



### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
30V	38mΩ@10V	4A
	40mΩ@4.5V	
	48mΩ@2.5V	

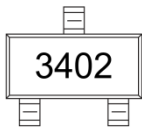
### Feature

- TrenchFET Power MOSFET
- Excellent  $R_{DS(on)}$  and Low Gate Charge

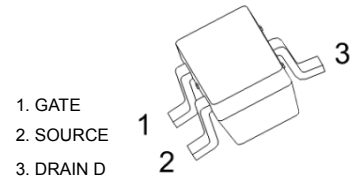
### Application

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

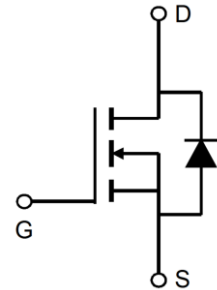
### MARKING:



### SOT-23-3L



### Schematic diagram



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	±12	V
Continuous Drain Current	$I_D$	4	A
Pulsed Drain Current <sup>(1)</sup>	$I_{DM}$	15	A
Power Dissipation	$P_D$	0.45	W
Thermal Resistance from Junction to Ambient <sup>(2)</sup>	$R_{\theta JA}$	313	$^{\circ}\text{C/W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}\text{C}$

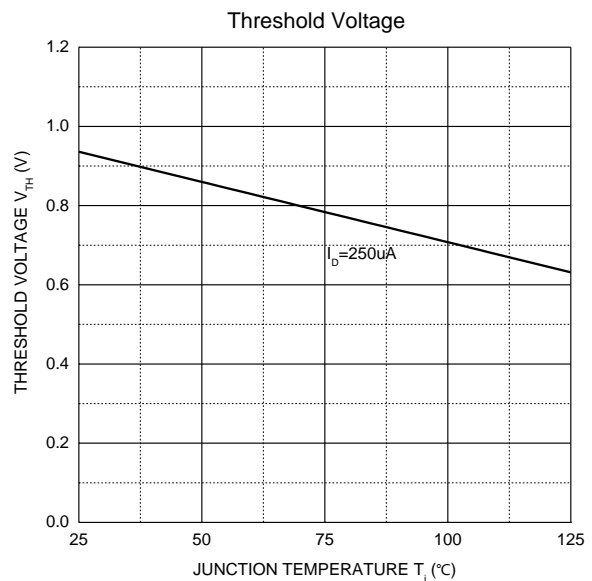
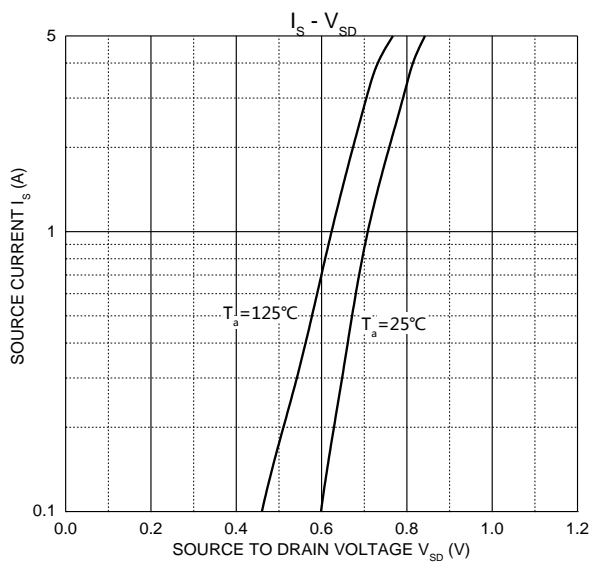
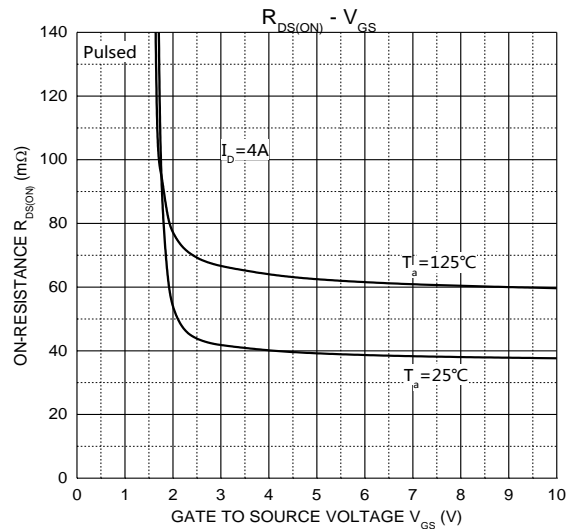
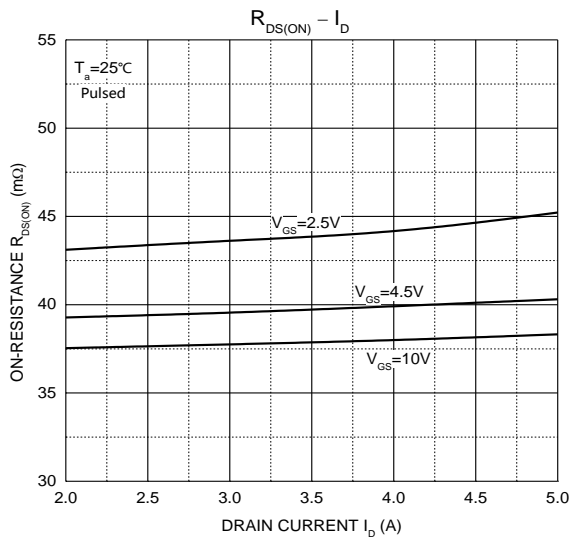
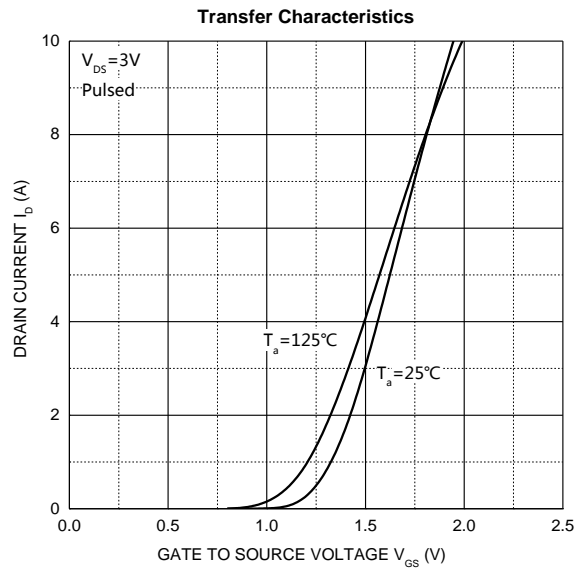
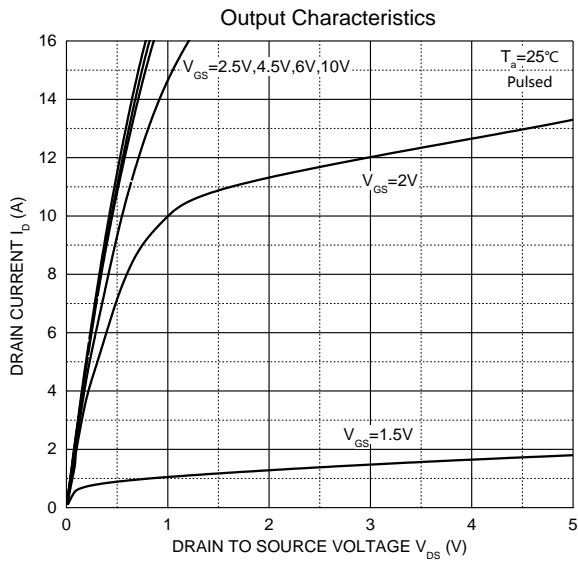
**MOSFET ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise noted)**

