

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
20V	110mΩ@4.5V	1.2A
	150mΩ@2.5V	

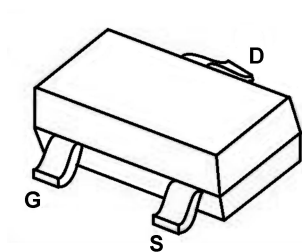
## Feature

- Surface Mount Package
- N-Channel Switch with Low  $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- ESD Protected

## Application

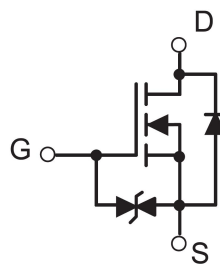
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

## Package

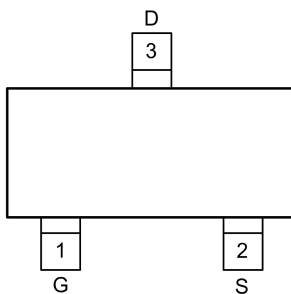


SOT-523

## Circuit diagram



## Marking



34K =Device Code

**Absolute maximum ratings (Ta=25°C unless otherwise noted)**

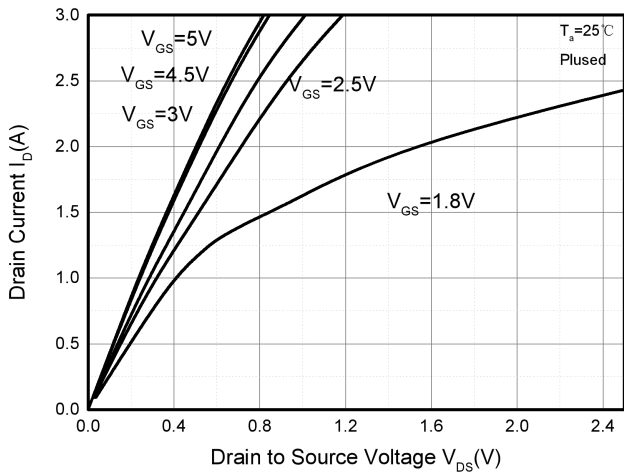
Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	1.2	A
Pulsed Drain Current	$I_{DM}$	1.8	A
Power Dissipation	$P_D$	0.15	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}C/W$
Junction Temperature	$T_J$	150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}C$

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

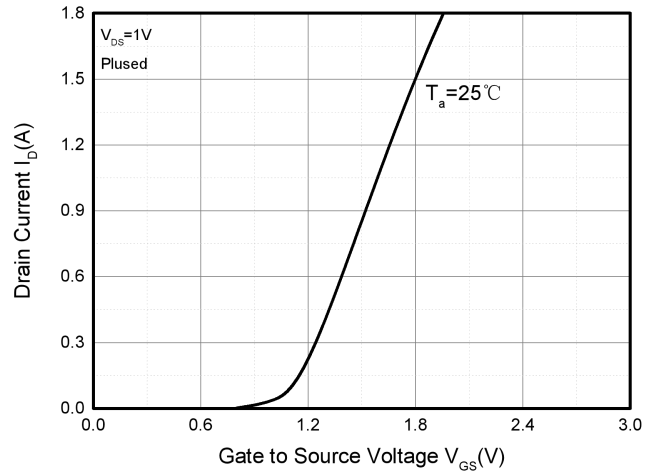
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 10V, V_{DS} = 0V$			$\pm 10$	$\mu A$
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.3	0.65	1	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 1.2A$		90	110	m $\Omega$
		$V_{GS} = 2.5V, I_D = 0.8A$		115	150	
		$V_{GS} = 1.8V, I_D = 0.3A$		165	215	
<b>Dynamic characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 16V, V_{GS} = 0V,$ $f = 1MHz$		79	120	pF
Output Capacitance	$C_{oss}$			13	20	
Reverse Transfer Capacitance	$C_{rss}$			9	15	
<b>Switching Characteristics</b>						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 4.5V, V_{DS} = 10V,$ $I_D = 500mA, R_{GEN} = 10\Omega$		6.7		ns
Turn-on rise time	$t_r$			4.8		
Turn-off delay time	$t_{d(off)}$			17.3		
Turn-off fall time	$t_f$			7.4		
<b>Source-Drain Diode characteristics</b>						
Body Diode Voltage	$V_{SD}$	$I_S = 0.5A, V_{GS} = 0V$		0.7	1.3	V

