

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	250m Ω @4.5V	500mA
	350m Ω @2.5V	

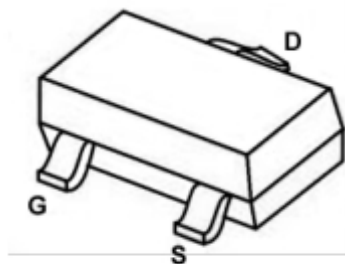
Feature

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

Applications

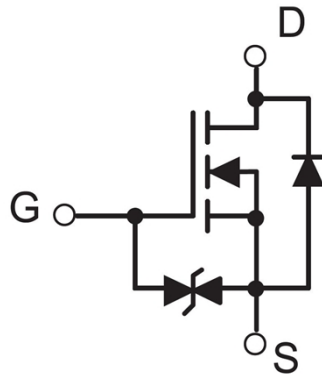
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

Package

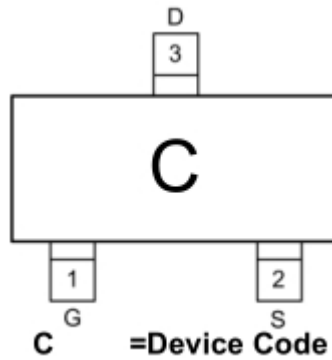


SOT-523

Circuit diagram



Marking



Absolute maximum ratings

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

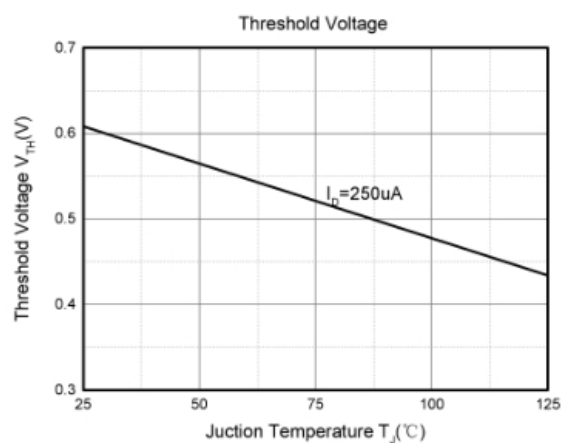
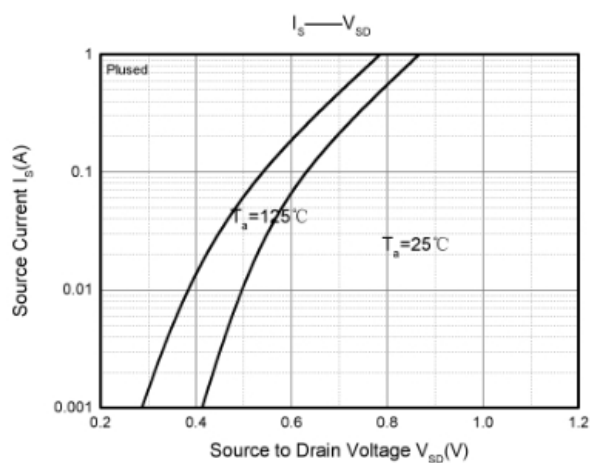
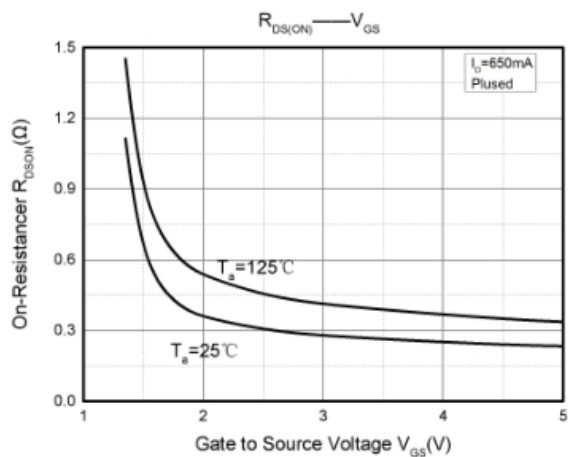
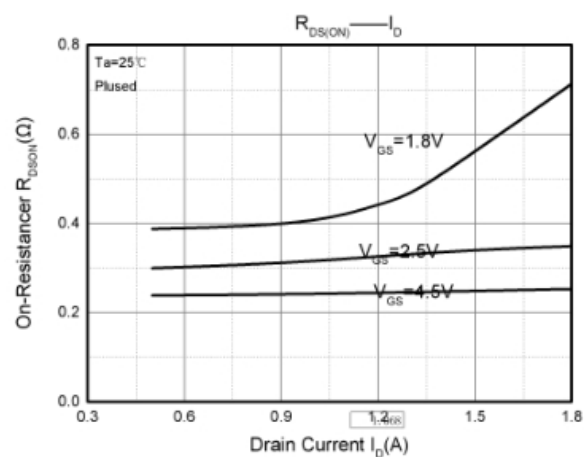
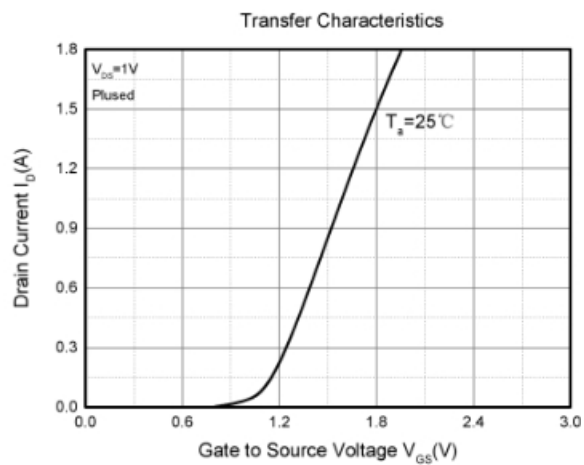
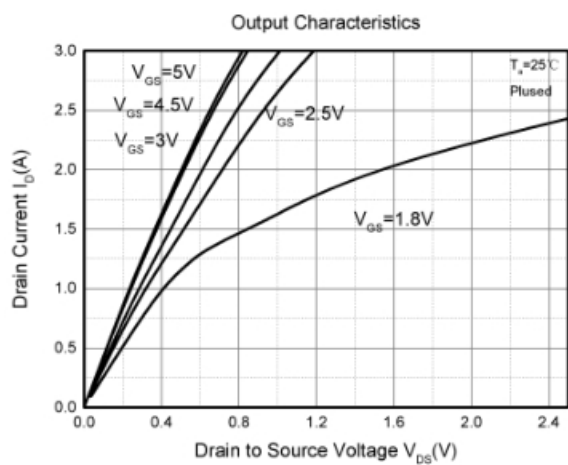
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	500	mA
Pulsed Drain Current	I_{DM}	1000	mA
Power Dissipation	P_D	150	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics

