

### Product Summary

V <sub>(BR)DSS</sub>	R <sub>DS(on)TYP</sub>	I <sub>D</sub>
100V	2.1Ω@10V	0.17A
	2.2Ω@4.5V	

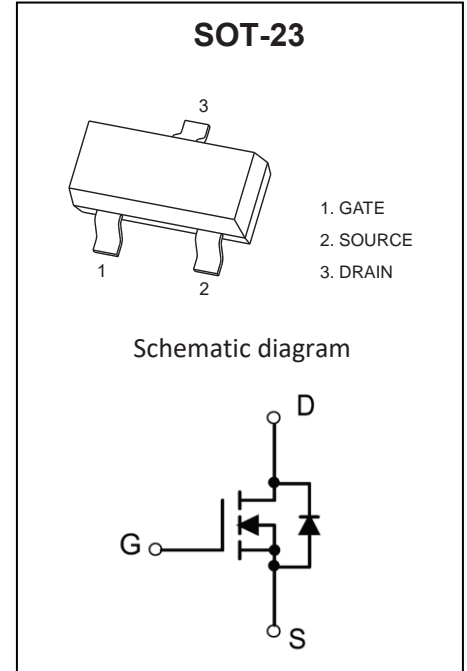
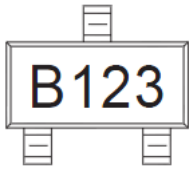
### Feature

- Surface Mount Package
- High Density Cell Design for Extremely Low R<sub>DS(ON)</sub>
- Voltage Controlled Small Signal Switch
- Rugged and Reliable

### Application

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

### MARKING:



### ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	100	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current	I <sub>D</sub>	0.17	A
Pulsed Drain Current (tp=10μs)	I <sub>DM</sub>	0.68	A
Power Dissipation	P <sub>D</sub>	0.35	W
Thermal Resistance from Junction to Ambient	R <sub>θJA</sub>	357	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55~ +150	°C

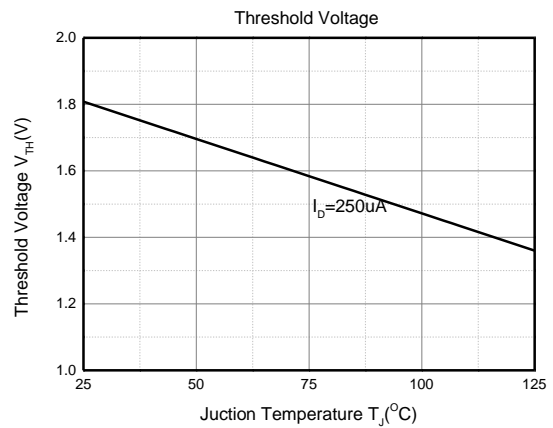
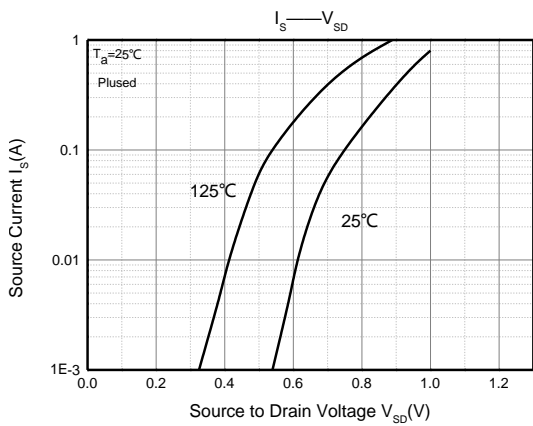
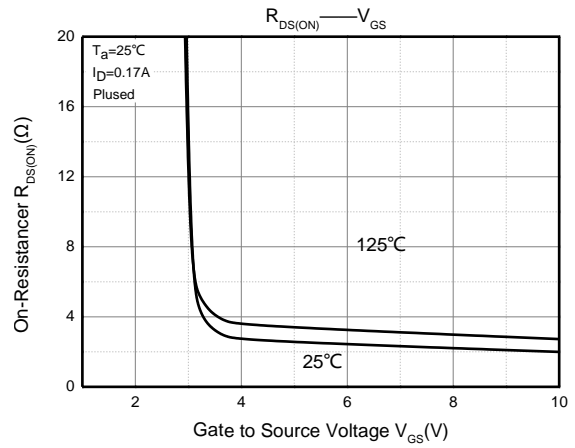
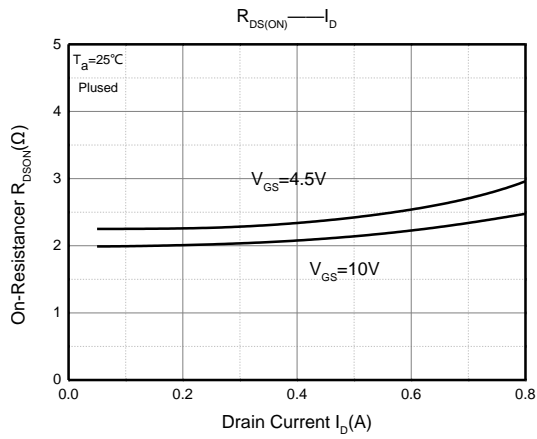
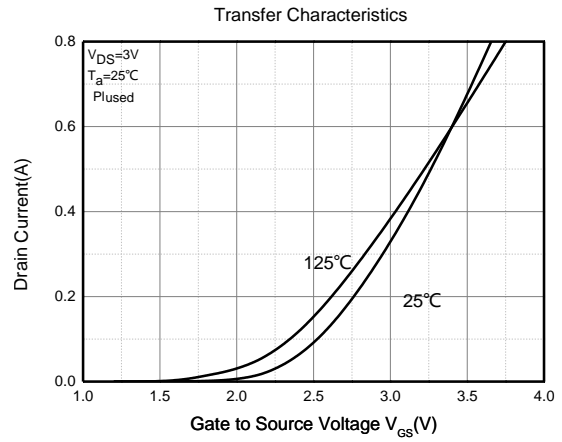
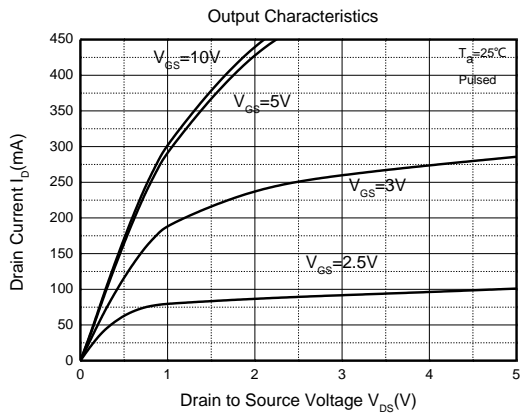
**MOSFET ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise noted)**

