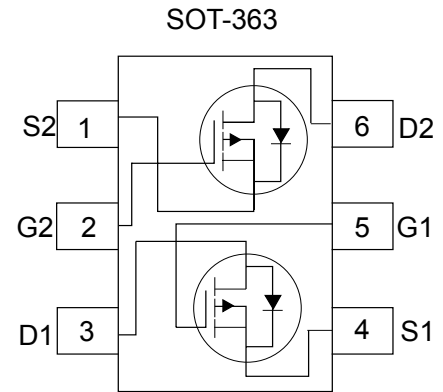


Description

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

MOSFET Product Summary		
V _{DS} (V)	R _{DS(on)} (Ω)	I _D (mA)
-20	0.45@ V _{GS} =-4.5V	-800
	0.62@ V _{GS} =-2.5V	
	0.86@ V _{GS} =-1.8V	



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	mA
	Pulsed	I _{DP}	
Maximum Power Dissipation (Note 1)(Note 3)	P _D	300	mW
Pulsed Drain Current(Note 2)	I _{DM}	-1.2	A
Operating Junction Temperature	T _J	150	°C
Lead Temperature	T _L	260	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Units
Junction-to-Case Thermal Resistance	R _{θJA}	-	-	415	°C/W

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu A, V_{GS} = 0V$	-20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16V, V_{GS} = 0V$	-	-	-1	μA
Gate-to-source Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 8V$	-	-	± 10	μA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}, I_D = -250\mu A$	-0.45	-0.55	-0.85	V
Drain-to-source On-resistance (Note4)	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -700mA$	-	450	700	m Ω
		$V_{GS} = -2.5V, I_D = -300mA$	-	620	850	m Ω
		$V_{GS} = -1.8V, I_D = -250mA$	-	860	1200	m Ω
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -450mA$	-	1.25	-	S
CHARGES, CAPACITANCES AND GATE RESISTANCE						
Input Capacitance	C_{ISS}	$V_{GS} = 0V, V_{DS} = -10V,$ $f = 1MHz$	-	72	-	pF
Output Capacitance	C_{OSS}		-	9.5	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	9.8	-	pF
Total Gate Charge	$Q_{G(TOT)}$	$V_{GS} = -4.5V, V_{DS} = -10V,$ $I_D = -450mA$	-	0.9	-	nC
Threshold Gate Charge	$Q_{G(TH)}$		-	0.1	-	nC
Gate-to-Source Charge	Q_{GS}		-	0.15	-	nC
Gate-to-Drain Charge	Q_{GD}		-	0.3	-	nC
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_d(ON)$	$V_{GS} = -4.5V, V_{DS} = -10V,$ $I_D = -450mA$ $R_G = 6\Omega$	-	43	-	nS
Rise Time	t_r		-	137	-	nS
Turn-Off Delay Time	$t_d(OFF)$		-	1450	-	nS
Fall Time	t_f		-	2050	-	nS
BODY DIODE CHARACTERISTICS						
Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = -150mA$	-0.5	-0.65	-1.1	V

Note:

1. Surface mounted on FR4 board using minimum pad size, 1oz copper
2. Pulse width <380 μs , Single pulse
3. Maximum junction temperature $T_J = 150^\circ C$.
4. Pulse test: Pulse width <380 us duty cycle <2%.

