20V N-Channel Mosfet

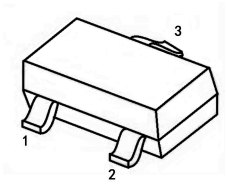
FEATURES

- $R_{DS(ON)}$≤0.38Ω(0.25Ω Typ.) @V_{GS}=4.5V
- $R_{DS(ON)}$≤0.45Ω(0.35Ω Typ.) @V_{GS}=2.5V
- $R_{DS(ON)}$≤0.80Ω(0.40Ω Typ.) @V_{GS}=1.8V

APPLICATIONS

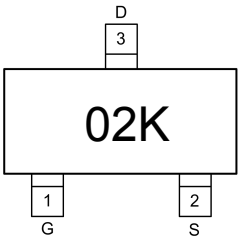
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

SOT-323

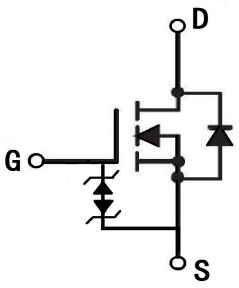


1. GATE
2. SOURCE
3. DRAIN

MARKING



N-CHANNEL MOSFET



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

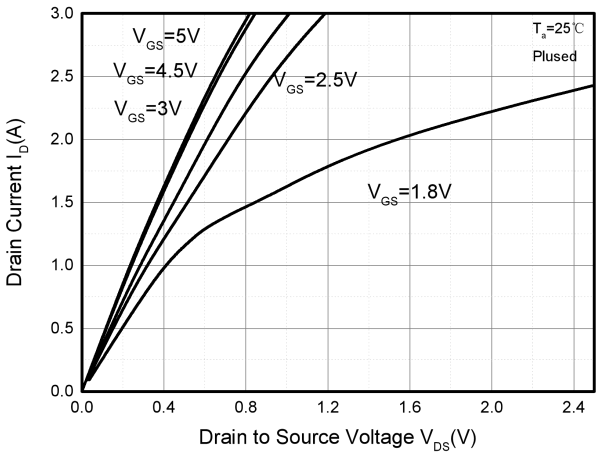
Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	20	V
V_{GSS}	Gate-Source Voltage	±10	V
I_D	Continuous Drain Current	0.75	A
I_{DM}	Pulsed Drain Current note1	1.8	A
P_D	Power Dissipation	0.2	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	625	℃/W
T_J	Junction Temperature	150	℃
T_{STG}	Storage Temperature	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

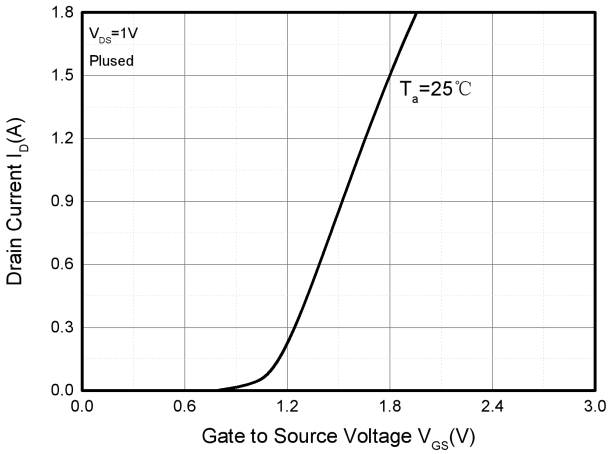
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS} = 0V,I_D = 250μA	20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 16V, V_{GS} = 0V, T_J = 25℃	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	V_{GS} = ±10V,V_{DS} = 0V	-	-	±10	μA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} =V_{GS},I_D = 250μA	0.3	0.65	1	V
$R_{DS(on)}$	Static Drain-Source On-Resistance note3	V_{GS} =4.5V, I_D =0.5A	-	0.25	0.38	Ω
		V_{GS} =2.5V, I_D =0.5A	-	0.35	0.45	
		V_{GS} =1.8V, I_D =0.5A	-	0.4	0.8	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} =16V, V_{GS} = 0V, f = 1.0MHz	-	79	120	pF
C_{oss}	Output Capacitance		-	13	20	pF
C_{rss}	Reverse Transfer Capacitance			9	15	pF
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{GS} = 4.5V, V_{DS}=10V, R_G =10Ω, I_D=500mA	-	6.7	-	ns
t_r	Turn-On Rise Time		-	4.8	-	ns
$t_{d(off)}$	Turn-Off Delay Time		-	17.3	-	ns
t_f	Turn-Off Fall Time		-	7.4	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_{SD}=0.5A, T_J = 25℃	-	0.7	1.3	V

