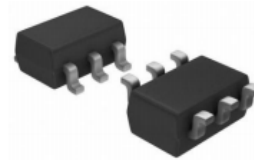
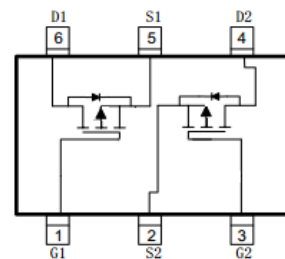
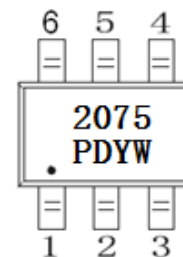


WPMD2075
Dual P-Channel, -20V, -3.6A, Power MOSFET
[Http://www.sh-willsemi.com](http://www.sh-willsemi.com)

V_{DS} (V)	Typical $R_{ds(on)}$ (m Ω)
-20	60@ $V_{GS}=-10V$
	70@ $V_{GS}=-4.5V$
	100@ $V_{GS}=-2.5V$


SOT-23-6L

Pin configuration (Top view)


2075 = Device Code
 PD = Special Code
 Y =Year
 W =Week

Marking
Order information

Device	Package	Shipping
WPMD2075-6/TR	SOT-23-6L	3000/Reel&Tape

Descriptions

The WPMD2075 is the Dual P-Channel logic mode power field effect transistors are produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application, notebook computer power management and other battery powered circuits where high-side switching.

Features

- Trench Technology
- Supper high density cell design
- Excellent ON resistance for higher DC current
- Extremely Low Threshold Voltage
- SOT-23-6L package design

Applications

- Power Management
- DC-DC converter circuit
- Simple drive requirement
- Load Switch
- Charging

Absolute Maximum ratings

Parameter		Symbol	10 S	Steady State	Unit
Drain-Source Voltage		V _{DS}	-20		V
Gate-Source Voltage		V _{GS}	±12		
Continuous Drain Current ^{a d}	T _A =25°C	I _D	-3.6	-3.3	A
	T _A =70°C		-2.9	-2.6	
Maximum Power Dissipation ^{a d}	T _A =25°C	P _D	1.2	1.0	W
	T _A =70°C		0.7	0.6	
Continuous Drain Current ^{b d}	T _A =25°C	I _D	-3.3	-3.0	A
	T _A =70°C		-2.6	-2.4	
Maximum Power Dissipation ^{b d}	T _A =25°C	P _D	1.0	0.8	W
	T _A =70°C		0.6	0.5	
Pulsed Drain Current ^c		I _{DM}	-20		A
Operating Junction Temperature		T _J	150		°C
Storage Temperature Range		T _{stg}	-55 to 150		°C

Thermal resistance ratings

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Junction-to-Ambient Thermal Resistance ^a	$t \leq 10 \text{ s}$	$R_{\theta JA}$	90	108	$^{\circ}\text{C/W}$
	Steady State		110	130	
Junction-to-Ambient Thermal Resistance ^b	$t \leq 10 \text{ s}$	$R_{\theta JA}$	105	128	
	Steady State		133	158	
Junction-to-Case Thermal Resistance		$R_{\theta JC}$	60	75	

