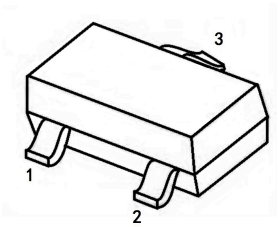
KY2310L

60V N-Channel Mosfet

FEATURES

- $R_{DS(ON)}$ ≤ 100mΩ (83mΩ Typ.) @V_{GS}=10V
- $R_{DS(ON)}$ ≤ 120mΩ(91mΩ Typ.) @VGS=4.5V

SOT-23

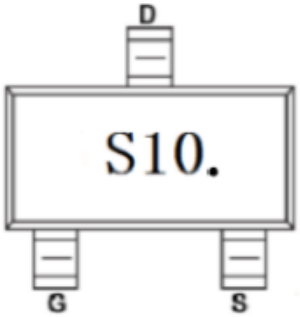


1. GATE
2. SOURCE
3. DRAIN

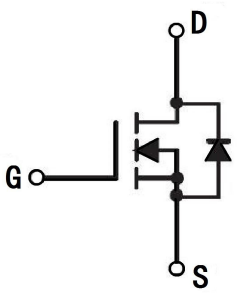
APPLICATIONS

- Battery Switch
- DC/DC Converter

MARKING



N-CHANNEL MOSFET



MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	60	V
V_{GSS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	3	A
I_{DM}	Pulsed Drain Current	10	A
P_D	Power Dissipation	0.35	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	℃/W
T_J	Junction Temperature	150	℃
T_{STG}	Storage Temperature Range	-55 ~+150	℃

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MOSFET ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS} = 0V,I_D = 250μA	60	64	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 60V, V_{GS} = 0V, T_J = 25℃	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	V_{GS} = ±20V,V_{DS} = 0V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} =V_{GS},I_D = 250μA	0.65	0.95	1.5	V
$R_{DS(on)}$	Static Drain-Source On-Resistance note1	V_{GS} =10V, I_D =3A	-	83	100	mΩ
		V_{GS} =4.5V, I_D=3A		91	120	
Dynamic Characteristics note2						
C_{iss}	Input Capacitance	V_{DS} =30V, V_{GS} = 0V, f = 1.0MHz	-	247	-	pF
C_{oss}	Output Capacitance		-	34	-	pF
C_{rss}	Reverse Transfer Capacitance			19.5	-	pF
Q_g	Total Gate Charge	V_{DS}=30V, I_D=3A, V_{GS}=4.5V,	-	6	-	nC
Q_{gs}	Gate-Source Charge		-	1	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	1.3	-	nC
Switching Characteristics note2						
$t_{d(on)}$	Turn-On Delay Time	V_{GS} = 10V, V_{DS}=30V, I_D=1.5A, R_{GEN}=1Ω	-		6	ns
t_r	Turn-On Rise Time		-		15	ns
$t_{d(off)}$	Turn-Off Delay Time		-		15	ns
t_f	Turn-Off Fall Time		-		10	ns
Drain-Source Diode Characteristics and Maximum Ratings						
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_{SD}=3A T_J = 25℃	-	0.8	1.1	V

Notes: 1. Pulse Test : Pulse Width < 300μs, Duty Cycle ≤2%.

