

## PW3401A

### 30V P-Channel MOSFET

-4.2A -30V;  $R_{DS(ON)typ}=40m\Omega@-10V$ ,  $R_{DS(ON)typ}=46m\Omega@-4.5V$ ,  
 $R_{DS(ON)typ}=58m\Omega@-2.5V$

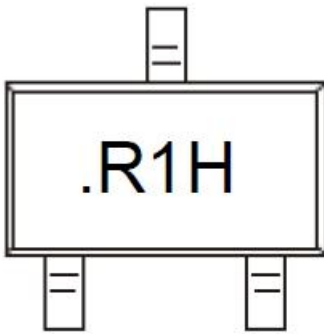
#### FEATURE

- TrenchFET Power MOSFET
- Exceptional on-resistance and maximum DC current capability

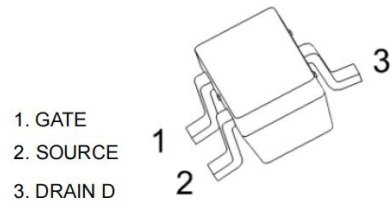
#### Application

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

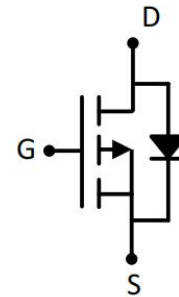
#### MARKING:



SOT-23-3L



Schematic diagram



#### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	-4.2	A
Power Dissipation	$P_D$	0.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	313	$^{\circ}C/W$
Junction Temperature	$T_J$	150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}C$

