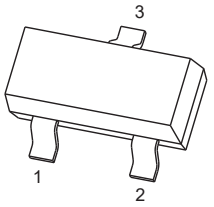
100V N-Channel MOSFET

Product Summary

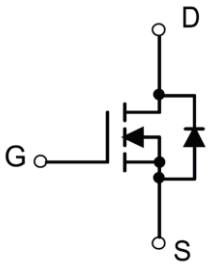
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	2.1Ω@10V	0.17A
	2.2Ω@4.5V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

Schematic diagram



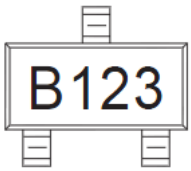
Feature

- Surface Mount Package
- High Density Cell Design for Extremely Low $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- Rugged and Reliable
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Exsemi technology

Application

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

MARKING:



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	0.17	A
Pulsed Drain Current (tp=10μs)	I_{DM}	0.68	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

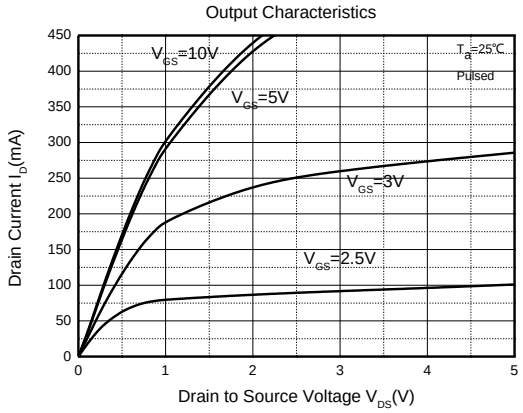
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

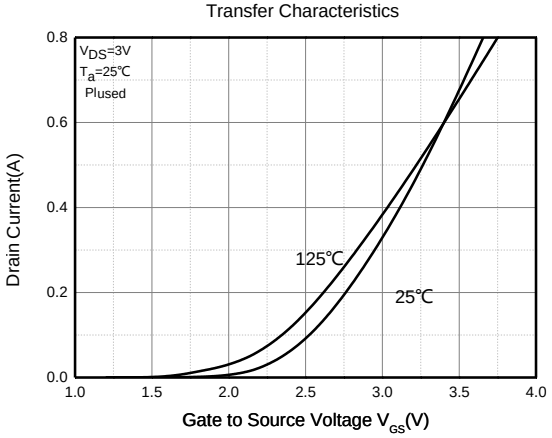
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =80V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage[1]	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.8	3	V
Drain-source on-resistance[1]	$R_{DS(on)}$	V_{GS} =10V, I_D =0.17A		2.1	4.5	Ω
		V_{GS} =4.5V, I_D =0.17A		2.2	6.0	
Forward tranconductance[1]	g_{FS}	V_{DS} =10V, I_D =0.17A		0.45		S
Diode forward voltage[1]	V_{SD}	I_S =0.17A, V_{GS} = 0V		0.8	1.3	V
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V,f =1MHz		32		pF
Output Capacitance	C_{oss}			8		
Reverse Transfer Capacitance	C_{rss}			2.6		
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	V_{GS} =10V,V_{DD} =30V, I_D =0.28A,R_{GEN} =50Ω		7		ns
Turn-on rise time	t_r			6		
Turn-off delay time	$t_{d(off)}$			10		
Turn-off fall time	t_f			9		
Total Gate Charge	Q_g	V_{DS} =10V,I_D =0.22A,V_{GS} =10V		1.5		nC
Gate-Source Charge	Q_{gs}			0.16		
Gate-Drain Charge	Q_{gd}			0.2		