a Surface mounted on FR4 Board using 1 square inch pad size, 1oz copper

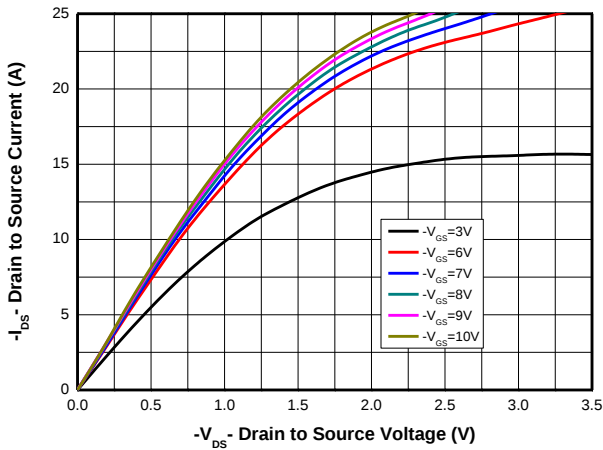
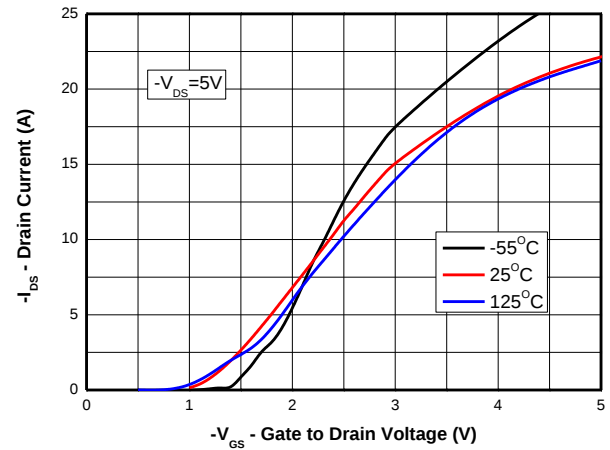
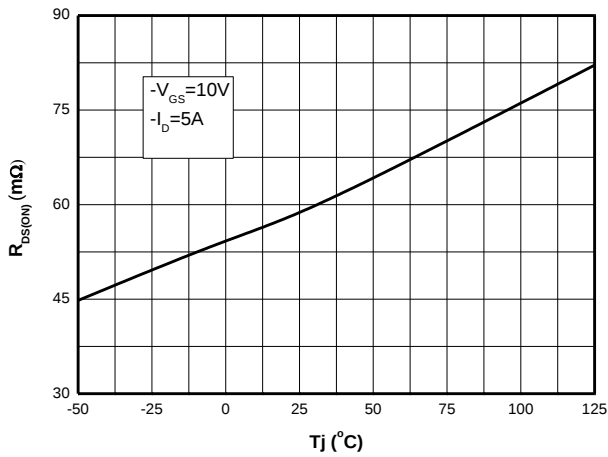
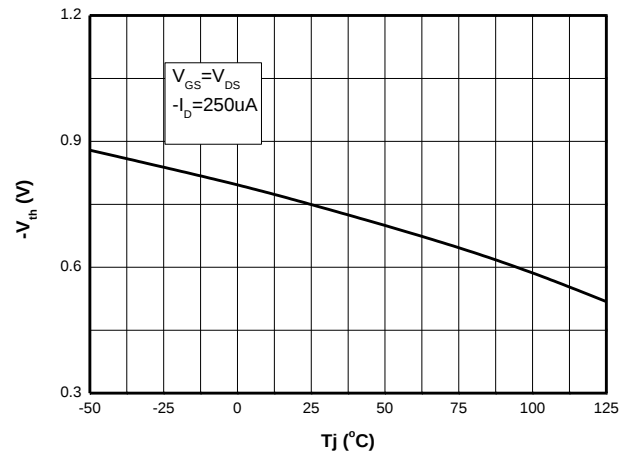
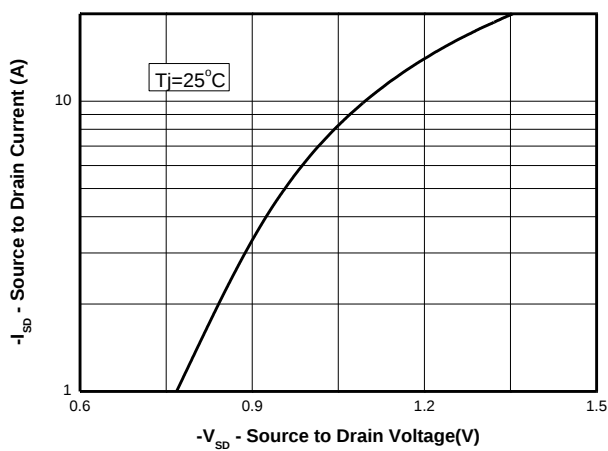
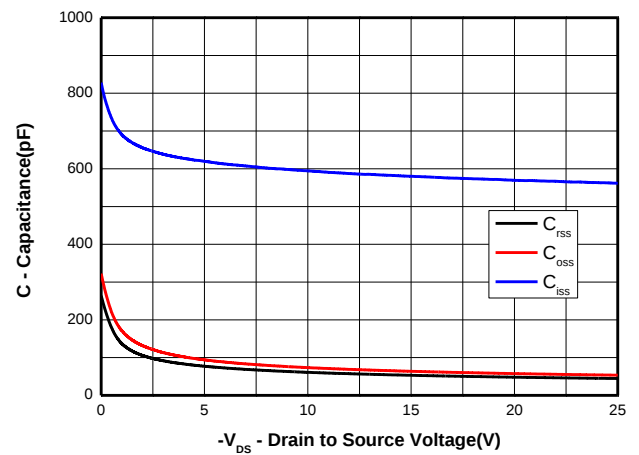
b Surface mounted on FR4 board using minimum pad size, 1oz copper