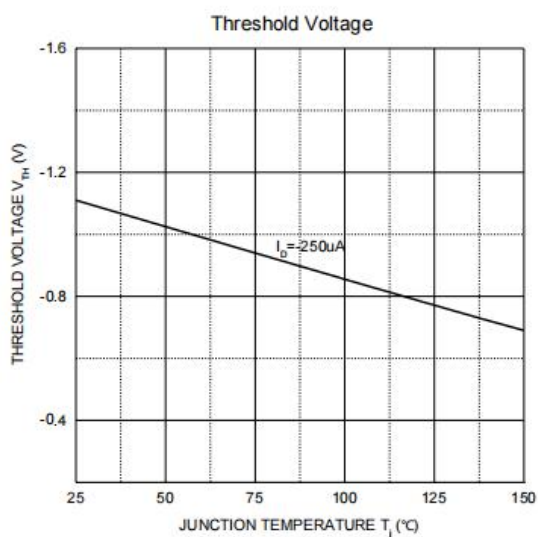
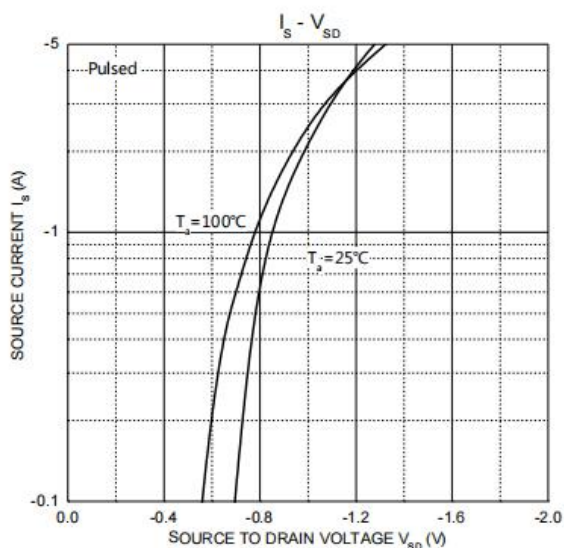
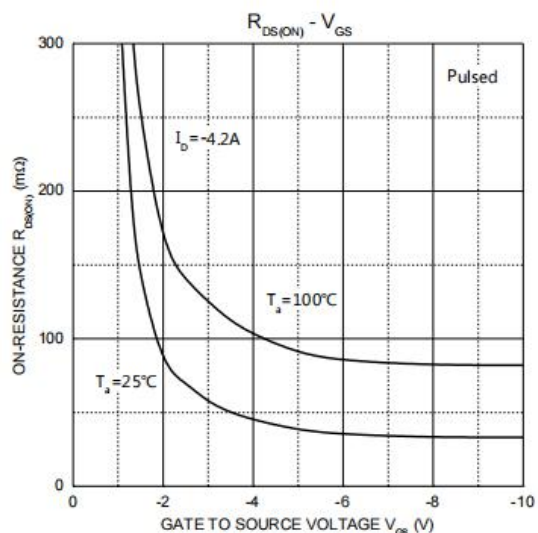
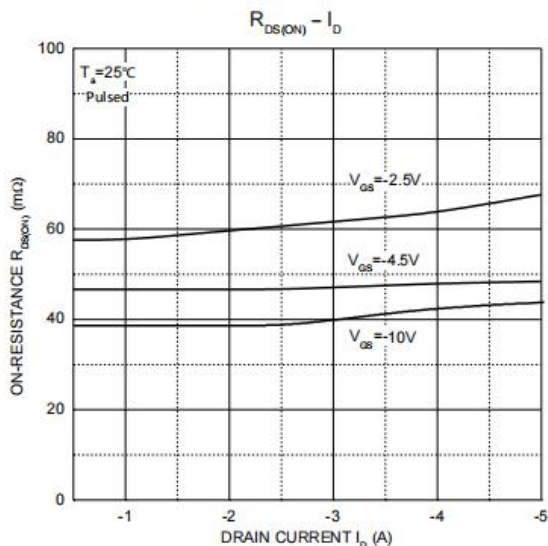
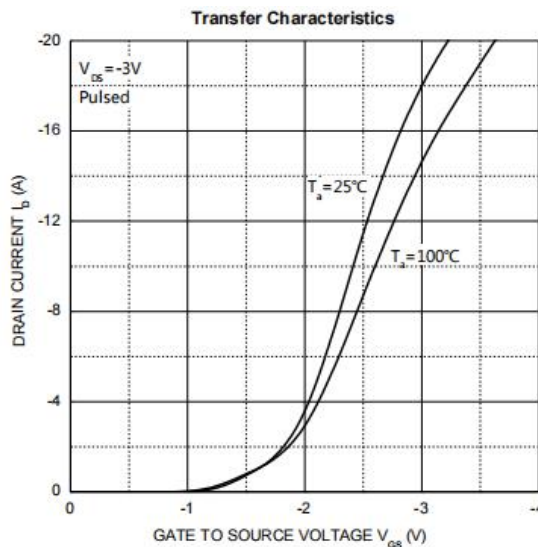
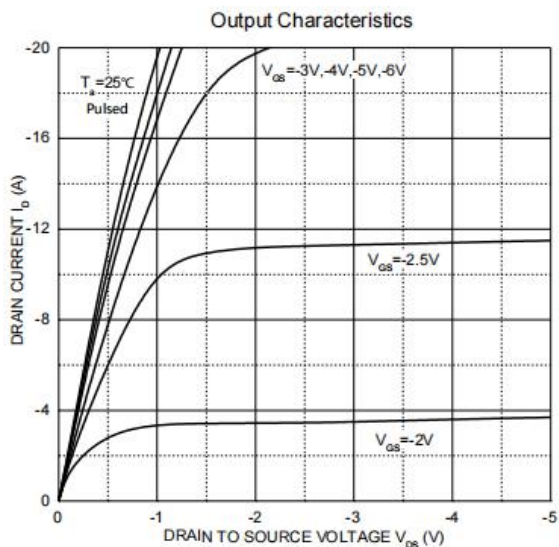
**MOSFET ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-30			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -24V, V <sub>GS</sub> = 0V			-1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V			±100	nA
Gate threshold voltage <sup>(1)</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.7		-1.3	V
Drain-source on-resistance <sup>(1)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.0A		40	52	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -3.5A		46	60	
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -2.5A		58	80	
Forward tranconductance	g <sub>FS</sub>	V <sub>DS</sub> = -5V, I <sub>D</sub> = -5A	7			S
<b>Dynamic characteristics<sup>(2)</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1MHz		1050		pF
Output Capacitance	C <sub>oss</sub>			127		
Reverse Transfer Capacitance	C <sub>rss</sub>			85		
<b>Switching Characteristics<sup>(2)</sup></b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10V, V <sub>DS</sub> = -15V, R <sub>L</sub> = 3.6Ω, R <sub>GEN</sub> = 6Ω			6.5	ns
Turn-on rise time	t <sub>r</sub>				3.5	
Turn-off delay time	t <sub>d(off)</sub>				40	
Turn-off fall time	t <sub>f</sub>				13	
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage <sup>(1)</sup>	V <sub>DS</sub>	I <sub>S</sub> = -1A, V <sub>GS</sub> = 0V			-1	V

