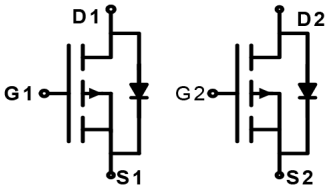
Prisemi®

PDPM8P30V5
Dual P-Channel MOSFET

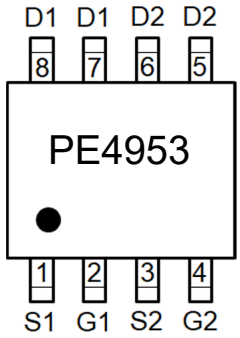
Description

The PDPM8P30V5 uses advanced trench technology to provide excellent RDS(ON), low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a load switch or in PWM applications.



Schematic diagram

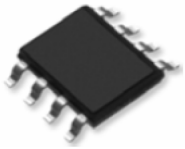
MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(mΩ)	I_D(A)
-30	49 @ V_{GS}=-10V	-5.3



Marking and pin Assignment

Features

- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package



SOP-8 top view

Application

- PWM applications
- Load switch
- Power management

Absolute maximum rating@25℃

Rating	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current- Continuous	I_D	-5.3	A
Drain Current- Pulsed[1)]	I_{DM}	-20	A
Maximum Power Dissipation	P_D	2.6	W
Operating and Storage Junction Temperature Range	T_J,T_{STG}	-55 to +150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Units
Thermal Resistance, Junction to Ambient[2)]	$R_{\theta JA}$	49	℃/W

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=-250μA	-30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-24V,V_{GS}=0V	-	-	-1	μA
Gate-to-Source Forward Leakage	I_{GSS}	V_{GS}=±20V, V_{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.6	-3	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D =-5.3A	-	43	49	mΩ
		V_{GS}=-4.5V, I_D =-4.2A,	-	68	100	mΩ
Forward Trans conductance	g_{FS}	V_{DS}=-15V, I_D =-4.5A	4	7	-	S
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =-15V, f=1MHz	-	540	-	pF
Output Capacitance	C_{OSS}		-	150	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	75	-	pF
Total Gate Charge	Q_g	I_D =-5.3A, V_{DS} =-15V, V_{GS} =-10V	-	12	-	nC
Gate-to-Source Charge	Q_{gs}		-	2.4	-	nC
Gate-to-Drain(Miller) Charge	Q_{gd}		-	3.2	-	nC
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-15V, I_D =-1A, V_{GS}=-10V , R_{GEN}=6Ω,	-	8	-	ns
Rise Time	t_r		-	14	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	18	-	ns
Fall Time	t_f		-	10	-	ns
Diode Forward Voltage[3)]	V_{SD}	V_{GS}=0V,I_S=-5.3A	-	-	-1.2	V

Notes:

