

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	5.5Ω@10V	0.17A
	5.9Ω@4.5V	

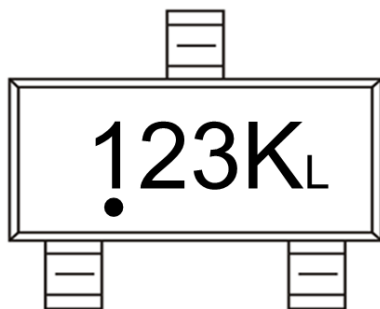
Feature

- Surface Mount Package
- High Density Cell Design for Extremely Low RDS(ON)
- Voltage Controlled Small Signal Switch
- Rugged and Reliable
- ESD protected

Application

- Small Servo Motor Controls
- Power MOSFET Gate Drivers
- Switching Application

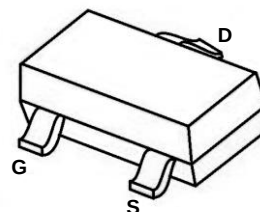
MARKING:



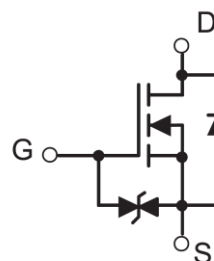
ABSOLUTE MAXIMUM RATINGS (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current ^{1,2}	I_D	0.17	A
Pulsed Drain Current (tp=10μs)	I_{DM}	0.68	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient ^{1,2}	$R_{θJA}$	357	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

SOT-23



Schematic diagram



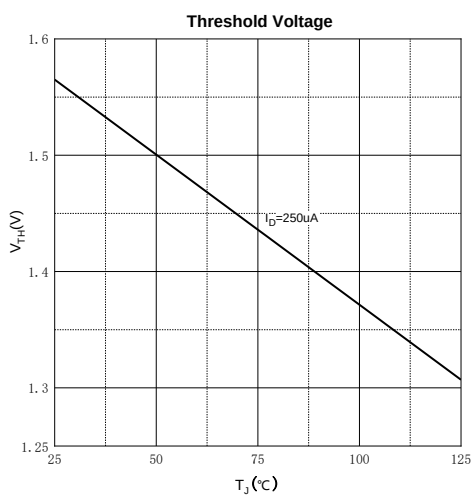
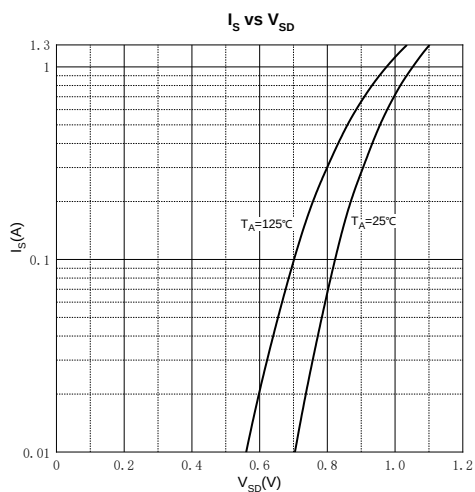
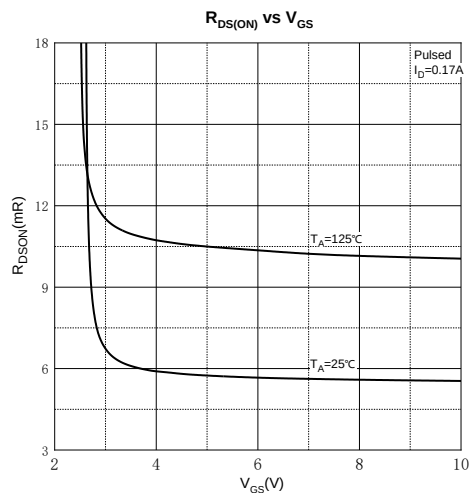
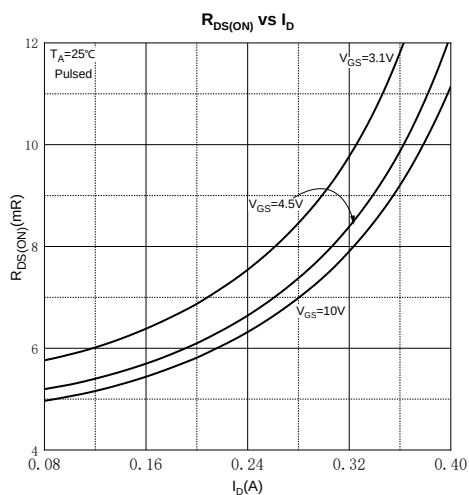
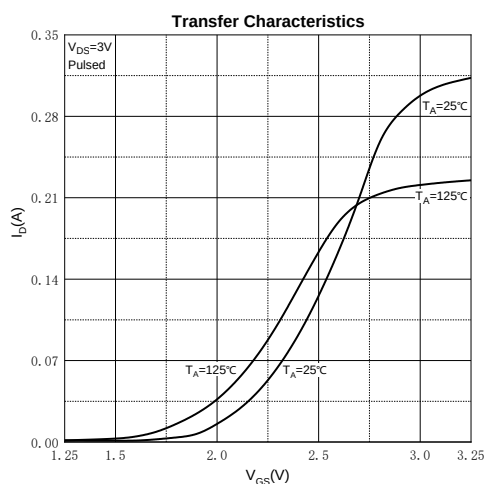
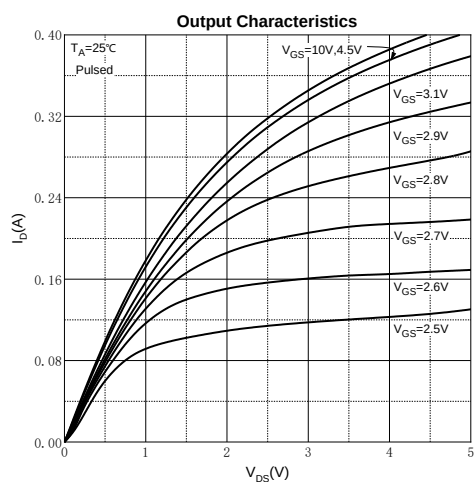
MOSFET ELECTRICAL CHARACTERISTICS($T_a = 25^\circ\text{C}$ unless otherwise noted)

