

Features

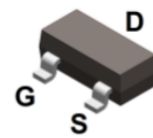
- Low on-resistance
- High-speed switching
- Drive circuits can be simple
- Parallel use is easy

Typical Applications

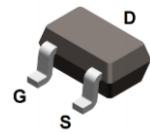
- Switching application

Mechanical Data

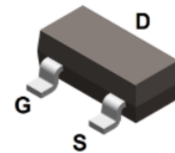
- Case: SOT-23, SOT-323, SOT-23-3L
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin-Plated Leads, Solderability-per MIL-STD-202, Method 208



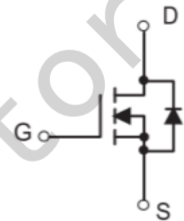
BSS123
SOT-23



BSS123W
SOT-323



BSS123-3L
SOT-23-3L



Ordering Information

Part Number	Package	Shipping Quantity
BSS123	SOT-23	3000pcs / Tape & Reel
BSS123W	SOT-323	3000pcs / Tape & Reel
BSS123-3L	SOT-23-3L	3000pcs / Tape & Reel

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V _{DSS}	100	V
Gate-to-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current	I _D	170	mA
Pulsed Drain Current ^{*3}	I _{DM}	680	mA

Thermal Characteristics

Parameter		Symbol	Value	Unit
Power Dissipation	SOT-23	P _D	0.35	W
	SOT-323		0.2	W
	SOT-23-3L		0.35	W
Thermal Resistance Junction-to-Air	SOT-23	R _{θJA}	357	°C/W
	SOT-323		625	°C/W
	SOT-23-3L		357	°C/W
Operating Junction Temperature Range		T _J	-55 to +150	°C
Storage Temperature Range		T _{STG}	-55 to +150	°C