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

2. Surface Mounted on FR4 Board, t ≤ 10 sec.

3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

Typical Characteristics

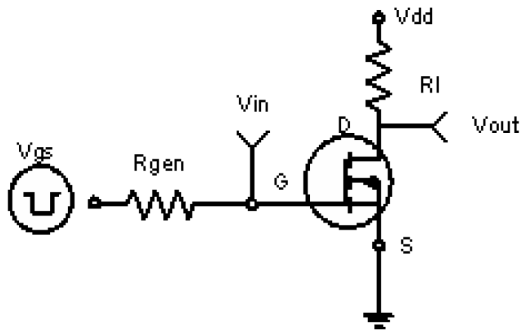


Figure 1:Switching Test Circuit

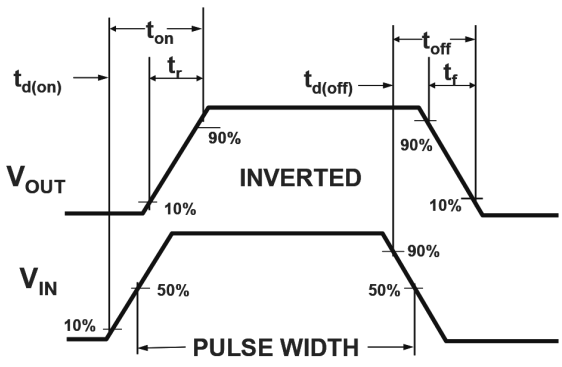


Figure 2:Switching Waveforms

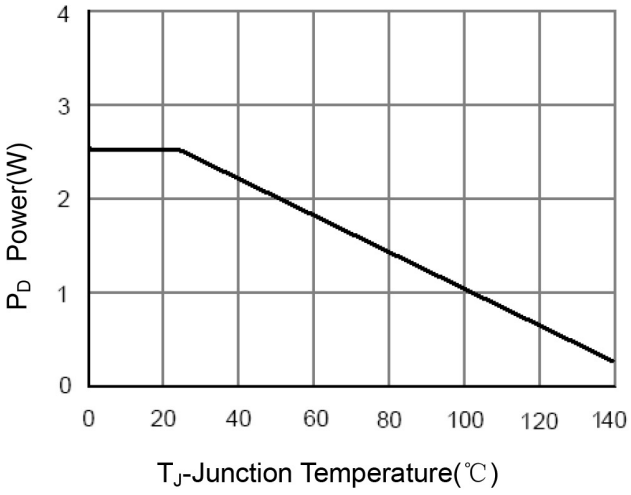


Figure 3 Power Dissipation