TYPICAL PERFORMANCE CHARACTERISTICS

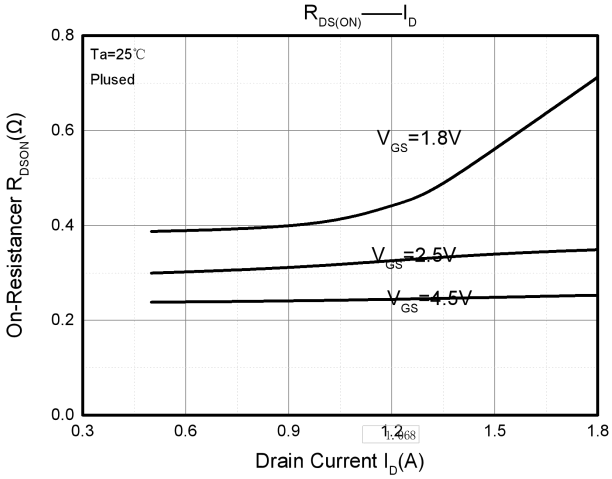
Output Characteristics



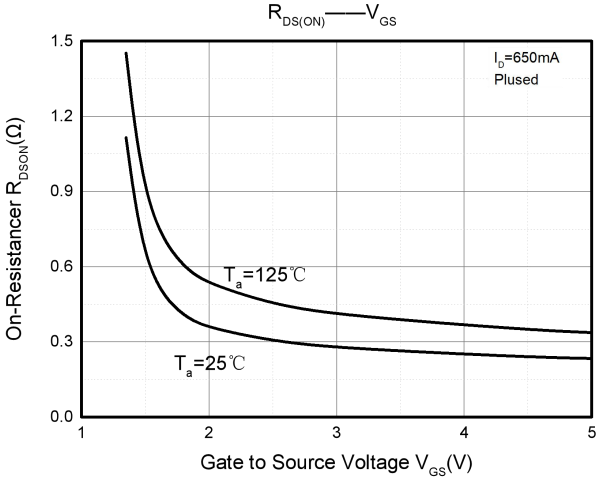
Transfer Characteristics



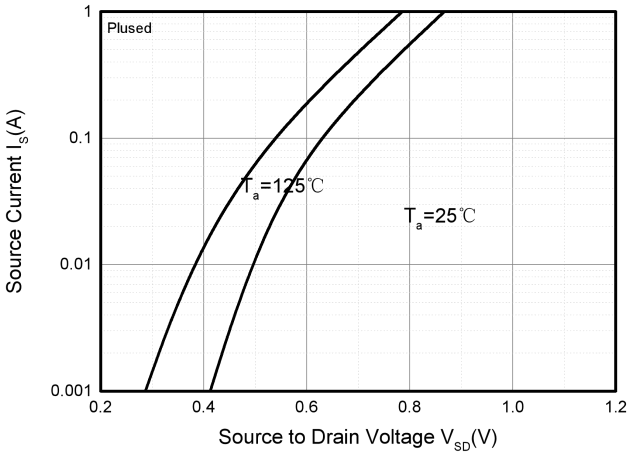
$R_{DS(ON)}$——I_D



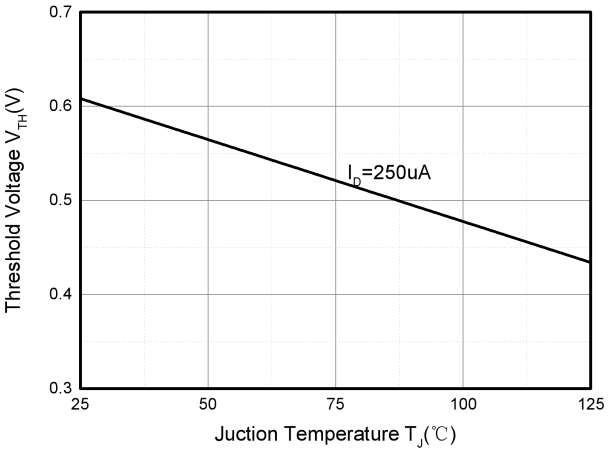
$R_{DS(ON)}$——V_{GS}



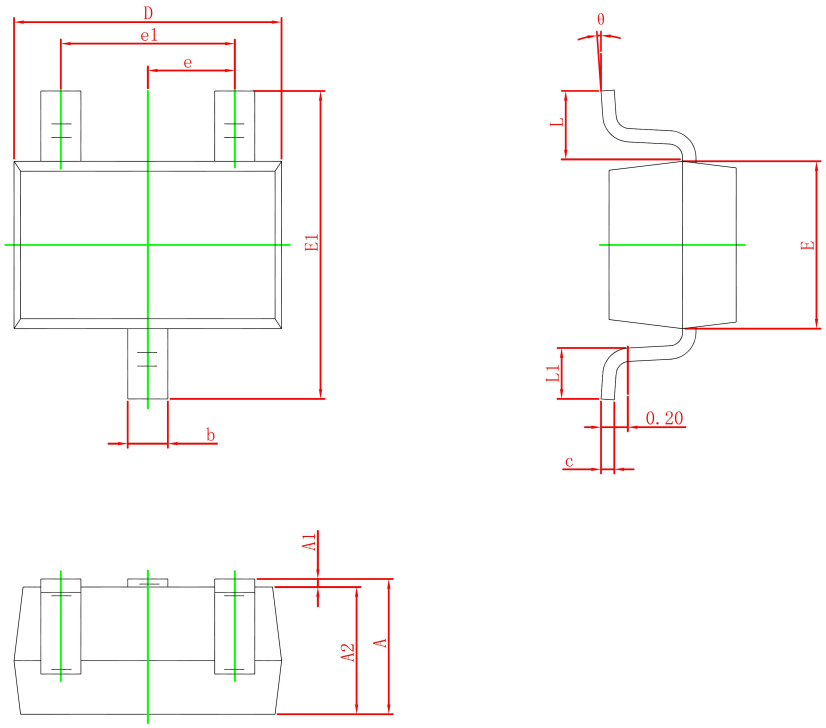
I_S——V_{SD}



Threshold Voltage



SOT-323 PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°