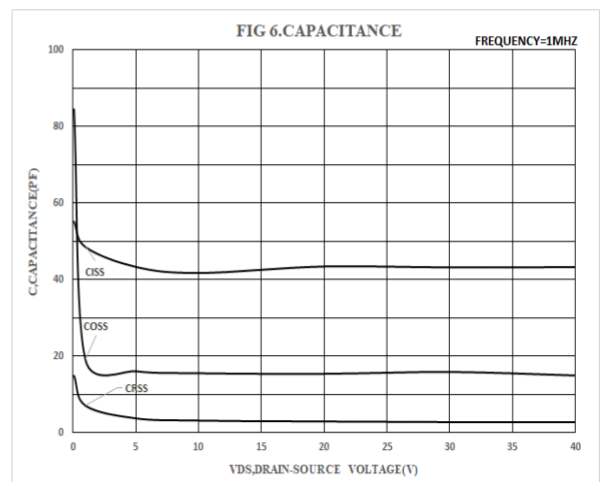
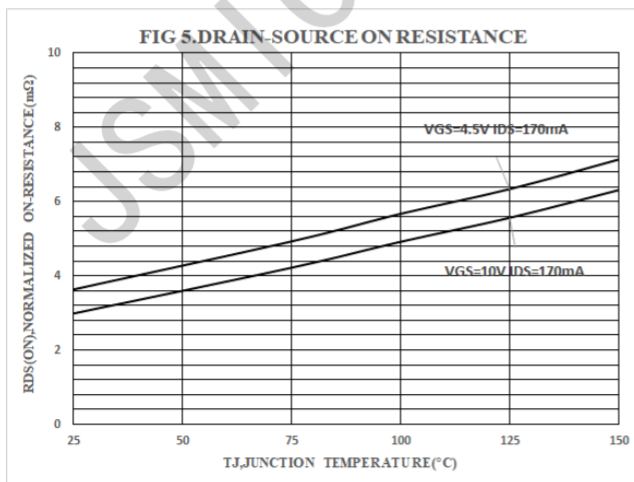
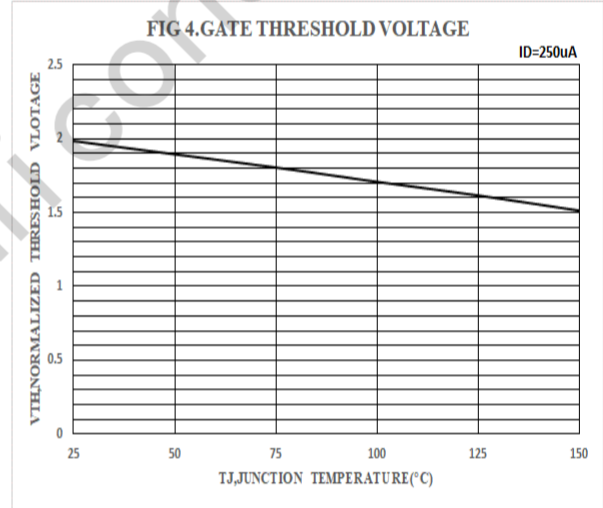
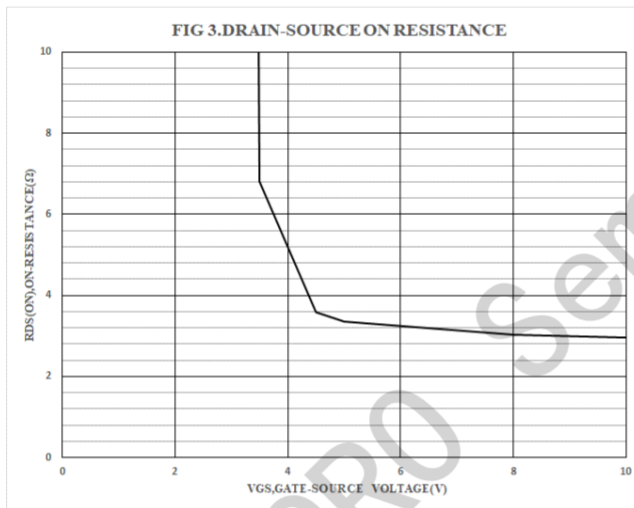
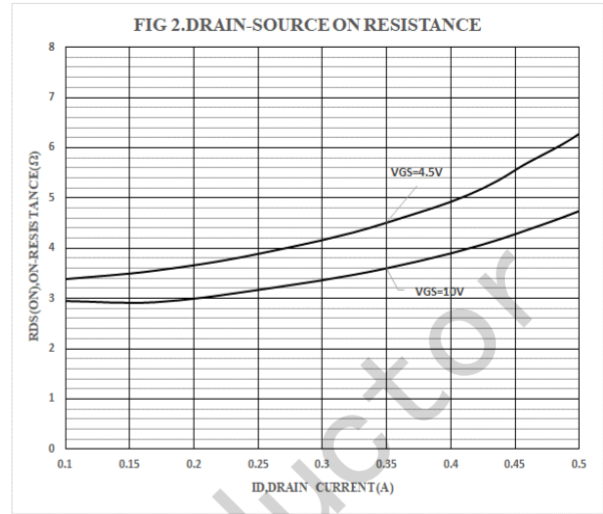
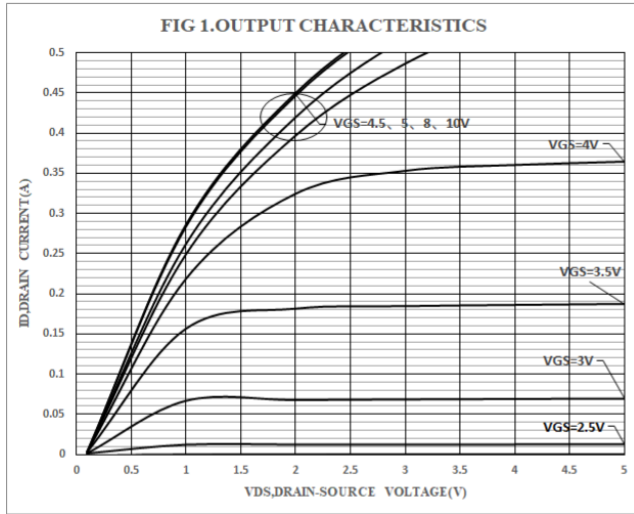
Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250μA	100	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 100V, V _{GS} = 0V	-	-	1	μA
		V _{DS} = 20V, V _{GS} = 0V	-	-	10	nA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} = 0V	-	-	±1	μA
On Characteristics						
R _{DS(ON)}	Static Drain-Source On-resistance *1	V _{GS} = 10V, I _D = 0.17A	-	3.0	6	Ω
		V _{GS} = 4.5V, I _D = 0.17A	-	3.5	10	
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	1	1.9	2.8	V
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} = 0V V _{DS} = 20V f = 1.0MHz	-	43	-	pF
C _{oss}	Output Capacitance		-	15	-	
C _{rss}	Reverse Transfer Capacitance		-	2.8	-	
Switching Characteristics *2						
t _{d(on)}	Turn-on Delay Time	V _{DD} = 30V, I _D = 0.28A V _{GS} = 10V, R _G = 50Ω	-	-	8	ns
t _r	Turn-on Rise Time		-	-	8	
t _{d(off)}	Turn-Off Delay Time		-	-	13	
t _f	Turn-Off Fall Time		-	-	16	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage *1	I _S = 0.3A, V _{GS} = 0V	-	0.85	1.3	V

Notes:

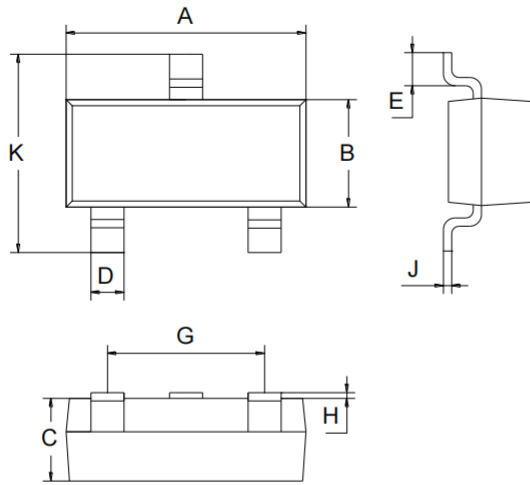
- 1、 Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%
- 2、 Guaranteed by design, not subject to production
- 3、 Pulse width limited by maximum junction temperature

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)



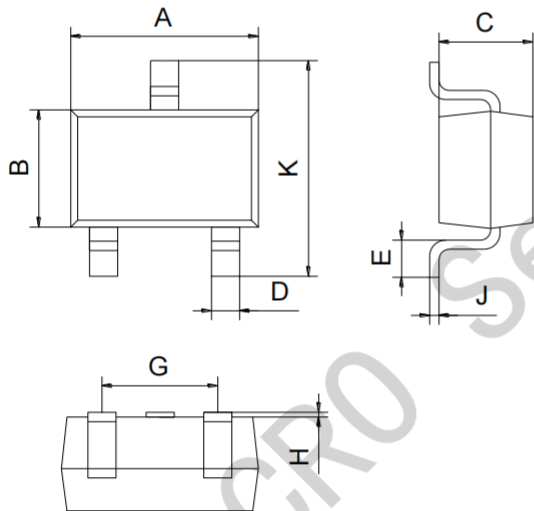
Package Outline Dimensions (Unit: mm)

SOT-23



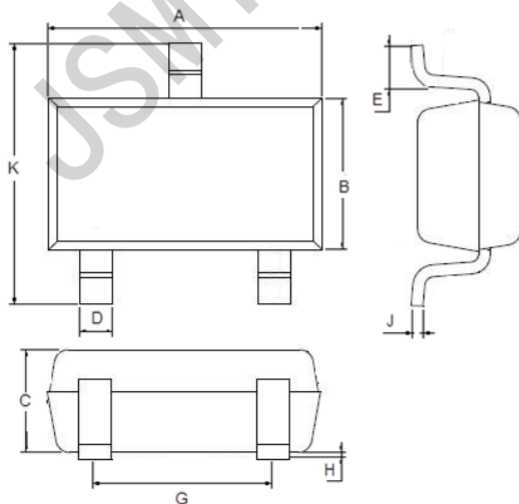
SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

SOT-323



SOT-323		
Dimension	Min.	Max.
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	0.25	0.40
G	1.20	1.40
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40

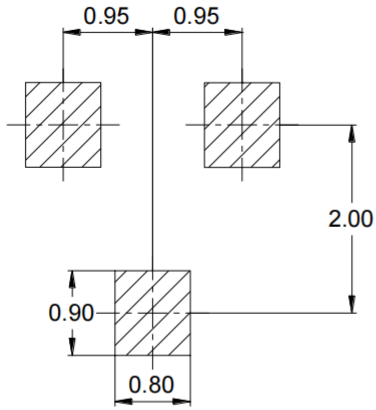
SOT-23-3L



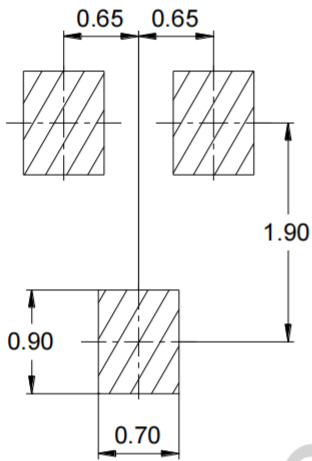
SOT-23-3L		
Dimension	Min.	Max.
A	2.80	3.00
B	1.50	1.70
C	1.00	1.20
D	0.35	0.45
E	0.35	0.55
G	1.80	2.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00

Mounting Pad Layout (Unit: mm)

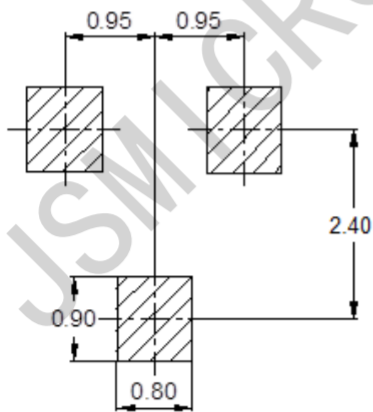
SOT-23



SOT-323



SOT-23-3L



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