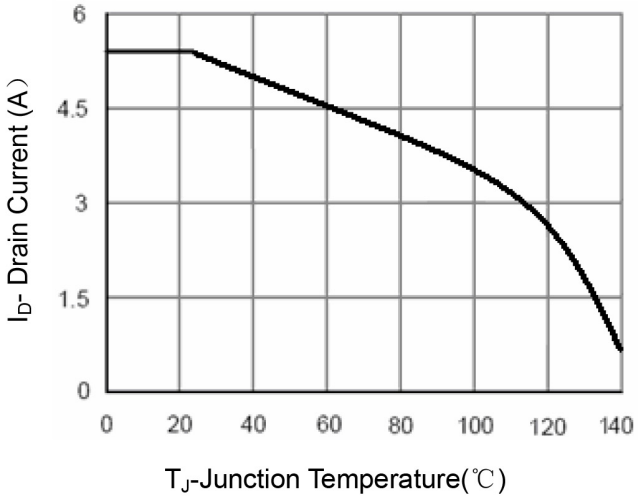


Figure 4 Drain Current

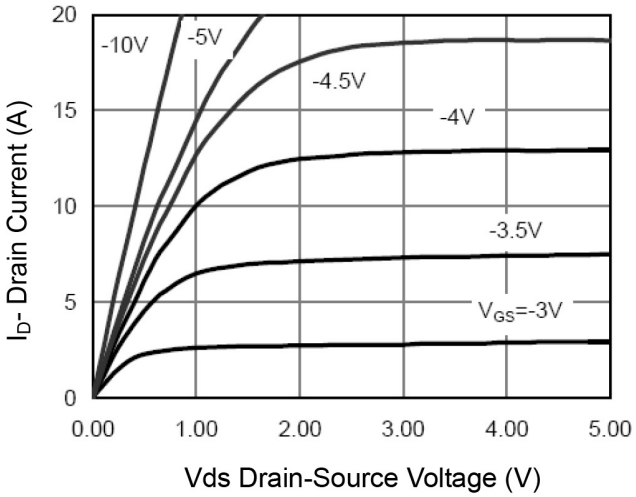


Figure 5 Output Characteristics

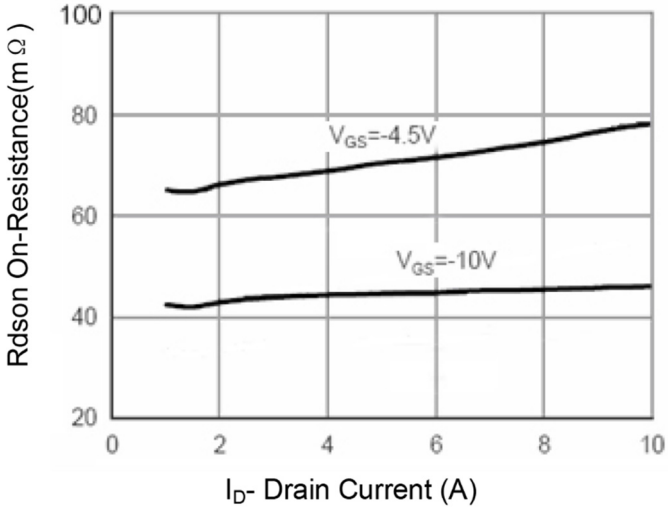


Figure 6 Drain-Source On-Resistance

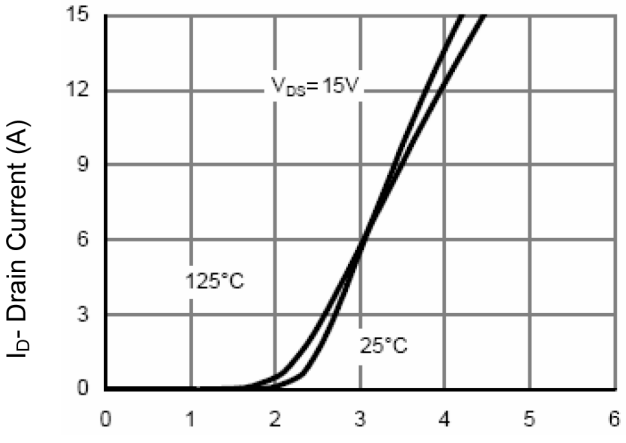


Figure 7 Transfer Characteristics

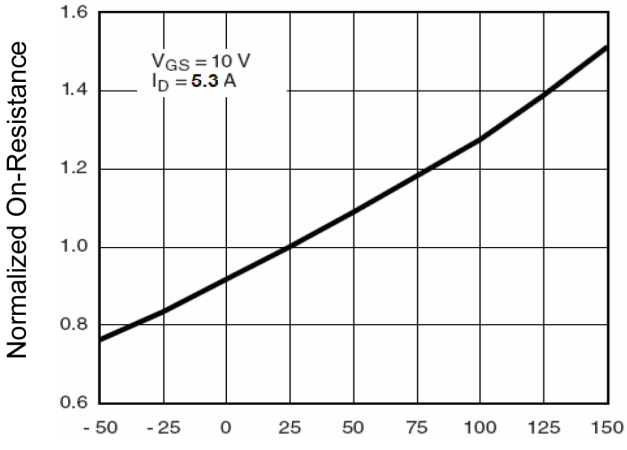


Figure 8 Drain-Source On-Resistance

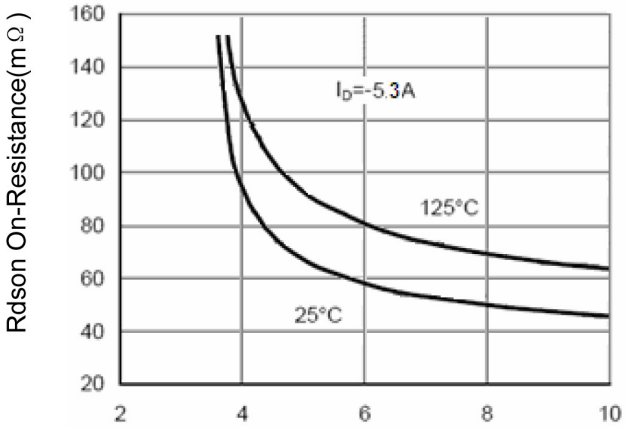