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> =30V, 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>(3)</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	0.5	0.9	1.5	V
Drain-source on-resistance <sup>(3)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =4A		38	52	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =3A		40	65	
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =2A		48	85	
Forward tranconductance <sup>(3)</sup>	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =3.6A		13		S
<b>DYNAMIC CHARACTERISTICS<sup>(4)</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz		389		pF
Output Capacitance	C <sub>oss</sub>			54		
Reverse Transfer Capacitance	C <sub>rss</sub>			40		
Gate resistance	R <sub>g</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =0V, f =1MHz		3.5		Ω
<b>SWITCHING CHARACTERISTICS<sup>(4)</sup></b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =3.75Ω, R <sub>GEN</sub> =6Ω		3.5		ns
Turn-on rise time	t <sub>r</sub>			1.2		
Turn-off delay time	t <sub>d(off)</sub>			22		
Turn-off fall time	t <sub>f</sub>			2.2		
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =4A		4.4		nC
Gate-source charge	Q <sub>gs</sub>			0.7		
Gate-drain charge	Q <sub>gd</sub>			1.3		
<b>SOURCE-DRAIN DIODE CHARACTERISTICS</b>						
Body Diode Voltage <sup>(3)</sup>	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> = 0V			1	V
Continuous Source-Drain Diode Current	I <sub>S</sub>	T <sub>C</sub> =25°C			1.5	A