2. Guaranteed by design, not subject to productiontesting.

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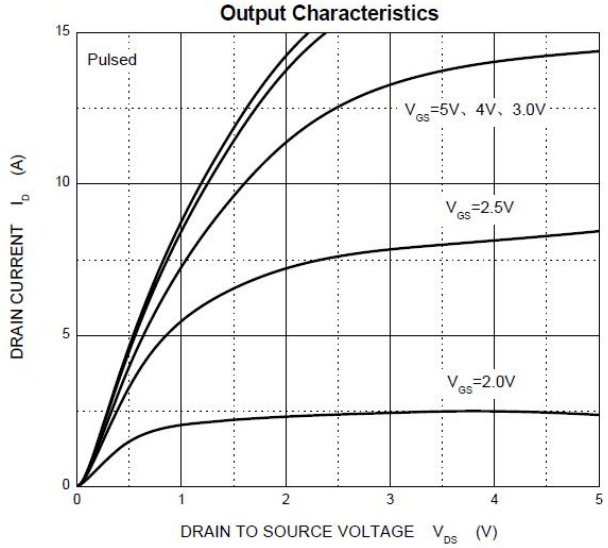
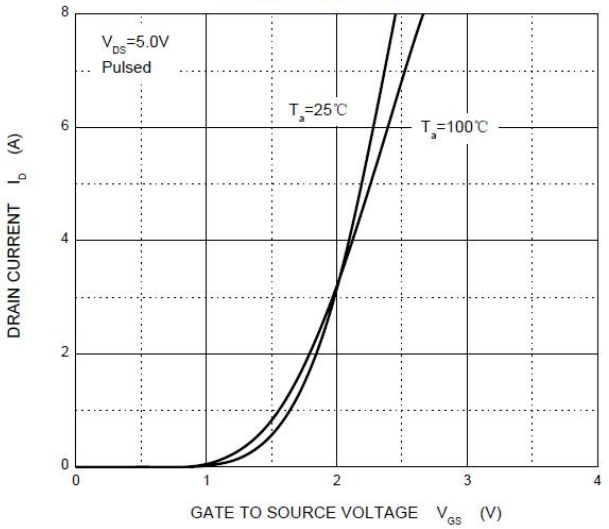
TYPICAL PERFORMANCE CHARACTERISTICS