Typical Characteristics

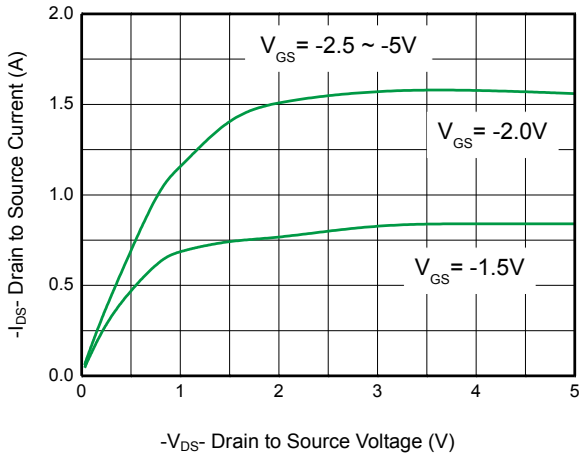


Fig 1. Output characteristics

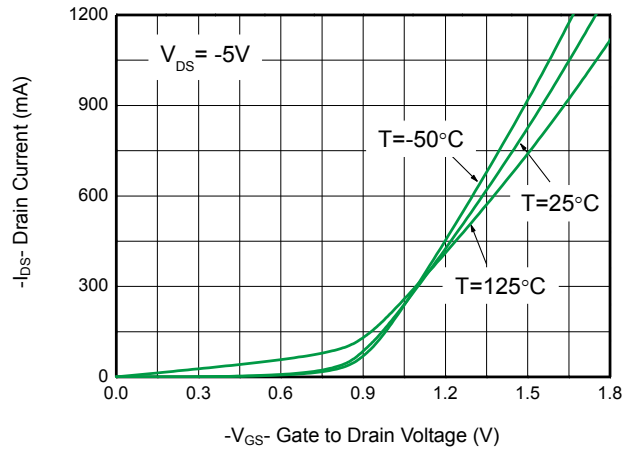


Fig 2. Transfer characteristics

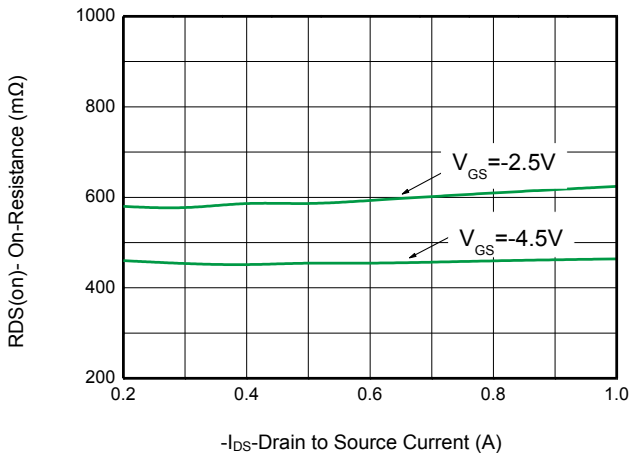


Fig 3. On-Resistance vs. Drain current

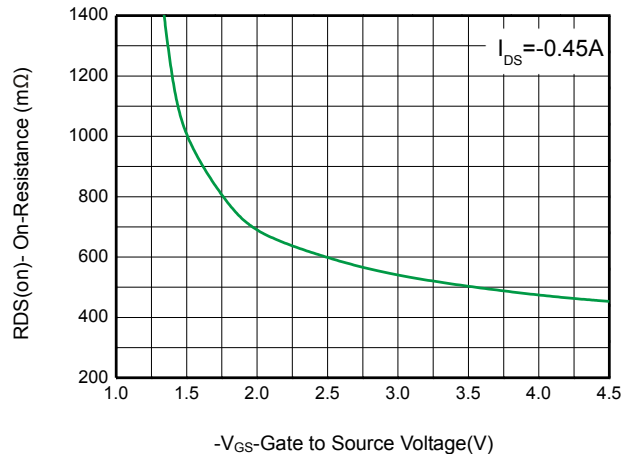


Fig 4. On-Resistance vs. Gate-to-Source voltage

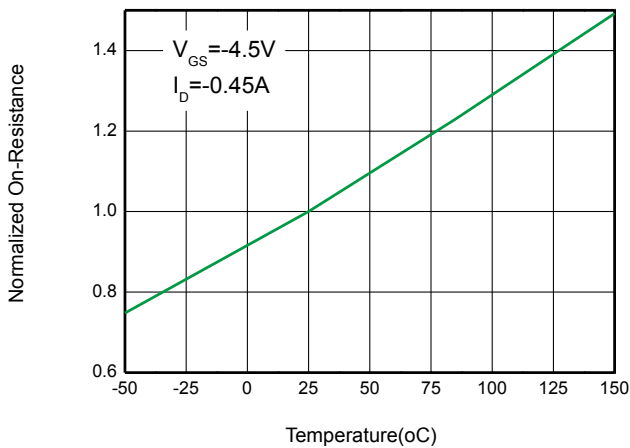


Fig 5. On-Resistance vs. Junction temperature

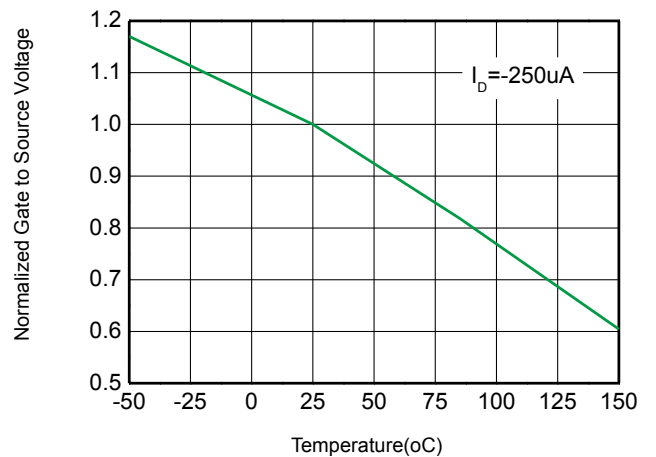


Fig 6. Threshold voltage vs. Temperature

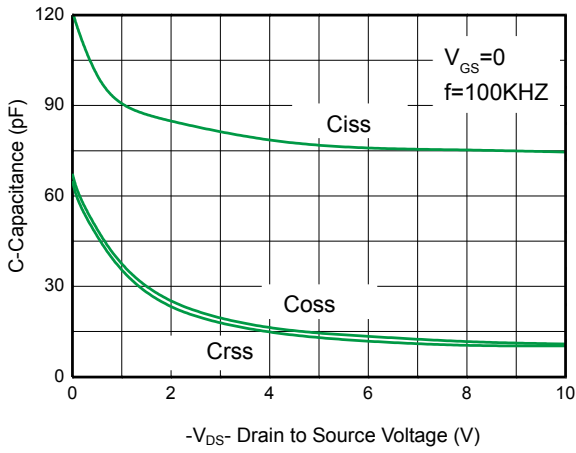


Fig 7. Capacitance.