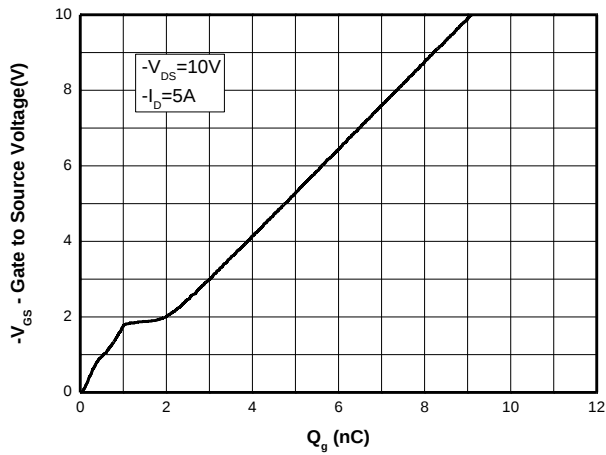
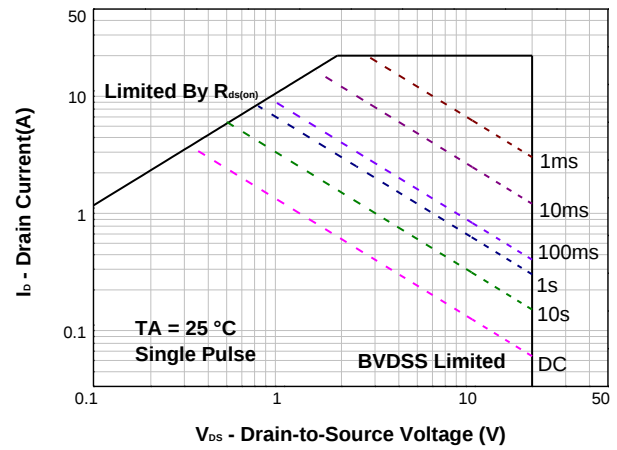
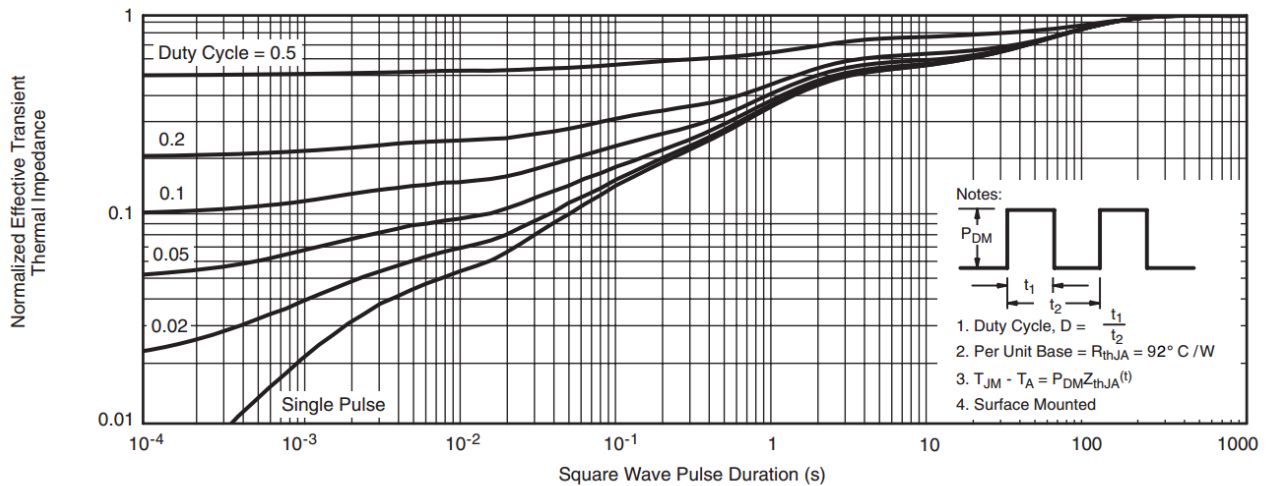
c Maximum junction temperature $T_J=150^{\circ}\text{C}$.

