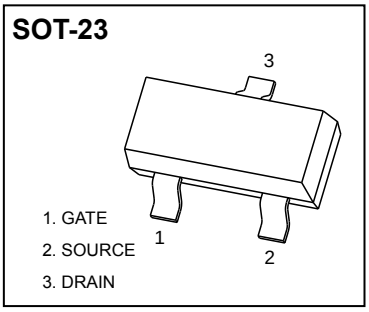
SOT-23 Plastic-Encapsulate MOSFETS

N Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
100V	6Ω@10V	0.17A
	10Ω@4.5V	



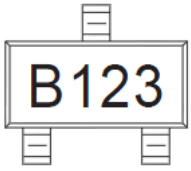
FEATURE

- Surface Mount Package
- High Density Cell Design for Extremely Low $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- Rugged and Reliable

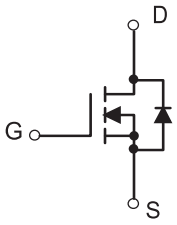
APPLICATION

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

MARKING



Equivalent Circuit



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

Parameter	Symbol	Value	Unit
N-MOSFET			
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (note 1)	I_D	0.17	A
Pulsed Drain Current (tp=10us)	I_{DM}	0.68	A
Continous Source-Drain Diode Current	I_S	0.17	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient (note 1)	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~+150	℃
Lead Temperature for Soldering Purposes(1/8'' from case for 10 s)	T_L	260	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	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} =100V,V_{GS} = 0V			1	μA
		V_{DS} =20V,V_{GS} = 0V			10	nA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±50	nA
Gate threshold voltage (note 2)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.6	2.8	V
Drain-source on-resistance(note 2)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =0.17A		3.8	10	Ω
		V_{GS} =10V, I_D =0.17A		3.5	6	Ω
Forward tranconductance(note 2)	g_{FS}	V_{DS} =10V, I_D =170mA	80			mS
Diode forward voltage	V_{SD}	I_S=340mA, V_{GS} = 0V			1.3	V
DYNAMIC CHARACTERISTICS (note 4)						
Input Capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V,f =1MHz		29	60	pF
Output Capacitance	C_{oss}			10	15	pF
Reverse Transfer Capacitance	C_{rss}			2	6	pF
SWITCHING CHARACTERISTICS (note 3,4)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DD}=30V, I_D=0.28A,R_{GEN}=50Ω			8	ns
Turn-on rise time	t_r				8	ns
Turn-off delay time	$t_{d(off)}$				13	ns
Turn-off fall time	t_f				16	ns
Total Gate Charge	Q_g	V_{DS}=10V,I_D=0.22A, V_{GS}=10V		1.4	2	nC
Gate-Source Charge	Q_{gs}			0.15	0.25	nC
Gate-Drain Charge	Q_{gd}			0.2	0.4	nC

Notes :

1.Surface mounted on FR4 board using the minimum recommended pad size.

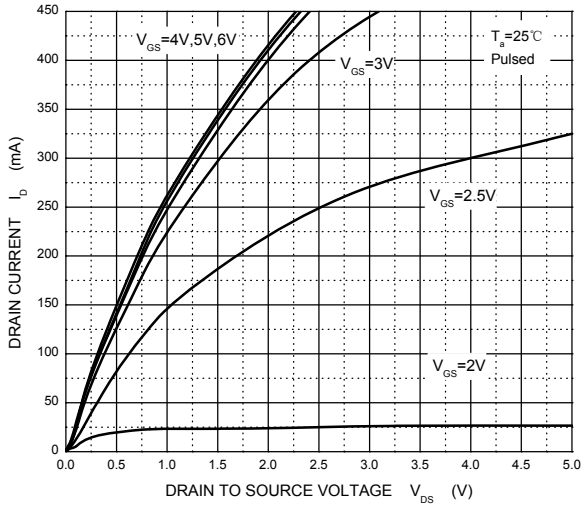
2. Pulse Test : Pulse width=300μs, duty cycle≤2%.