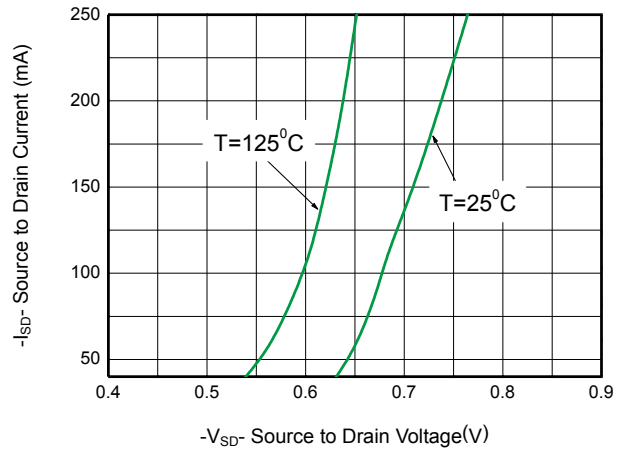


Fig 8. Body diode forward voltage

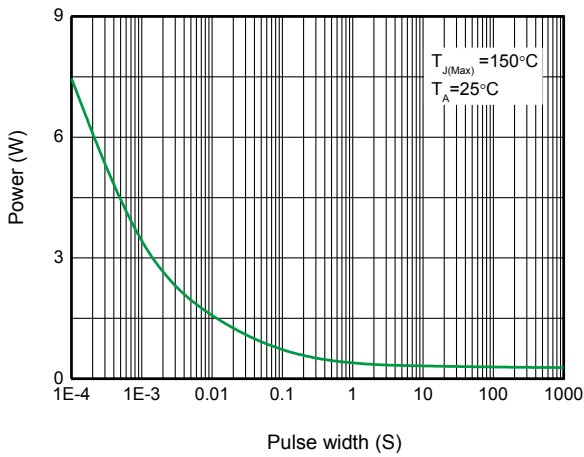


Fig 9. Single pulse power

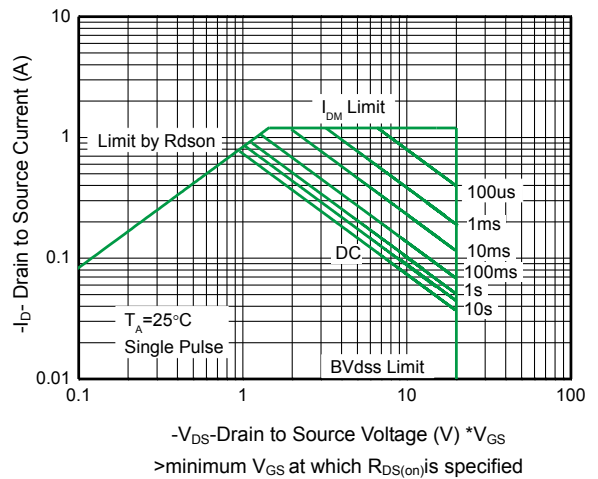


Fig 10. Safe operating power

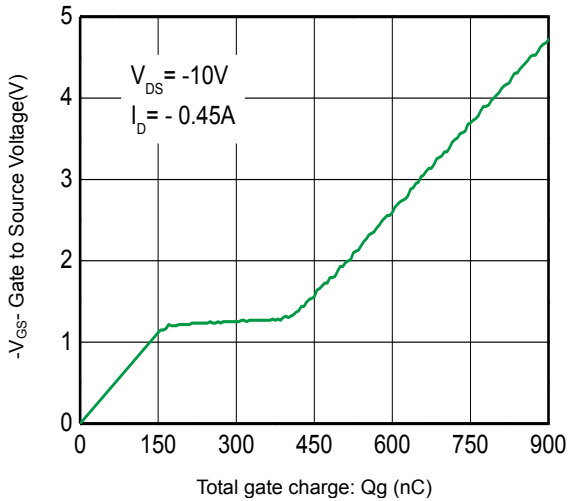
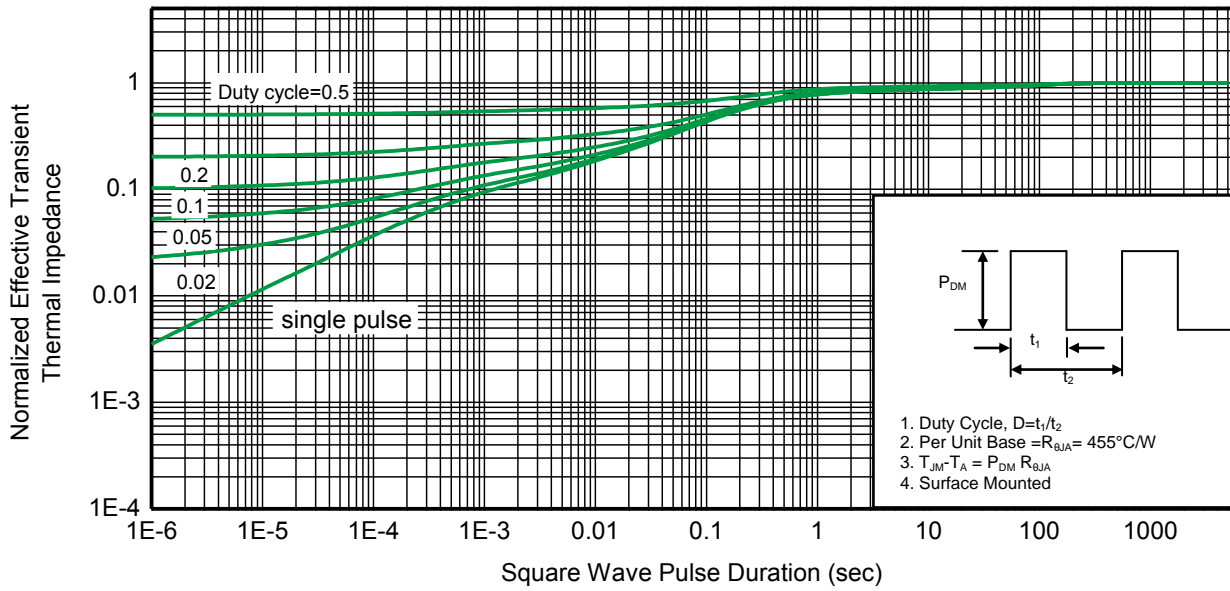
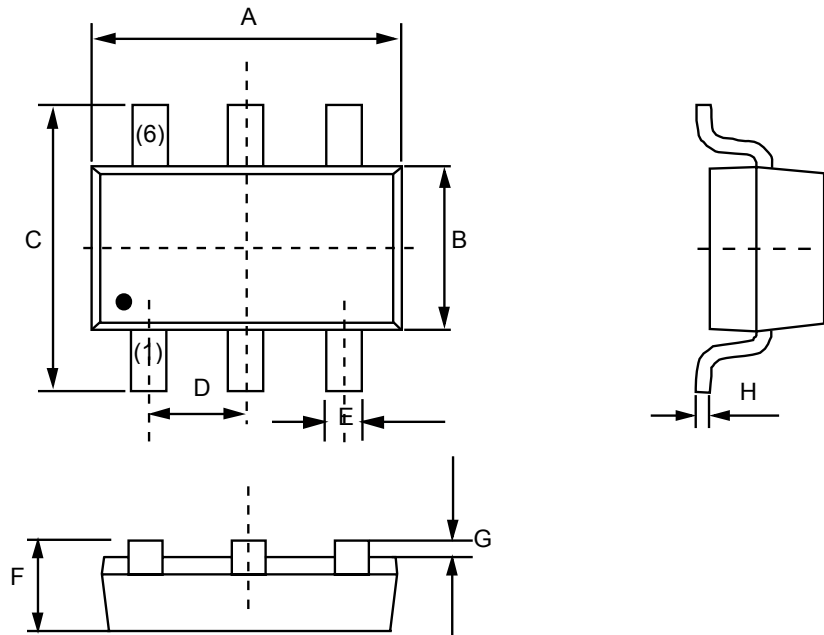


Fig 11. Dynamic input characteristics



Transient thermal response (Junction-to-Ambient)

Product dimension (SOT-363)




Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.0	2.2	0.079	0.087
B	1.15	1.35	0.045	0.053
C	2.15	2.45	0.085	0.096
D	0.65BSC		0.026BSC	
E	0.15	0.35	0.006	0.014
F	0.90	1.10	0.035	0.043
G	0.00	0.10	0.000	0.004
H	0.08	0.15	0.003	0.006

Ordering information

Device	Package	Shipping
PDPM6UT20V1E	SOT-363(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.