Figure 9 Rdson vs Vgs

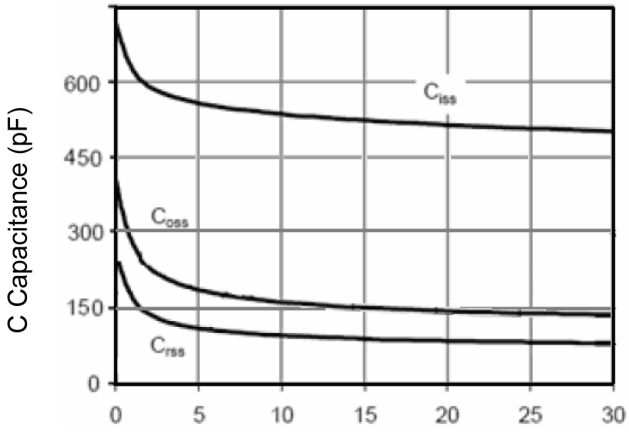


Figure 10 Capacitance vs Vds

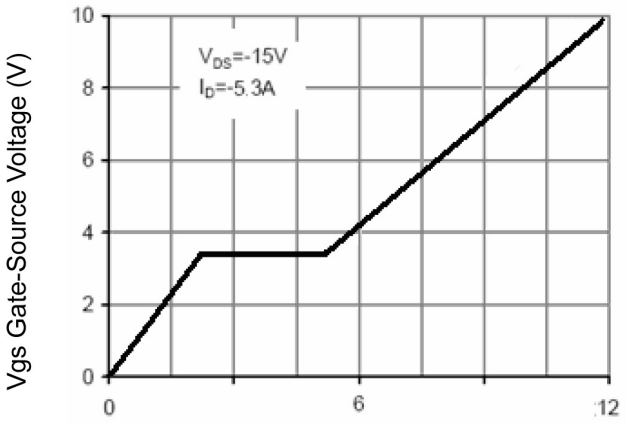


Figure 11 Gate Charge

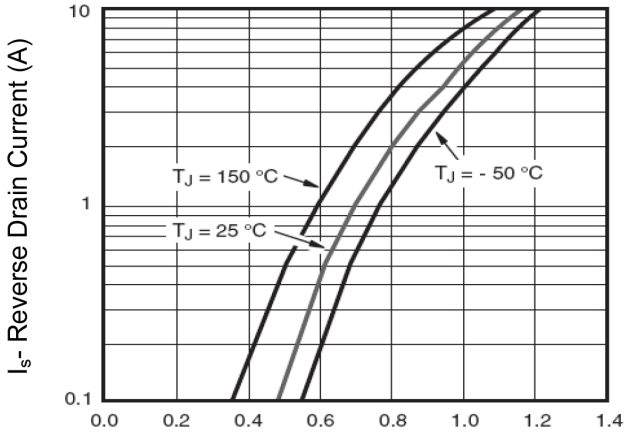


Figure 12 Source- Drain Diode Forward

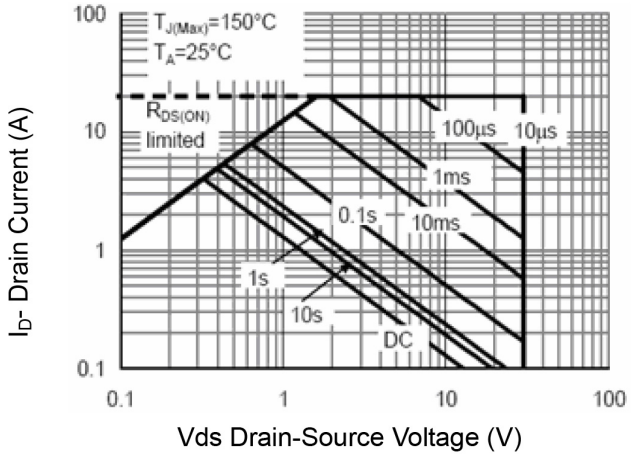


Figure 13 Safe Operation Area

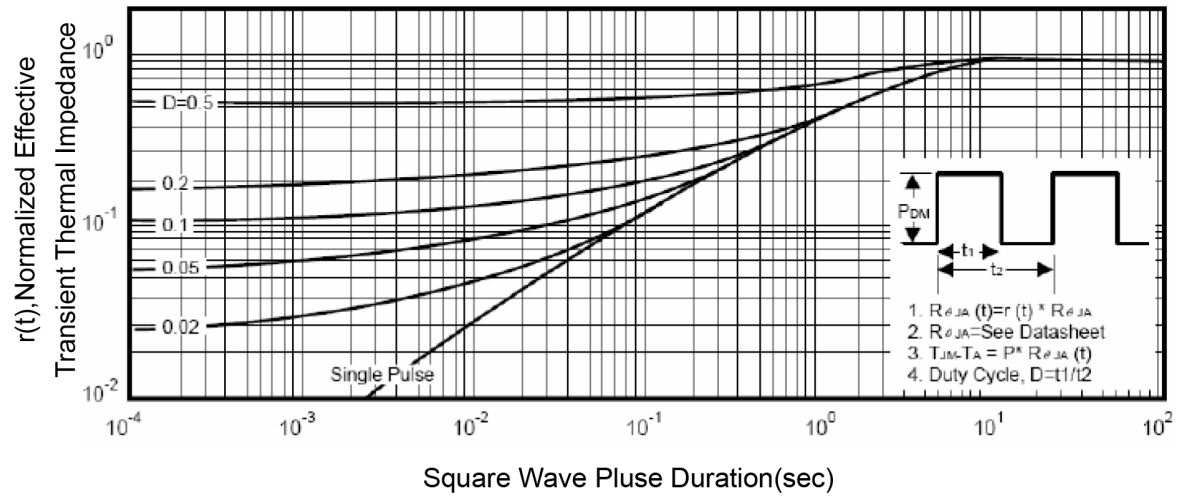
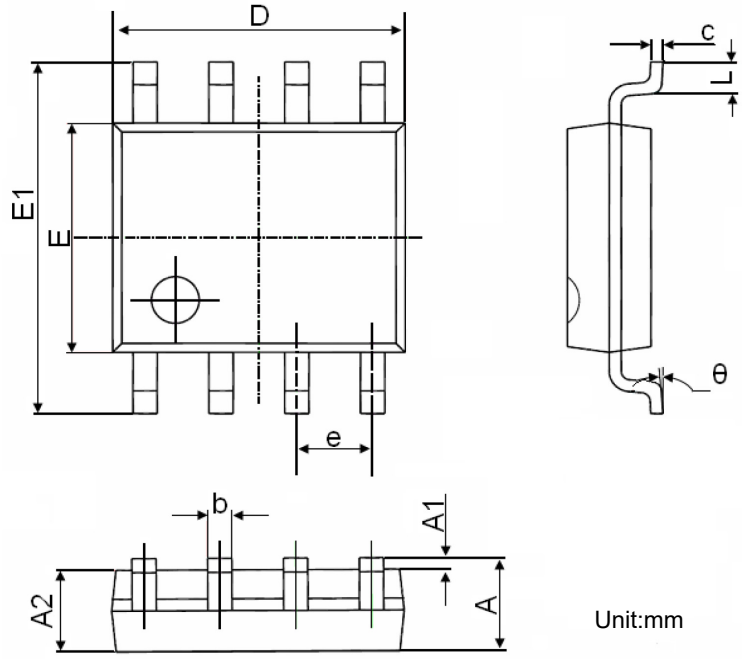