3. Switching characteristics are independent of operating junction temperature.

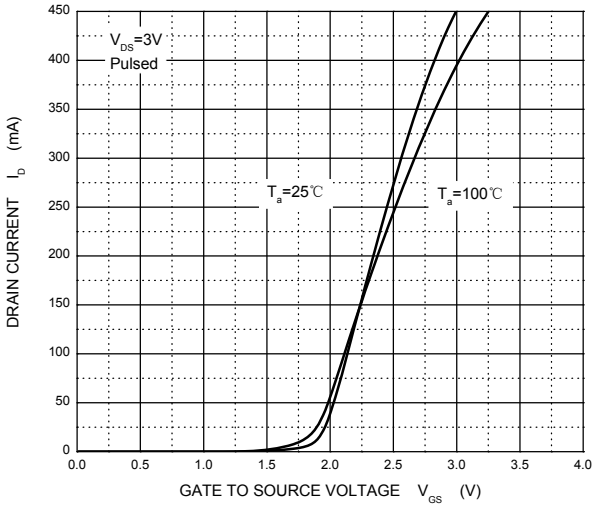
4. Graranted by design，not subject to producting.

Typical Characteristics

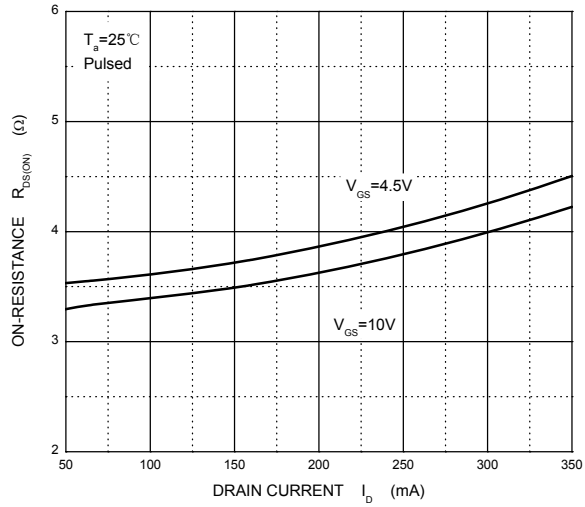
Output Characteristics



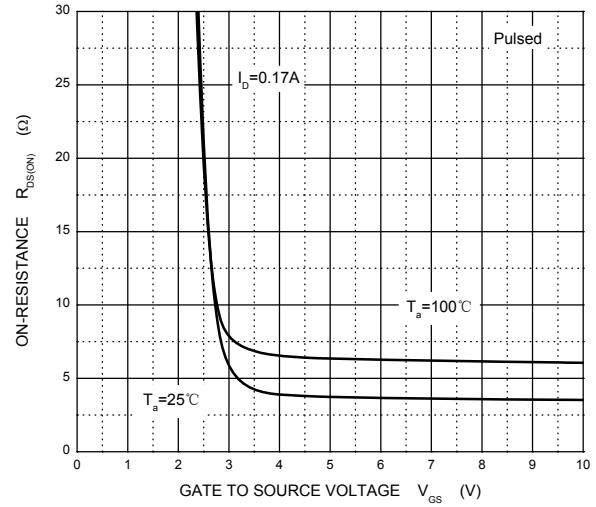
Transfer Characteristics



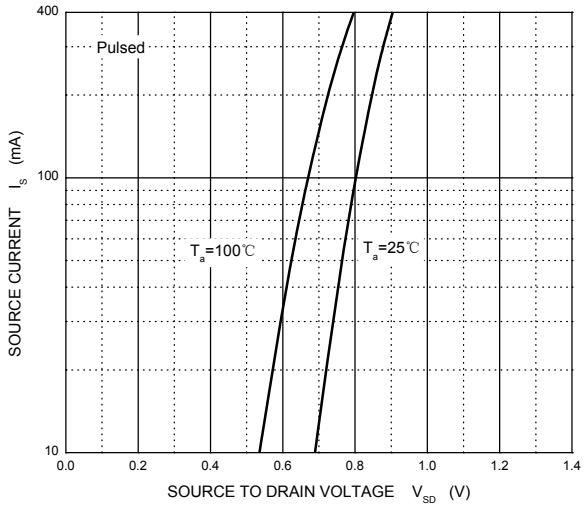