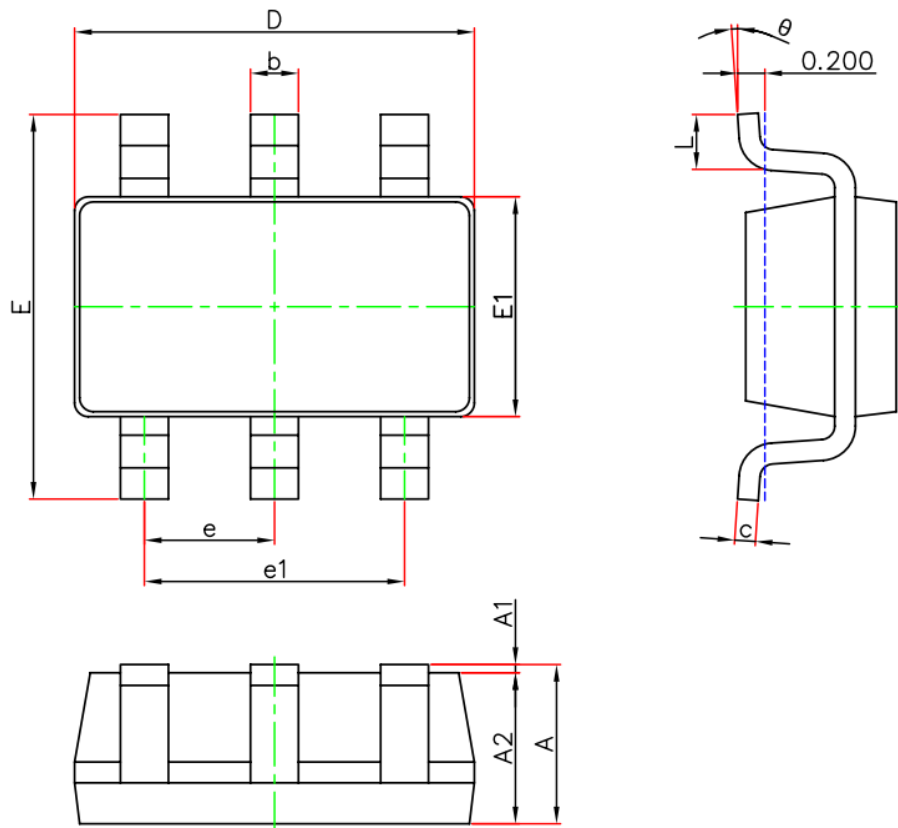
d Repetitive rating, pulse width limited by junction temperature, $t_p=10\mu\text{s}$, Duty Cycle=1%.

Electronics Characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0 V, I _D = -250uA	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20 V, V _{GS} = 0V			-1	uA
Gate-to-source Leakage Current	I _{GSS}	V _{DS} = 0 V, V _{GS} =±12V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _D = -250uA	-0.3	-0.7	-1.5	V
Drain-to-source On-resistance ^e	R _{DS(on)}	V _{GS} = -10V, I _D = -5A		60	75	mΩ
		V _{GS} = -4.5V, I _D = -4A		70	95	
		V _{GS} = -2.5V, I _D = -2.5A		100	150	
Forward Transconductance	g _{FS}	V _{DS} = -5 V, I _D = -0.45A		5		S
CHARGES, CAPACITANCES AND GATE RESISTANCE						
Input Capacitance	C _{ISS}	V _{GS} = 0 V, f =1.0MHz, V _{DS} = -15 V		471		pF
Output Capacitance	C _{OSS}			51		
Reverse Transfer Capacitance	C _{RSS}			46		
Total Gate Charge	Q _{G(TOT)}	V _{GS} = -10 V, V _{DS} = -10 V, I _D = -5A		7		nC
Gate-to-Source Charge	Q _{GS}			0.6		
Gate-to-Drain Charge	Q _{GD}			1.5		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	td(ON)	V _{GS} = -4.5V, V _{DS} = -15V, ID=-4A, R _G =5 Ω		12.8		ns
Rise Time	tr			12		
Turn-Off Delay Time	td(OFF)			50.4		
Fall Time	tf			44.4		
BODY DIODE CHARACTERISTICS						
Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = -0.9A		-0.84	-1.2	V

Typical Characteristics (Ta=25°C, unless otherwise noted)

Output characteristics

Transfer characteristics

On-Resistance vs. Junction temperature

Threshold voltage vs. Temperature

Body diode forward voltage

Capacitance


Total Gate Charge

Safe operating power

Transient thermal response (Junction-to-Ambient)

Package outline dimensions
SOT-23-6L


Symbol	Dimensions In Millimeters	
	Min	Max
A	1.05	1.25
A1	0.00	0.10
A2	1.05	1.15
b	0.30	0.50
c	0.10	0.20
D	2.82	3.02
E	2.65	2.95
E1	1.50	1.70
e	0.95 (BSC)	
L	0.30	0.60
e1	1.80	2.00
θ	0 °	8 °