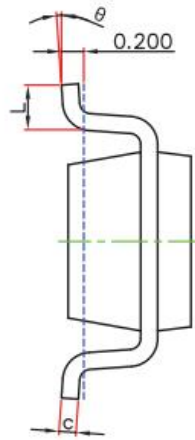
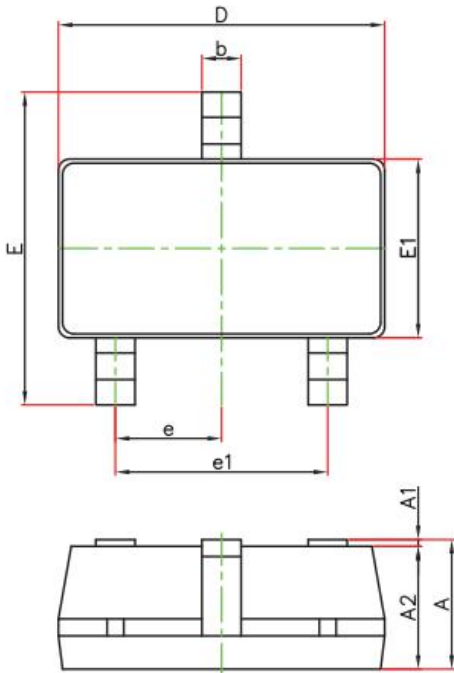
**Notes:**

1. Pulse Test ;Pulse Width ≤300μs, Duty Cycle ≤2%.
2. Guaranteed by design, not subject to production testing.

**Typical Electrical and Thermal Characteristics**



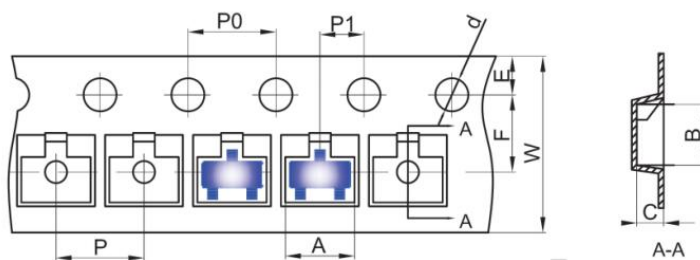
**SOT-23-3L Package Information**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
$\theta$	0°	8°	0°	8°

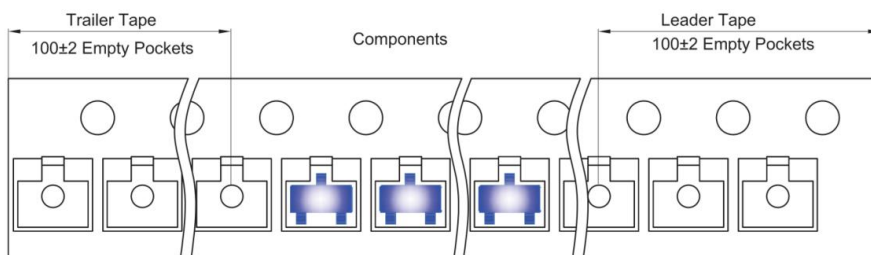
SOT-23 Tape and Reel

SOT-23-3L Embossed Carrier Tape

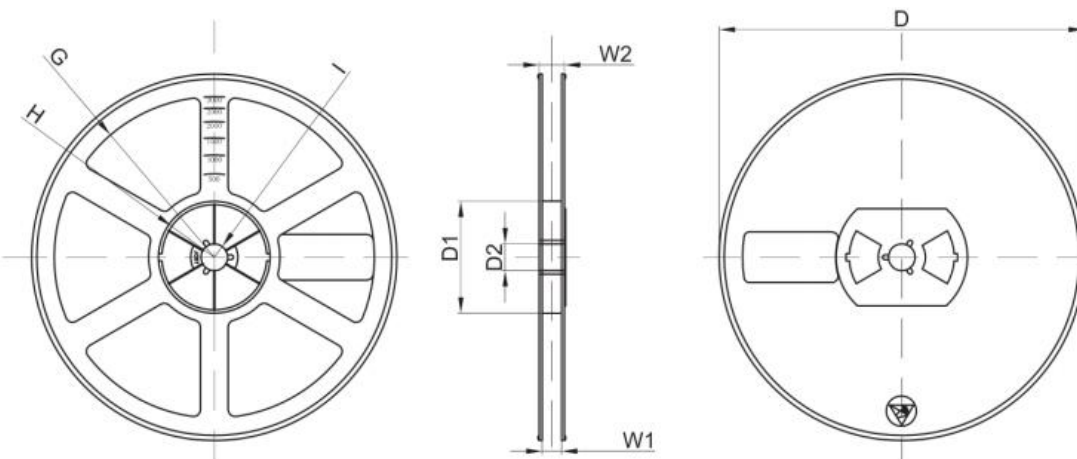


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23-3L	3.18	3.28	1.32	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23-3L Tape Leader and Trailer



SOT-23-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø180.00	60.00	13.00	R78.00	R25.60	R6.50	9.50	13.10

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	