Typical Characteristics

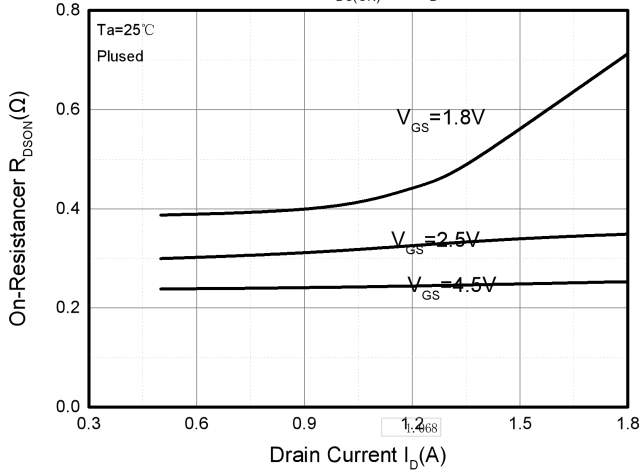
Output Characteristics



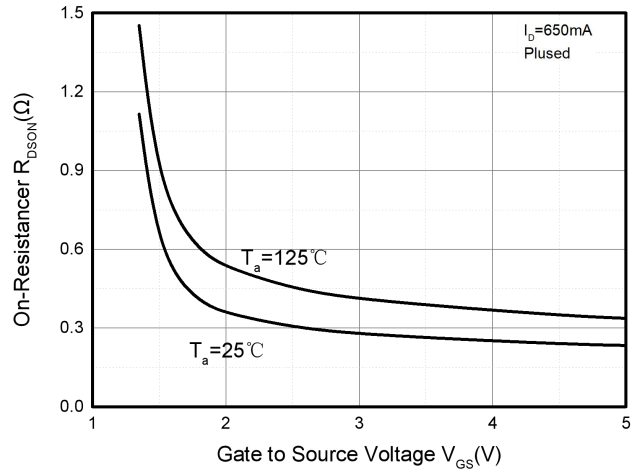
Transfer Characteristics



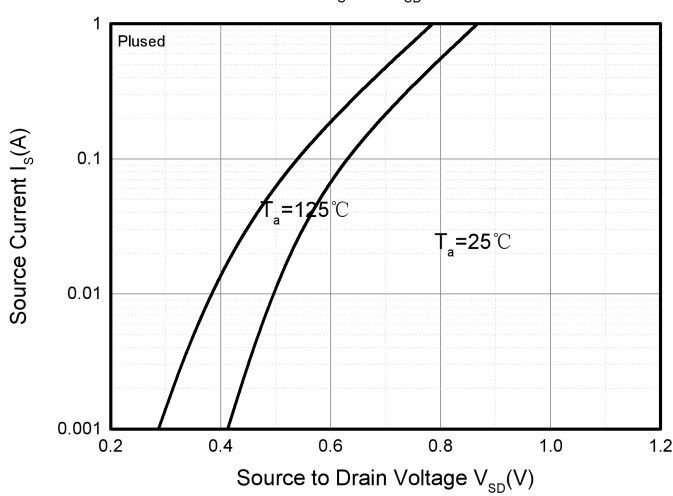
$R_{DS(ON)} - I_D$



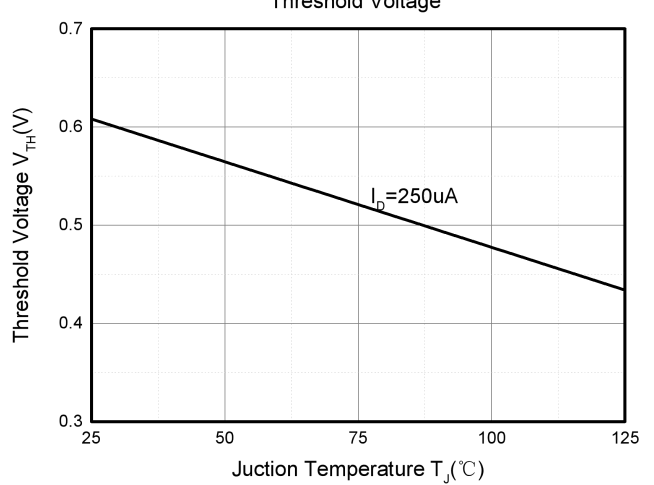
$R_{DS(ON)} - V_{GS}$



