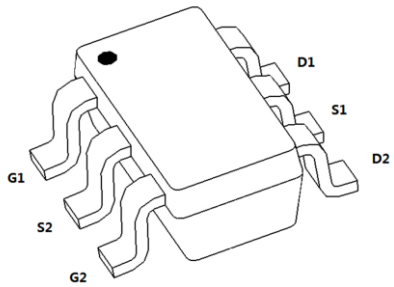
GP3922

20V Dual N-Channel MOSFET

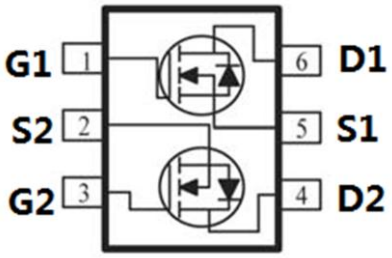
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	30mΩ@4.5V	4A
	40mΩ@2.5V	

SOT-23-6L



Schematic diagram



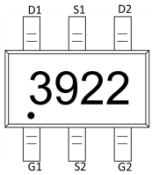
Feature

- Low on-resistance
- Low drive current
- Low RDS(on) Provides Higher Efficiency and Extends Battery Life
- Fast switching speed
- High performance trench technology

Application

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

MARKING:



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±8	V
Continuous Drain Current(1)	I_D	4	A
Continuous Source Current (Diode Conduction)(1)	I_S	1.8	A
Pulsed Drain Current(2)	I_{DM}	15	A
Power Dissipation(1)	P_D	0.45	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	277	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

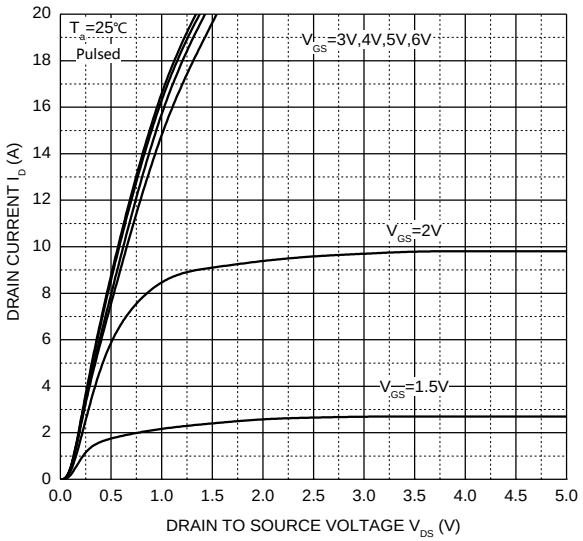
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20	22		V
Zero gate voltage drain current	I_{DSS}	V_{DS} =16V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±8V, V_{DS} = 0V			±0.1	μA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.4	0.8	1.2	V
On-State Drain Current(1)	$I_{D(on)}$	V_{DS} =5V, V_{GS}=4.5V	6			A
Drain-source on-resistance(1)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =3.6A		30	39	mΩ
		V_{GS} =2.5V, I_D =3.1A		40	55	
Forward tranconductance(1)	g_{FS}	V_{DS} =15V, I_D =2A	8			S
Dynamic characteristics						
Input Capacitance	C_{iss}	VDS =15V,V_{GS} =0V,f=1MHz		720		pF
Output Capacitance	C_{oss}			70		
Reverse Transfer Capacitance	C_{rss}			65		
Total gate charge	Q_g	V_{DS} =10V,VGS =4.5V,I_D =2.0A		13		nC
Gate-source charge	Q_{gs}			3.1		
Gate-drain charge	Q_{gd}			3.7		
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	V_{DS}=10V, R_L=5Ω, I_D=2A, VG$_{NE}$=4.5V, R_{GNE}=6Ω		9		ns
Turn-on rise time	t_r			20		
Turn-off delay time	$t_{d(off)}$			58		
Turn-off fall time	t_f			16		
Source-Drain Diode characteristics						
Diode Forward voltage	V_{DS}	V_{GS} =0V, I_S=0.9A			1.2	V

Notes:

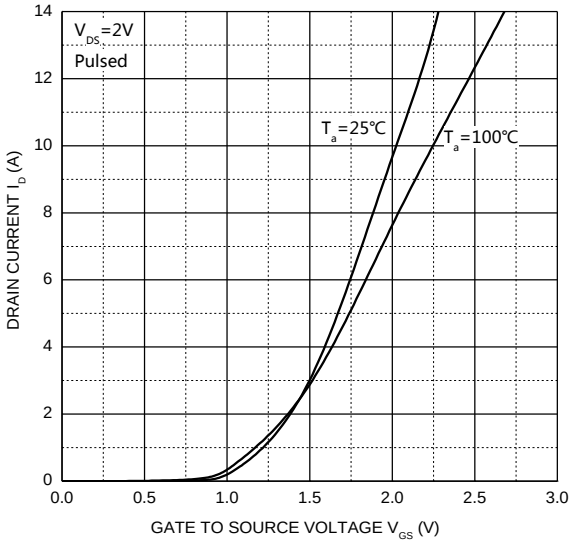
1. Pulse test：PW≦300us duty cycle≦2%.
2. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

