

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
100V	6.0Ω@10V	0.17A
	9.0Ω@4.5V	

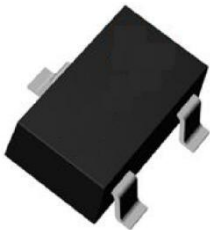
### Feature

- ESD protection
- Advanced trench process technology
- High density cell design for ultra low on-resistance
- Very low leakage current in off condition
- In compliance with EU RoHS 2002/95/EC directives.

### Application

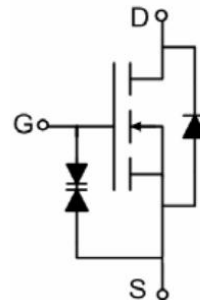
- Specially designed for battery operated system, solid-state relays drivers, relays, displays, lamps, solenoids, memories, etc.

### Package

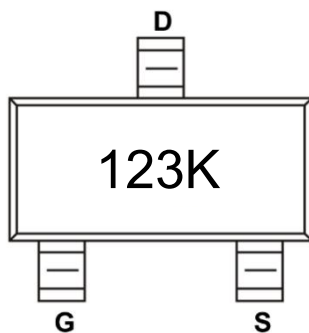


SOT-23

### Circuit diagram



### Marking



### Absolute maximum ratings (Ta=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
Power Dissipation	P <sub>D</sub>	0.35	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

### Electrical characteristics (T<sub>A</sub>=25 °C, unless otherwise noted)

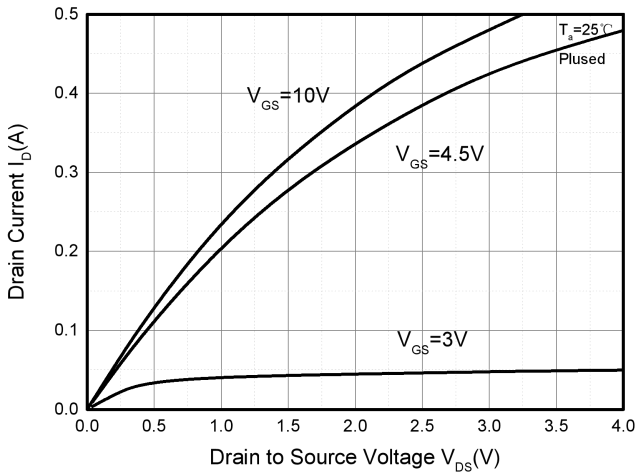
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	100			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = 80V, V <sub>GS</sub> = 0V			1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±10	μA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1.5	2.0	2.5	V
Drain-source on-resistance <sup>1)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 0.25A		4.0	6.0	Ω
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 0.20A		4.3	9.0	
<b>Dynamic characteristics<sup>2)</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0V, f = 1MHz		60		pF
Output Capacitance	C <sub>oss</sub>			15		
Reverse Transfer Capacitance	C <sub>rss</sub>			6		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 0.22A		2.0		nC
Gate-Source Charge	Q <sub>gs</sub>			0.25		
Gate-Drain Charge	Q <sub>gd</sub>			0.40		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> = 30V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 0.28A R <sub>GEN</sub> = 50Ω		8		nS
Turn-on rise time	t <sub>r</sub>			8		
Turn-off delay time	t <sub>d(off)</sub>			13		
Turn-off fall time	t <sub>f</sub>			16		
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage	V <sub>DS</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 0.17A			1.3	V

Notes:

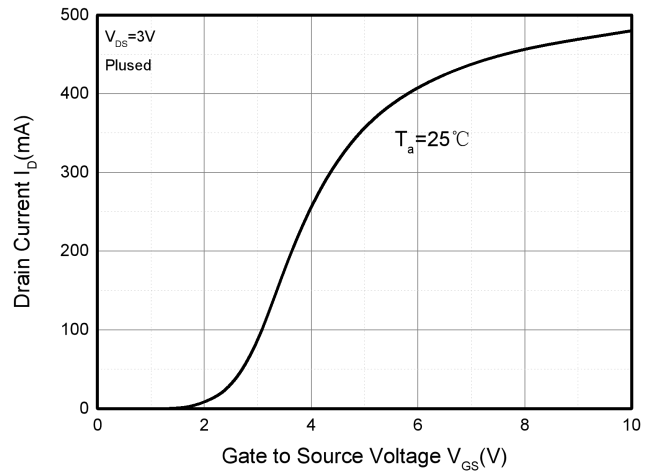
- 1) Pulse Test: Pulse Width < 300μs, Duty Cycle ≤ 2%.
- 2) Guaranteed by design, not subject to production testing.