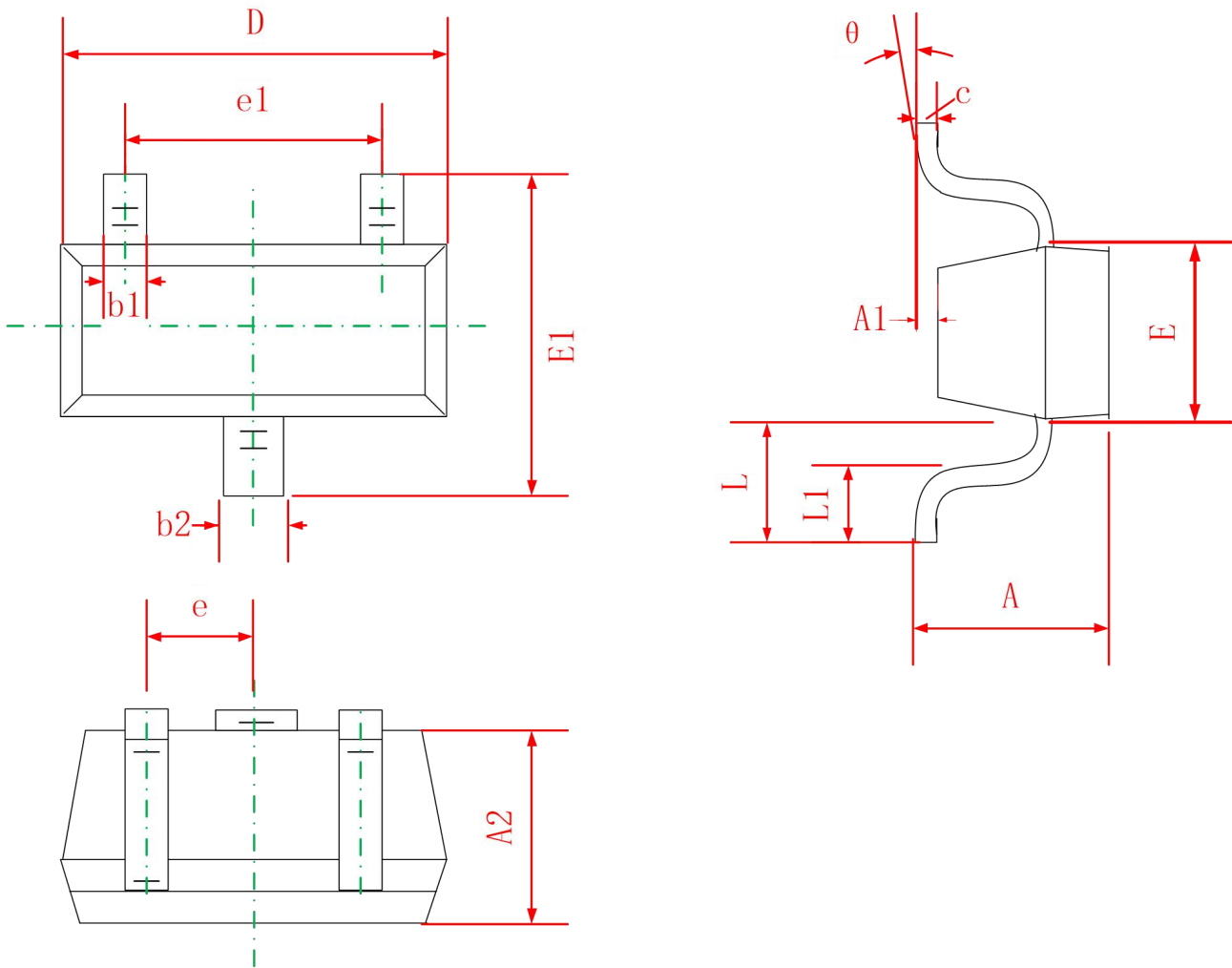
$I_S - V_{SD}$



Threshold Voltage



SOT-523 Package Information



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
C	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500 TYP	
e1	0.900	1.100
L	0.400 REF	
L1	0.260	0.460
θ	0°	8°