

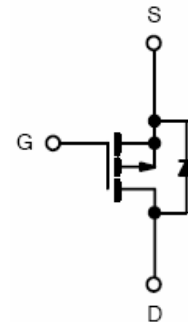
# WPM3401

## P-Channel Enhancement Mode MOSFET

### Description

The WPM3401 is the P-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology.

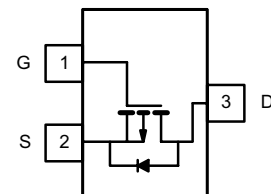
This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application, notebook computer power management and other battery powered circuits where high-side switching.



P-Channel MOSFET

### Features

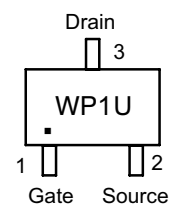
- -30V/-4.3A, RDS(ON) < 53mΩ @ VGS = -10V
- -30V/-3.4A, RDS(ON) < 56mΩ @ VGS = -4.5V
- Super high density cell design for extremely low RDS (ON)
- Exceptional on-resistance and maximum DC current capability
- SOT23-3 package design



Top View

### Application

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch



U = Date Code

WP1 = Specific Device Code

### Order information

Part Number	Package	Shipping
WPM3401-3/TR	SOT23-3	3000 Tape&Reel

**WPM3401**
**Absolute Maximum Ratings** (TA=25 °C unless otherwise specified)

Parameter	Symbol	Value	Unit
V <sub>DS</sub>	Drain-Source voltage	-30	V
V <sub>GS</sub>	Gate-Source Voltage	±12	V
I <sub>D</sub>	Continuous Drain Current	Steady-State TA=25°C	-4.6
		Steady-State TA=70°C	-3.6
I <sub>DM</sub>	Pulse Drain Current	-20	A
P <sub>D</sub>	Power Dissipation	TA=25°C	1.3
		TA=70°C	0.8
T <sub>J</sub>	Operating Junction Temperature Range	-55~150	°C
T <sub>stg</sub>	Storage Temperature Range		
R <sub>θJA</sub>	Thermal Resistance-Junction to Ambient	95	°C/W

**Electrical Characteristics**

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250uA	-0.5	-1.0	-1.5	V
Gate Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-24V, V <sub>GS</sub> =0V			-1	uA
		V <sub>DS</sub> =-24V, V <sub>GS</sub> =0V T <sub>J</sub> =85°C			-5	
On State Drain Current (Pulse)	I <sub>D(on)</sub>	V <sub>DS</sub> = -5V, V <sub>GS</sub> =-4.5V	-10			A
Drain-Source On-Resistance	R <sub>DSON</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-4.3A		0.038	0.053	Ω
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3.5A		0.043	0.056	
Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> =-15V, I <sub>D</sub> =-4.3A		13		S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> = -1.0A, V <sub>GS</sub> =0V		-0.75	-1.5	V

**Dynamic**

Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =-10V I <sub>D</sub> = -4.3A		27		nC	
Gate-Source Charge	Q <sub>gs</sub>			1.7			
Gate-Drain Charge	Q <sub>gd</sub>			5			
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =0V f=1MHz		1250		pF	
Output Capacitance	C <sub>oss</sub>			106			
Reverse Transfer Capacitance	C <sub>rss</sub>			90			
Turn-On Time	t <sub>d(on)</sub>	V <sub>DD</sub> =-15V, R <sub>L</sub> =15Ω I <sub>D</sub> =-1.0A, V <sub>GEN</sub> =-10V R <sub>G</sub> =6Ω		10		nS	
	t <sub>r</sub>			18			
Turn-Off Time	t <sub>d(off)</sub>				60		
	t <sub>f</sub>				9		