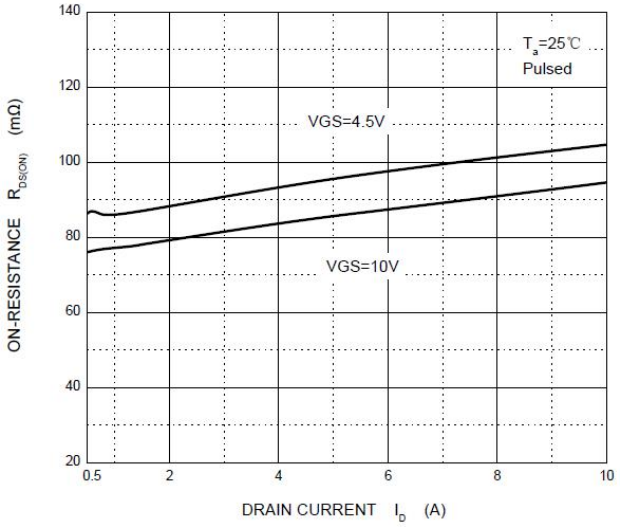
Output Characteristics



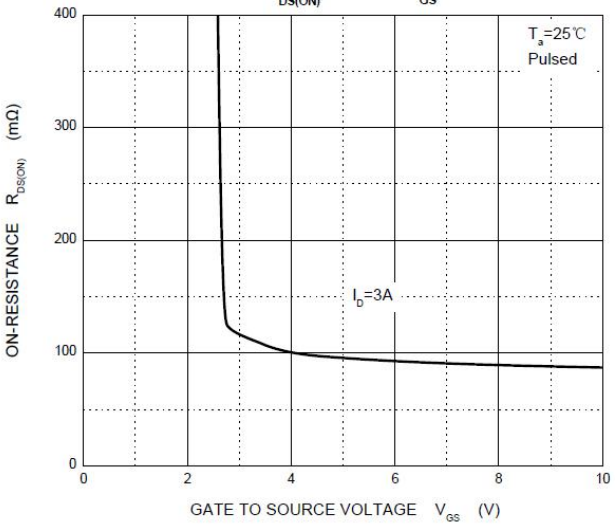
Transfer Characteristics



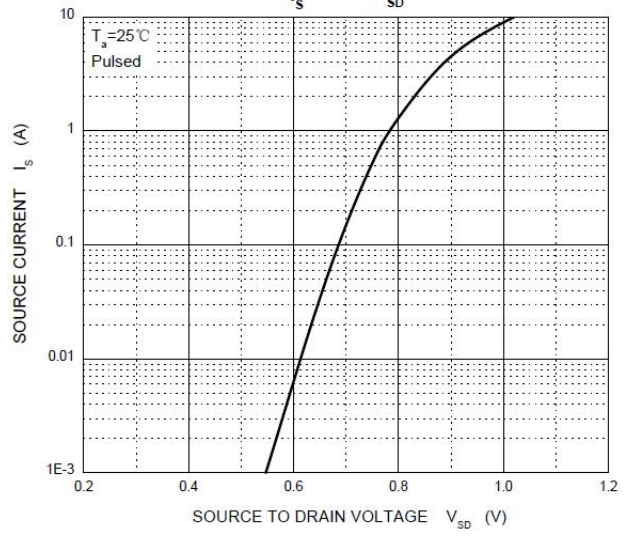
$R_{DS(ON)}$ —— I_D



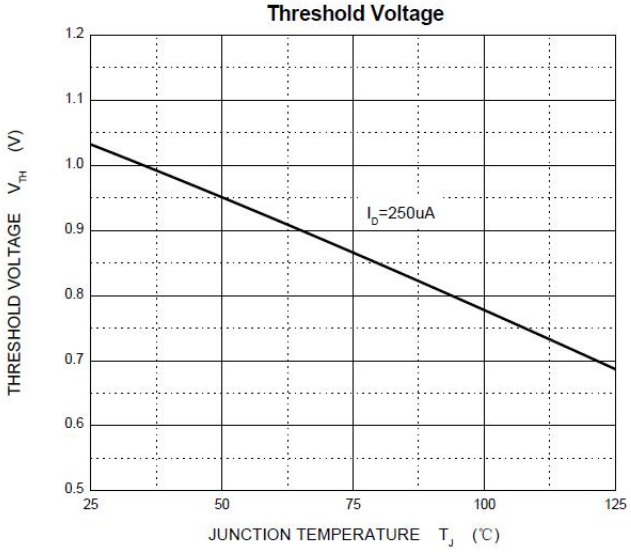
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



Threshold Voltage



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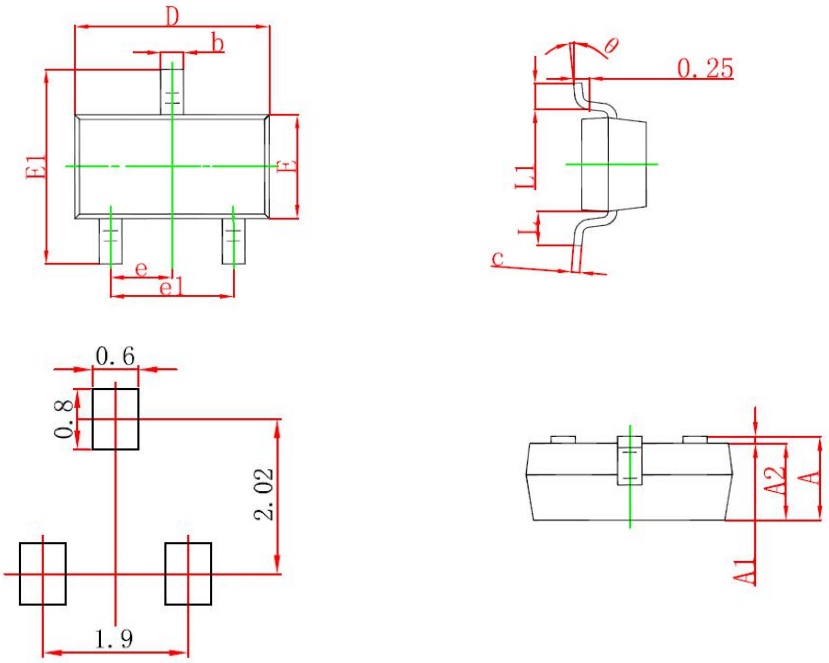
SOT-23 PACKAGE OUTLINE DRAWING



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°