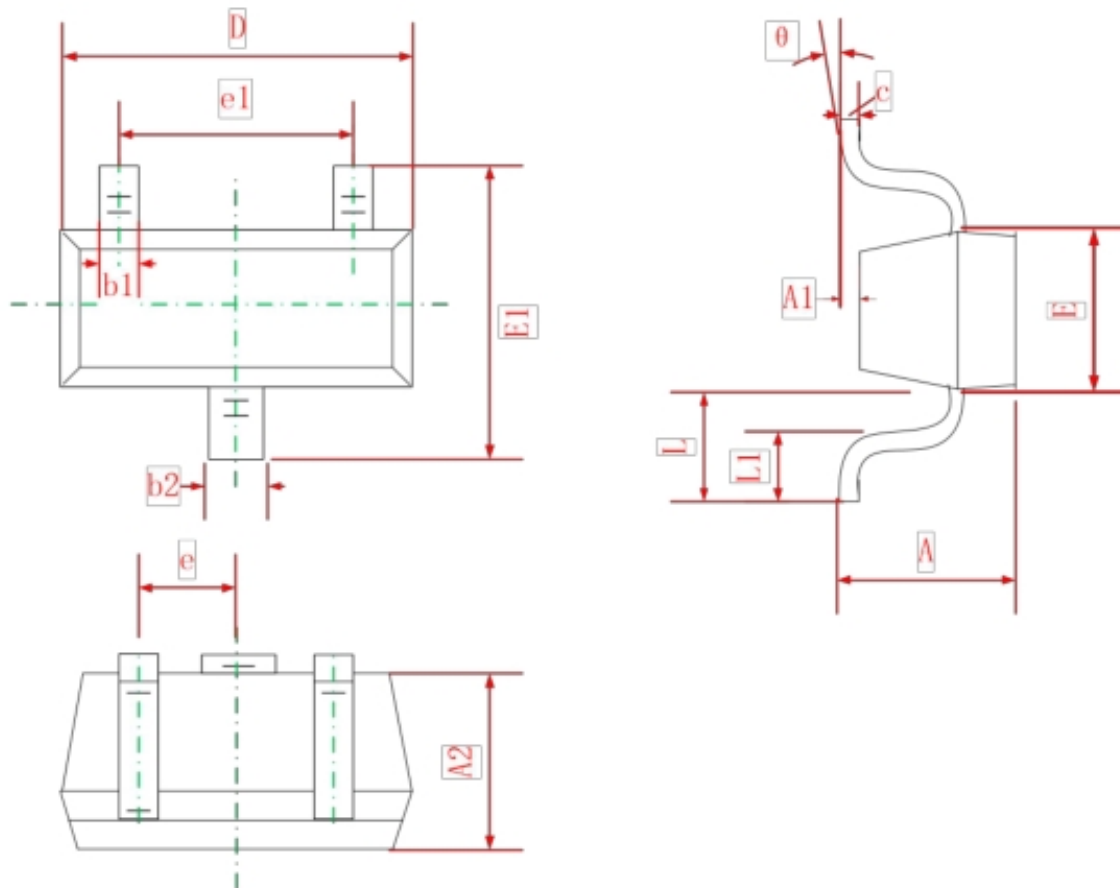
(T_A=25°C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V, V _{GS} = 0V			1	uA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±10V, V _{DS} = 0V			±10	uA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.45	0.65	1.2	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =600mA		250	380	mΩ
		V _{GS} =2.5V, I _D =500mA		350	450	
Dynamic Characteristics						
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	
Switching Characteristics						
Turn-on Delay Time	T _{d(on)}	V _{GS} =4.5V, V _{DS} =10V, I _D =500mA ,R _G =10Ω		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		
Source-Drain Diode Characteristics						
Body Diode Voltage	V _{SD}	I _S =0.5A, V _{GS} = 0V		0.7	1.3	V

Typical Characteristics



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°