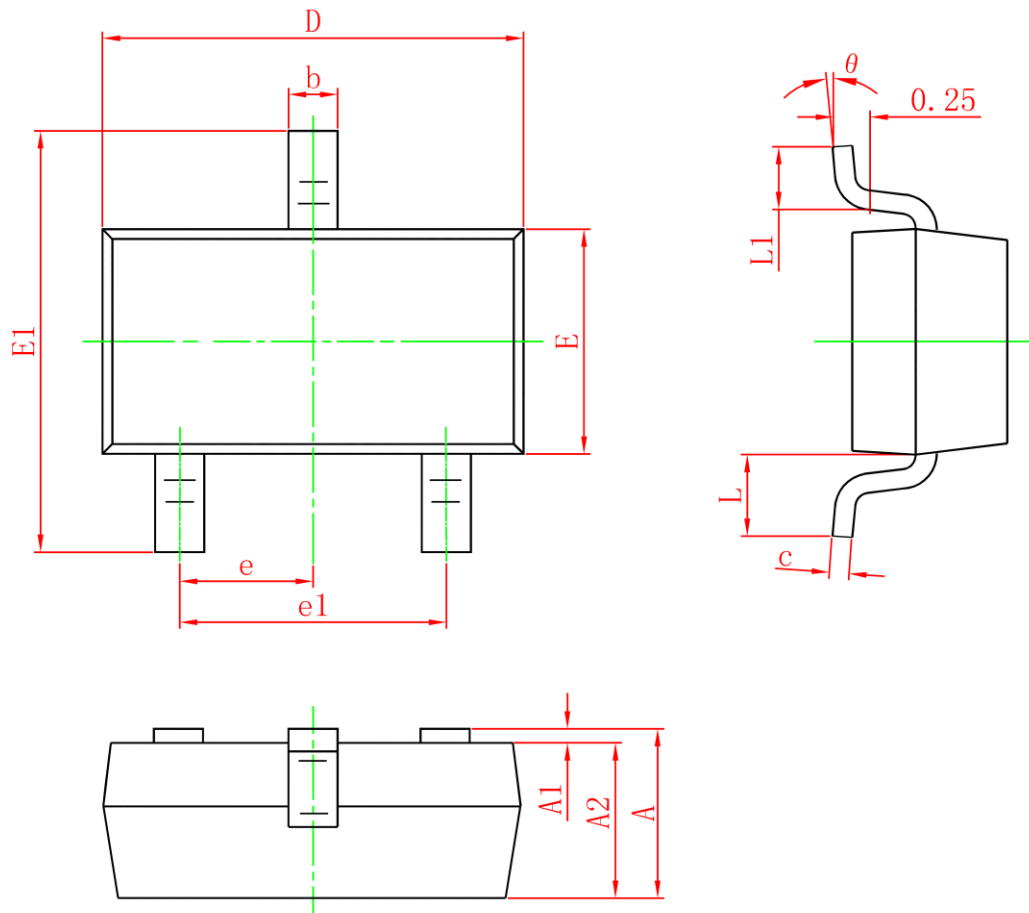
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 100V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±5	μA
On Characteristics ³						
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.6	3	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 0.17A		5.5	6.6	Ω
		V _{GS} = 4.5V, I _D = 0.17A		5.9	7.5	
Forward tranconductance	g _{FS}	V _{DS} = 10V, I _D = 0.17A	80			mS
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 45V, V _{GS} = 0V, f = 1MHz		19		pF
Output Capacitance	C _{oss}			3.4		
Reverse Transfer Capacitance	C _{rss}			1.8		
Switchig Characteristics						
Turn-on delay time	t _{d(on)}	V _{GS} = 10V, V _{DD} = 30V, I _D = 0.28A, R _G = 50Ω		8		ns
Turn-on rise time	t _r			8		
Turn-off delay time	t _{d(off)}			13		
Turn-off fall time	t _f			16		
Total Gate Charge	Q _g	V _{DS} =10V, I _D =0.22A, V _{GS} =10V		1.4		nC
Gate-Source Charge	Q _{gs}			0.15		
Gate-Drain Charge	Q _{gd}			0.2		
Diode Characteristics						
Diode forward voltage ³	V _{SD}	I _S = 0.17A, V _{GS} = 0V			1.2	V

Notes :

1. $R_{\theta JA}$ is measured with the device mounted on 1 in² FR4 board with 1oz. single side copper, in a still air environment with $T_A = 25^\circ\text{C}$.
2. $R_{\theta JA}$ is measured in the steady state
3. Pulse test : Pulse width $\leq 380\mu s$, duty cycle $\leq 2\%$.

Typical Characteristics



SOT-23 Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0	0.100	0	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	1.150	1.500	0.045	0.059
E1	2.250	2.650	0.089	0.104
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°