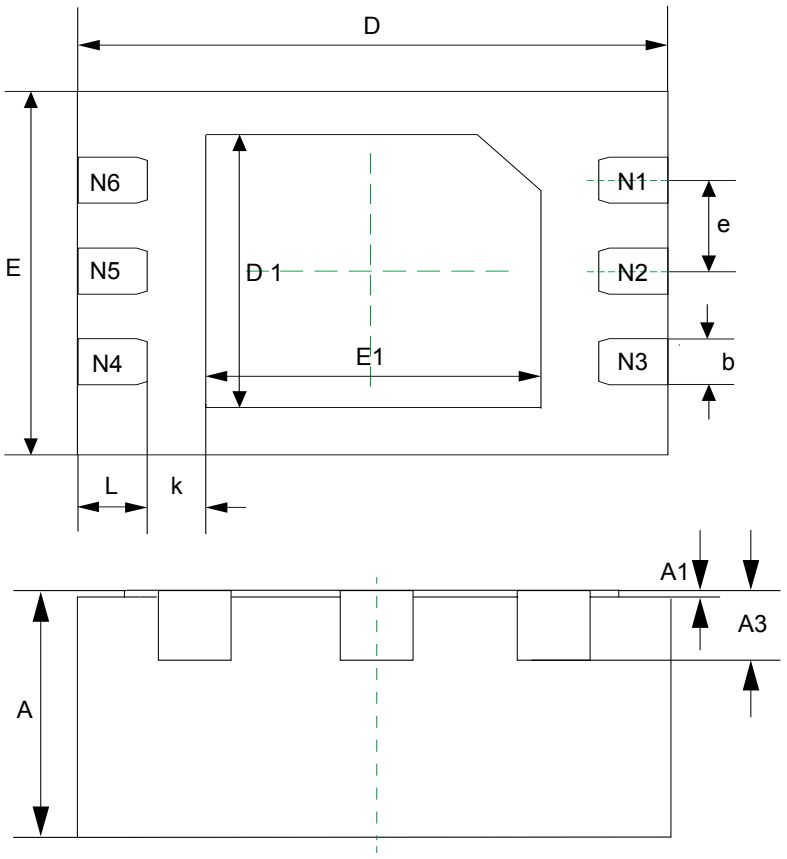
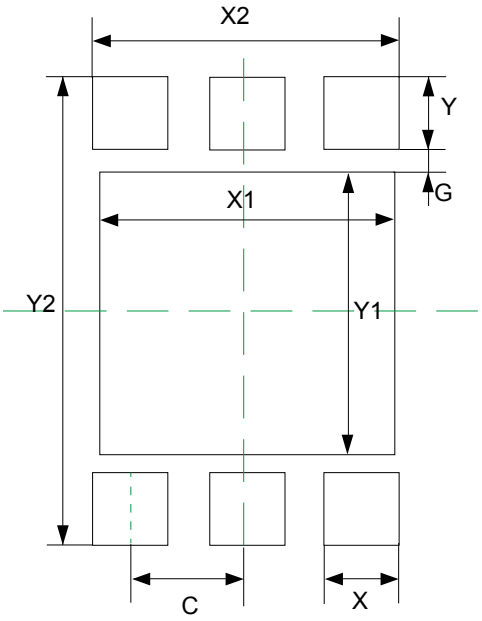


Fig 11.Normalized Maximum Transient Thermal Impedance

Product dimension(DFN2*3-6L)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF		0.008REF	
D	2.950	3.050	0.116	0.120
E	1.950	2.050	0.077	0.081
D1	1.450	1.550	0.057	0.061
E1	1.650	1.750	0.065	0.069
k	0.200MIN		0.008MIN	
b	0.200	0.300	0.008	0.012
e	0.500TYP		0.020TYP	
L	0.300	0.400	0.012	0.016



Dim	Millimeters
C	0.650
G	0.150
X	0.400
X1	1.600
X2	1.700
Y	0.530
Y1	1.940
Y2	3.300

Ordering information

Device	Package	Shipping
PDNM6N20V7E	DFN2*3-6L (Pb-Free)	3000 / Tape & Reel

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.