Figure 14 Normalized Maximum Transient Thermal Impedance

Product dimension (SOP-8)



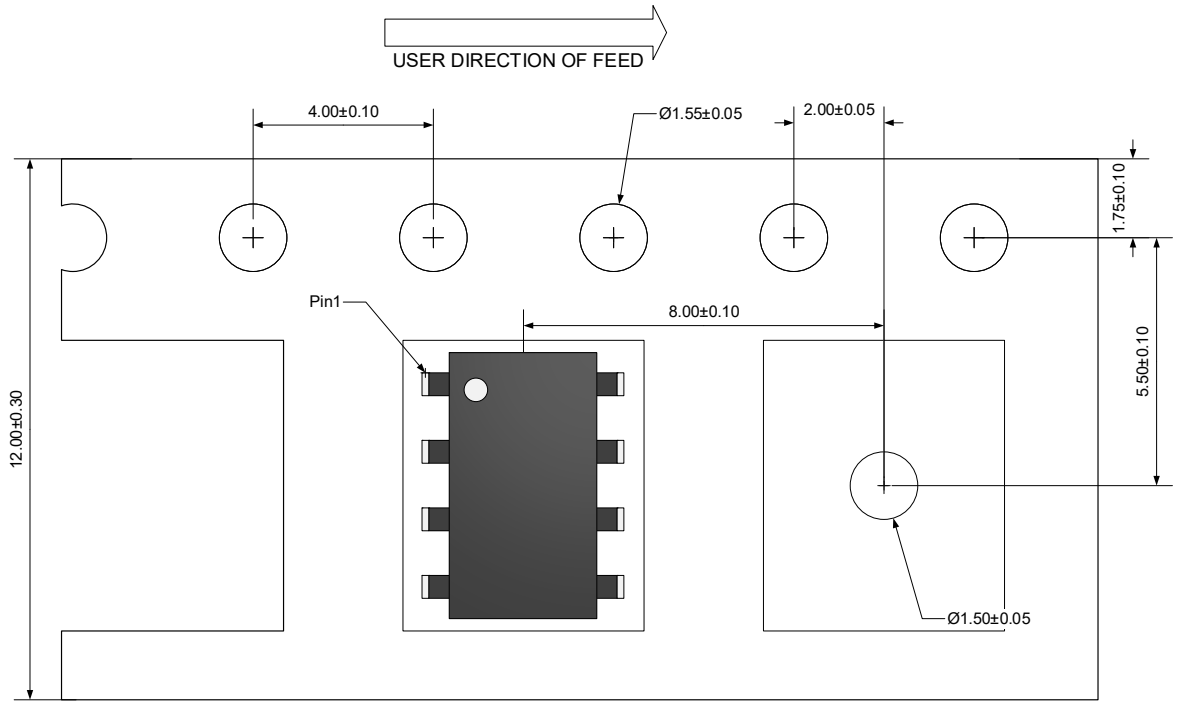
Unit:mm

Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
C	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

Ordering information

Device	Package	Reel	Shipping
PDPM8P30V5	SOP-8	13"	4000 / Tape & Reel

Load with information



Unit:mm

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.