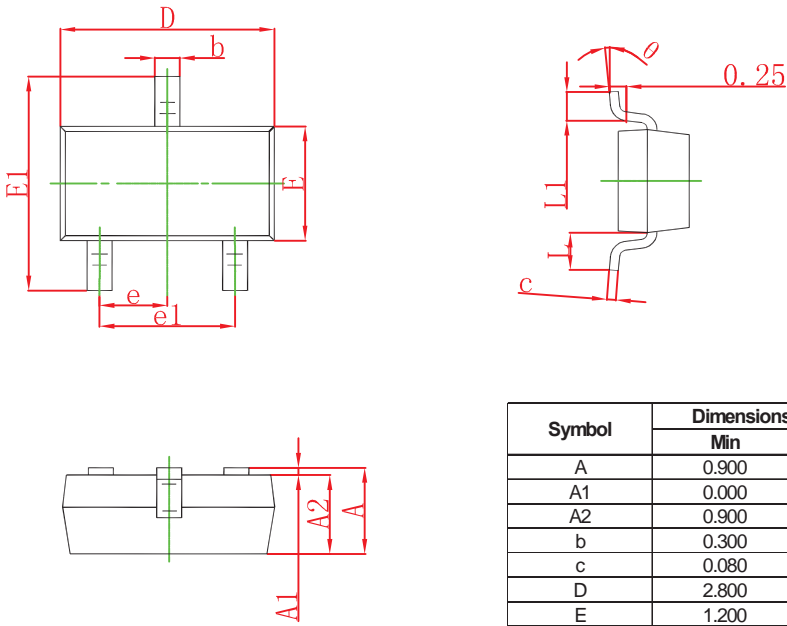
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	100			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = 80V, V <sub>GS</sub> = 0V			1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, 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	1	1.8	3	V
Drain-source on-resistance <sup>1</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 0.17A		2.1	4	Ω
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 0.17A		2.2	5	
Forward transconductance <sup>1</sup>	g <sub>FS</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 0.17A		0.45		S
Diode forward voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>S</sub> = 0.17A, V <sub>GS</sub> = 0V		0.8	1.3	V
<b>Dynamic characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0V, f = 1MHz		32		pF
Output Capacitance	C <sub>oss</sub>			8		
Reverse Transfer Capacitance	C <sub>rss</sub>			2.6		
<b>Switching Characteristics</b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> = 10V, V <sub>DD</sub> = 30V, I <sub>D</sub> = 0.28A, R <sub>GEN</sub> = 50Ω		7		ns
Turn-on rise time	t <sub>r</sub>			6		
Turn-off delay time	t <sub>d(off)</sub>			10		
Turn-off fall time	t <sub>f</sub>			9		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 0.22A, V <sub>GS</sub> = 10V		1.5		nC
Gate-Source Charge	Q <sub>gs</sub>			0.16		
Gate-Drain Charge	Q <sub>gd</sub>			0.2		

**Notes :**

1. Pulse Test : Pulse width = 300μs, duty cycle ≤ 2%.

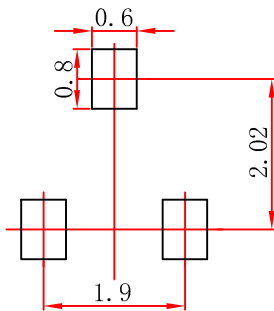
Typical Characteristics





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°

### SOT-23 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.