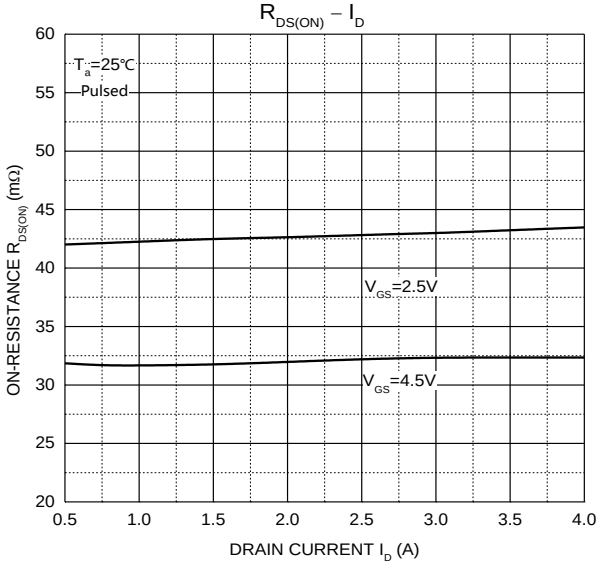
Output Characteristics



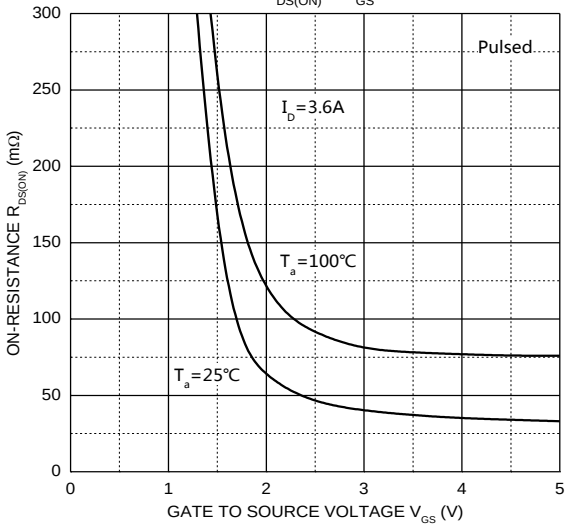
Transfer Characteristics



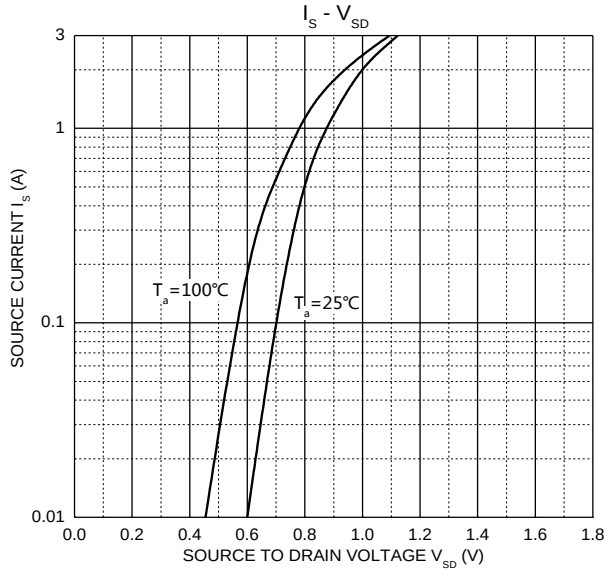
$R_{DS(ON)}$ – I_D



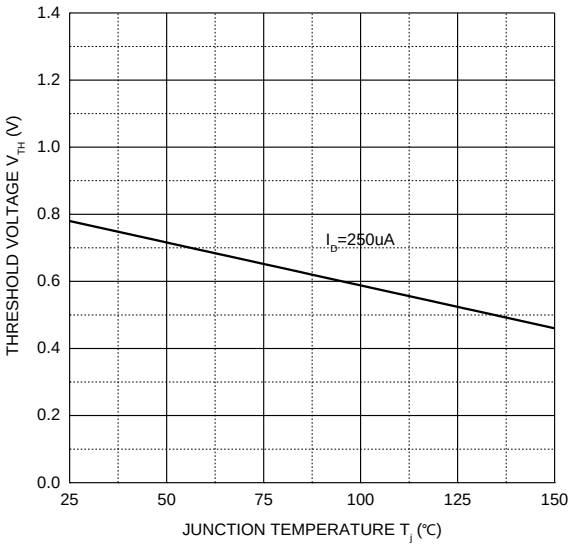
$R_{DS(ON)}$ - V_{GS}



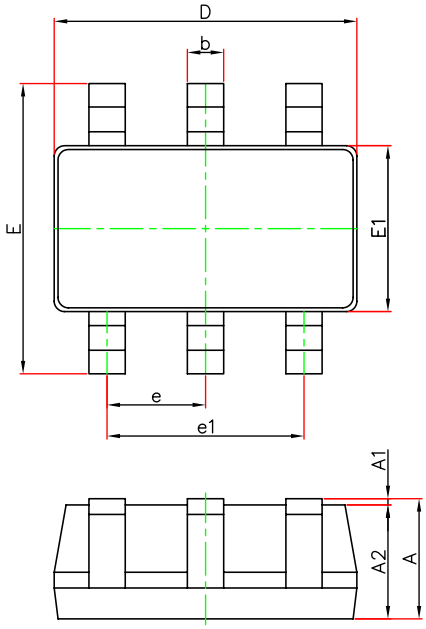
I_S - V_{SD}

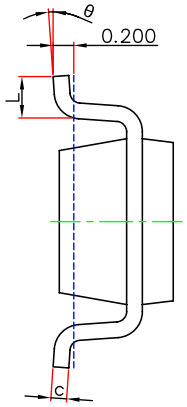


Threshold Voltage



SOT-23-6L Package Information

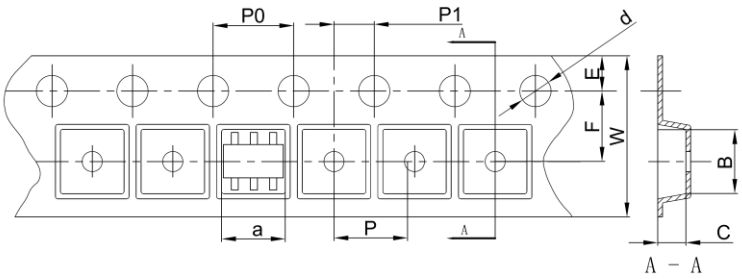




Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		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°

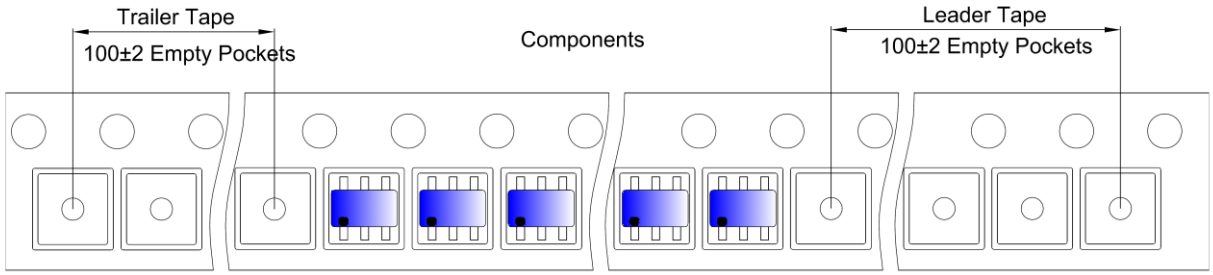
SOT-23-6L Tape and Reel

SOT-23-6L Embossed Carrier Tape

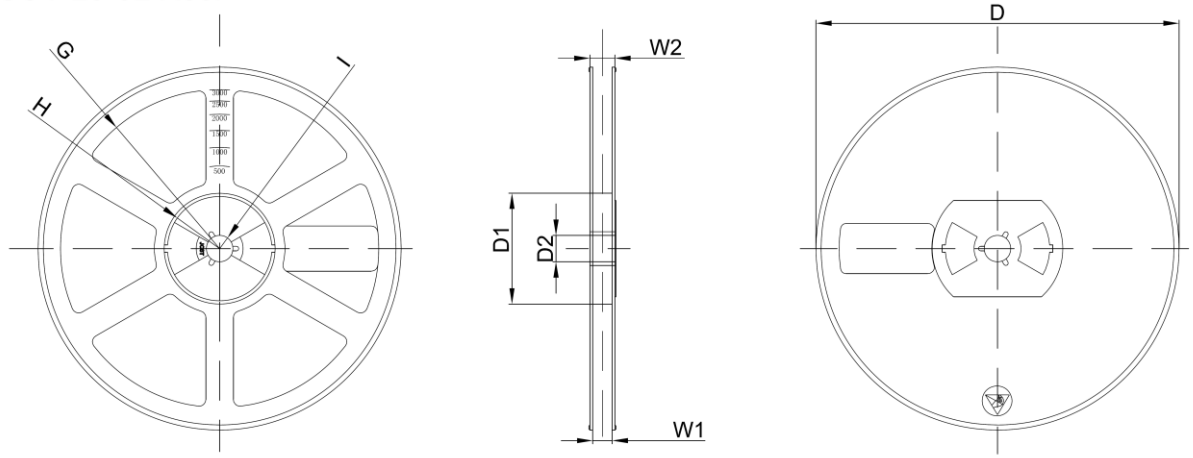


Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOT-23-6L	3.17	3.23	1.37	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23-6L Tape Leader and Trailer



SOT-23-6L 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	