## Typical Characteristics

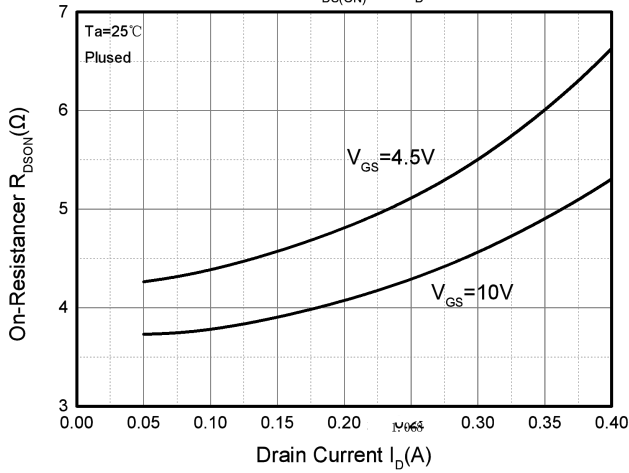
Output Characteristics



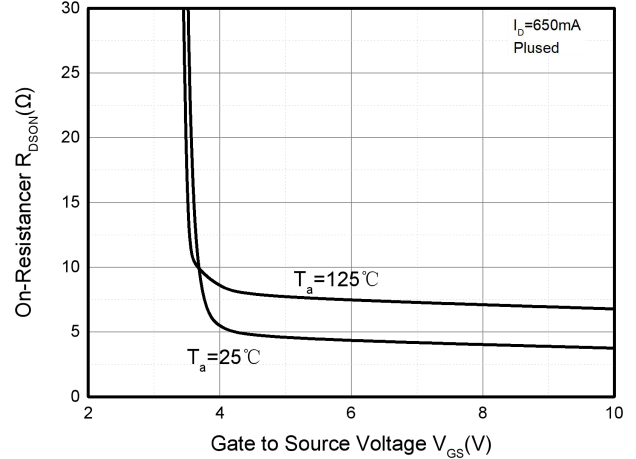
Transfer Characteristics



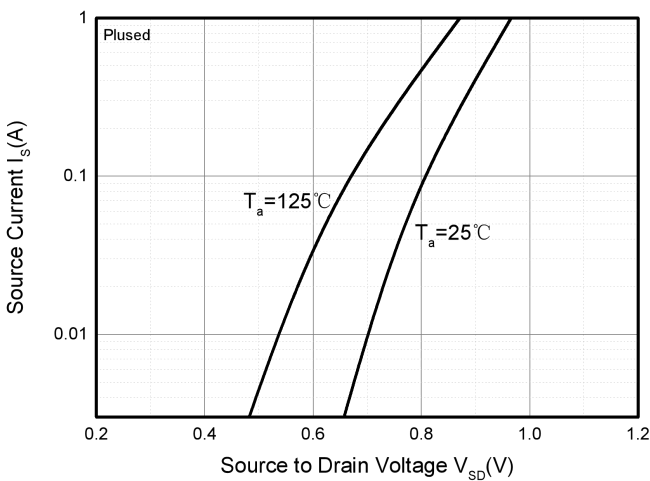
$R_{DS(ON)} - I_D$



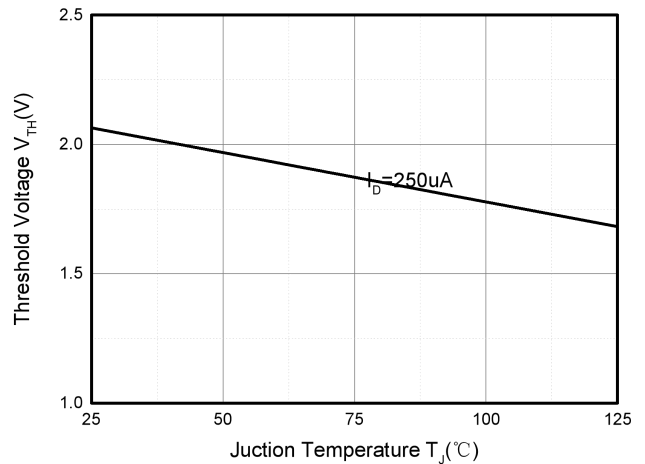
$R_{DS(ON)} - V_{GS}$



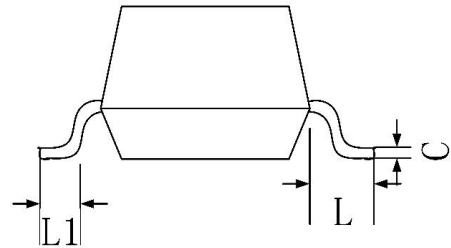
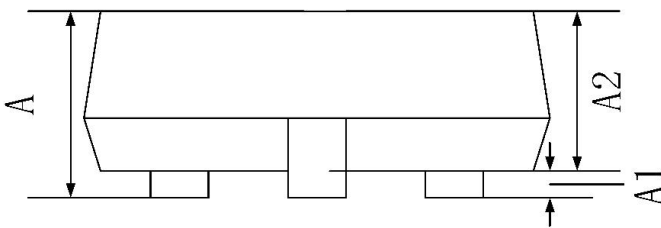
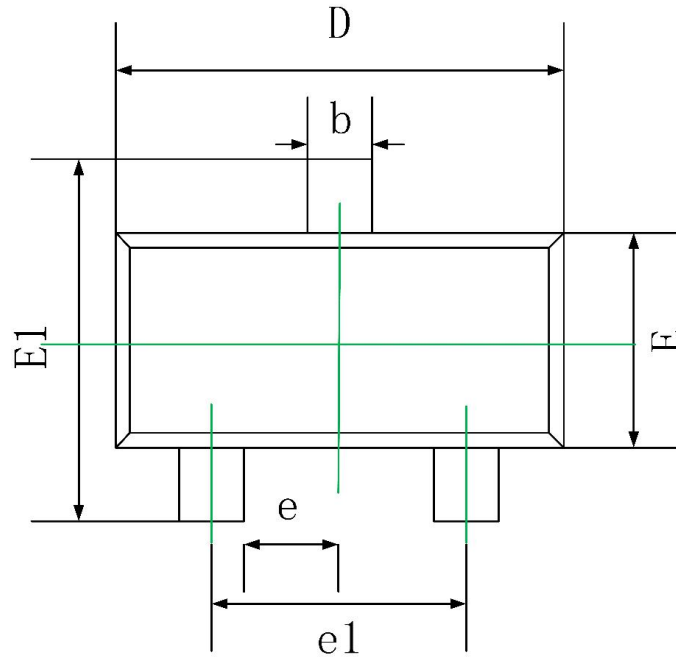
$I_S - V_{SD}$



Threshold Voltage



## 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	0.000	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	0.200	0.003	0.008
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.100	2.640	0.082	0.104
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