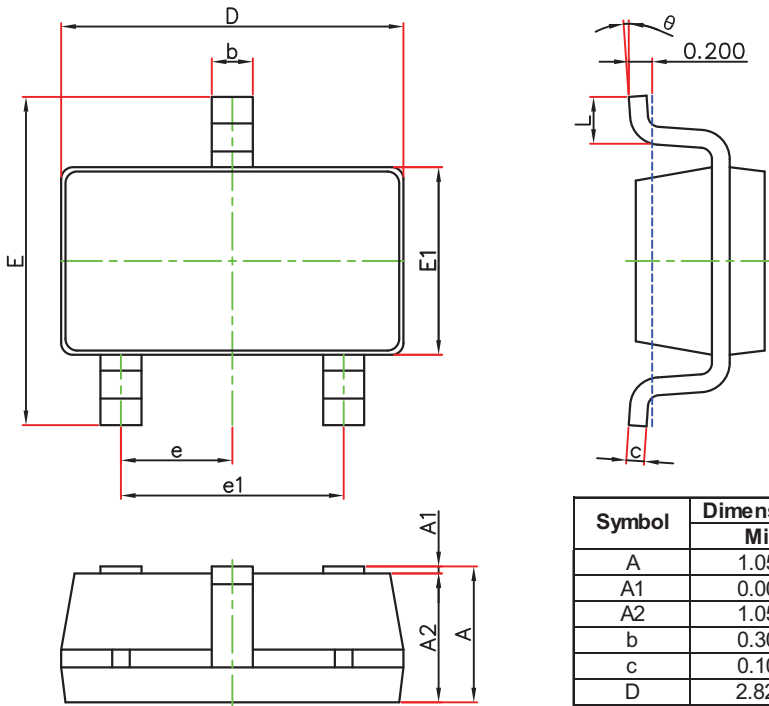
**Notes:**

1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , t<sub>s</sub>≤10s.
3. Pulse Test : Pulse Width≤80μs, Duty Cycle≤0.5%.
4. Guaranteed by design, not subject to producing.

**Typical Electrical and Thermal Characteristics**



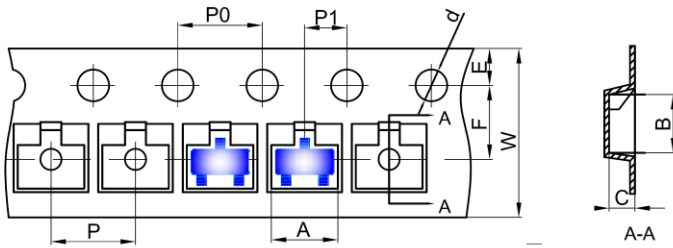
## SOT-23-3L Package Information



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
θ	0°	8°	0°	8°

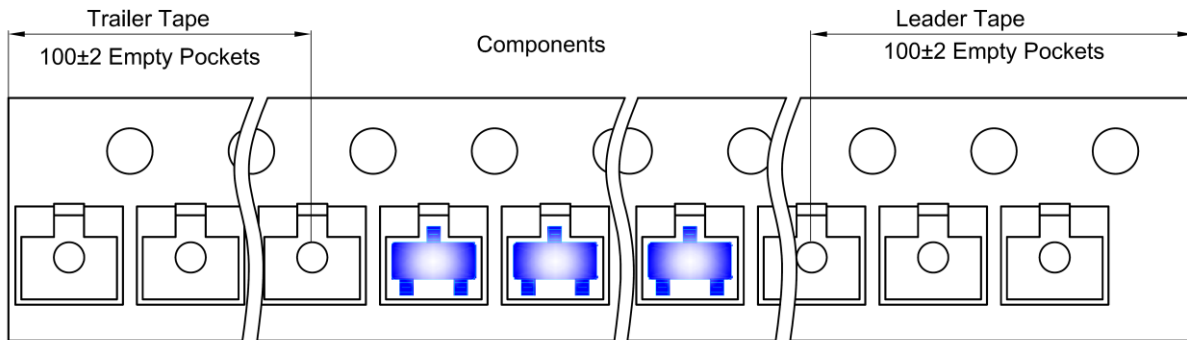
**SOT-23-3L Tape and Reel**

**SOT-23-3L Embossed Carrier Tape**

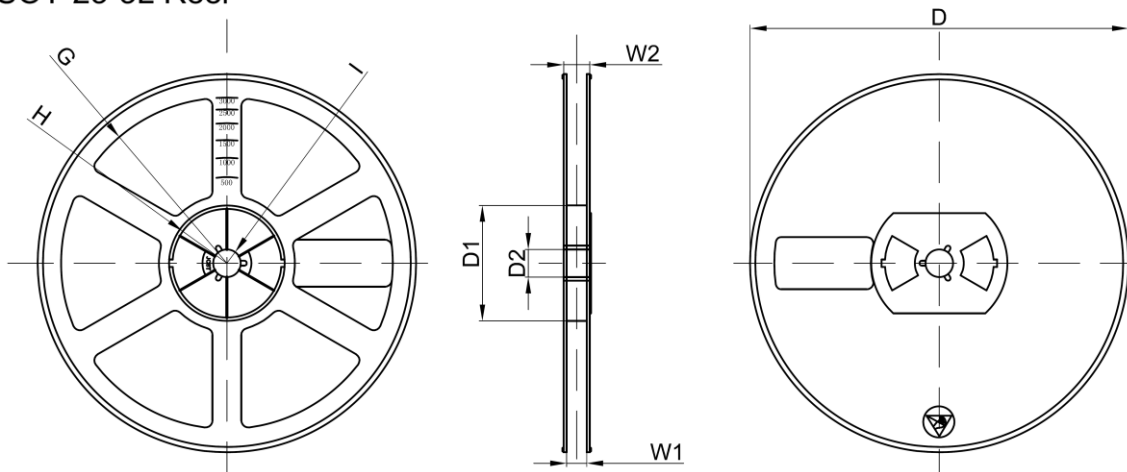


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23-3L	3.18	3.28	1.32	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

**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	