$R_{DS(ON)}$ —— I_D



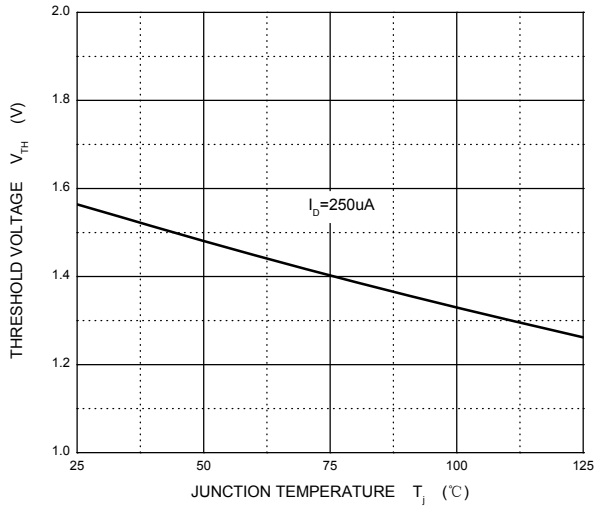
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}

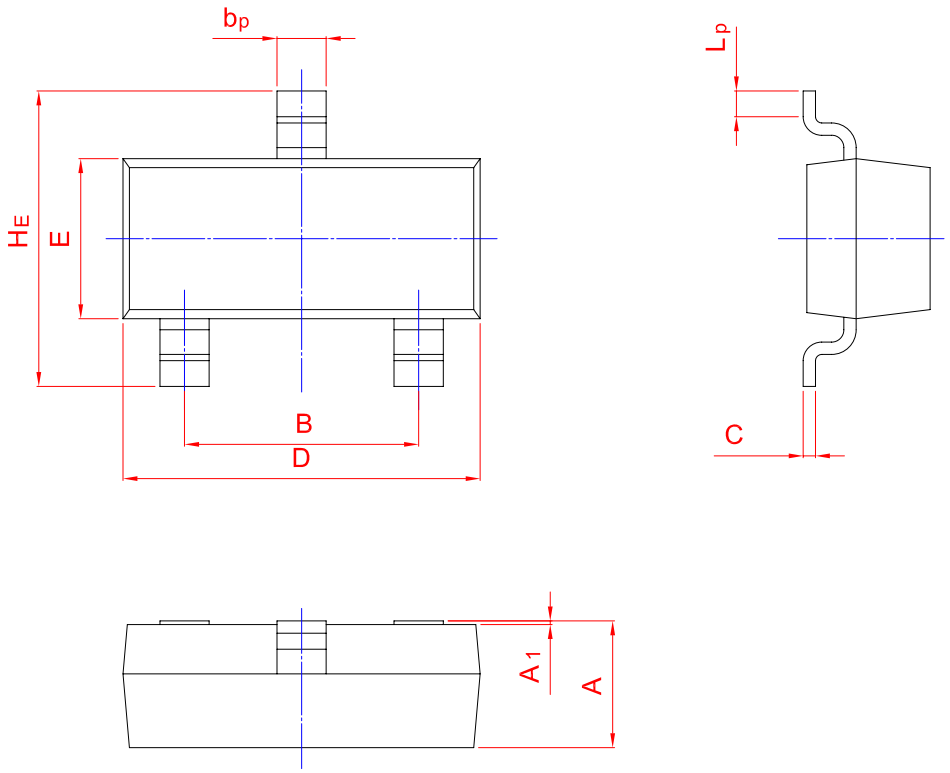


Threshold Voltage



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-23**



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20

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