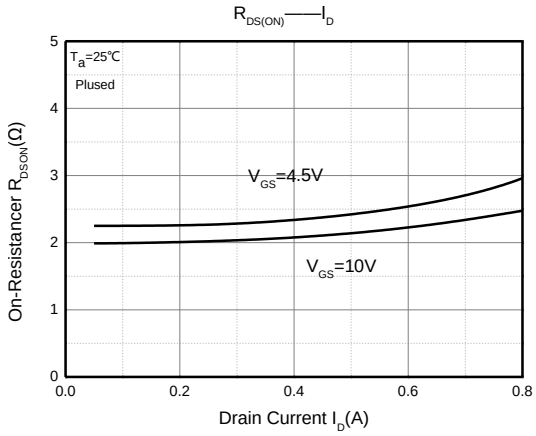
Notes :

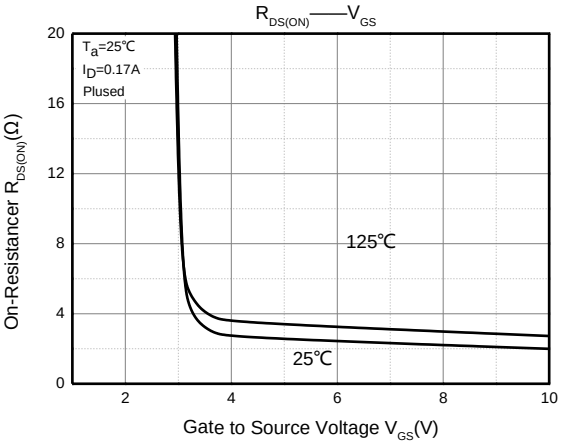
1.Pulse Test : Pulse width=300μs, duty cycle≤2%.

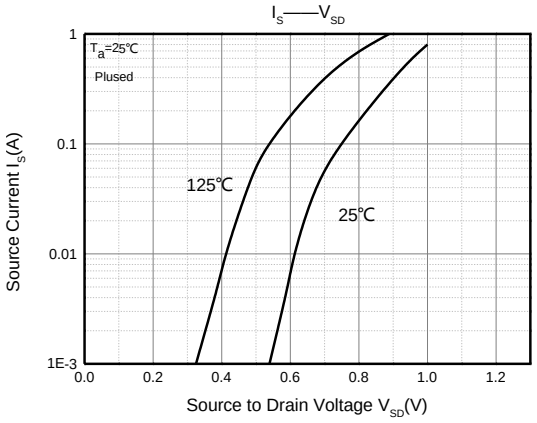
Typical Characteristics

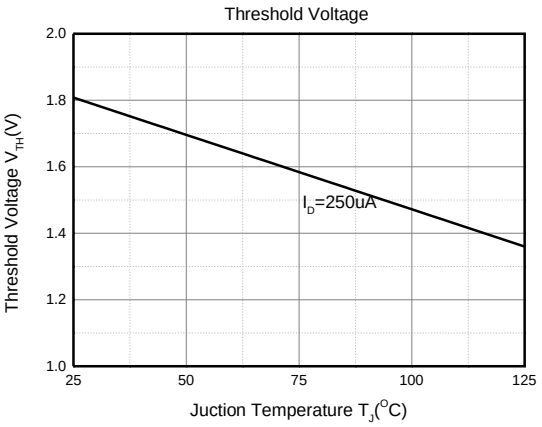




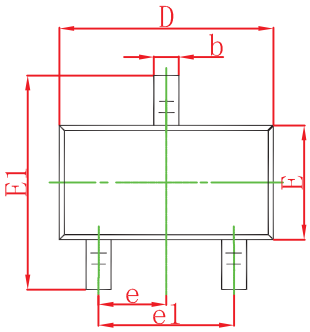


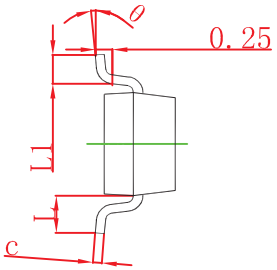


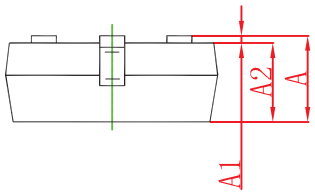




SOT-23 Package Information







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	0.150	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°