

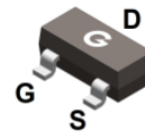
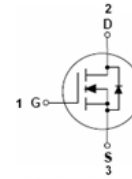
Features

- Electrostatic Sensitive Devices
- $R_{DS(ON)} < 28m\Omega$ @ $V_{GS} = 10V$
- $R_{DS(ON)} < 43m\Omega$ @ $V_{GS} = 4.5V$

HF

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-23

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL3404	SOT-23	3000 pcs / Tape & Reel	R4

Maximum Ratings (@ $T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	30	V
Gate-to-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($T_A = 25^\circ C$)	I_D	5.8	A
Continuous Drain Current ($T_A = 70^\circ C$)		4.9	A
Pulsed Drain Current	I_{DM}	24	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ^{*1}	P_D	0.53	W
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	238	$^\circ C/W$
Thermal Resistance Junction-to-Lead ^{*1}	$R_{\theta JL}$	46	$^\circ C/W$
Thermal Resistance Junction-to-Case ^{*1}	$R_{\theta JC}$	96	$^\circ C/W$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ C$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ C$

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ 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	30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 24V, V _{GS} = 0V	-	-	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
On Characteristics						
R _{DS(ON)}	Static Drain-Source On-resistance	V _{GS} = 10V, I _D = 5.8A	-	22	28	mΩ
		V _{GS} = 4.5V, I _D = 5A	-	31	43	
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	1.2	1.6	2.6	V
g _{FS}	Forward Transconductance	V _{DS} = 5V, I _D = 5.8A	-	22	-	S
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V V _{DS} = 15V f = 1.0MHz	-	515	-	pF
C _{OSS}	Output Capacitance		-	76	-	
C _{RSS}	Reverse Transfer Capacitance		-	65	-	
Q _G	Total Gate-Charge	V _{GS} = 10V V _{DS} = 15V I _D = 5.8A	-	14.4	-	nC
Q _{GS}	Gate to Source Charge		-	2.4	-	
Q _{GD}	Gate to Drain (Miller) Charge		-	2.6	-	
t _{d(ON)}	Turn-on Delay Time	V _{GS} = 10V V _{DD} = 15V R _L = 2.6Ω R _G = 3Ω	-	4.5	6.5	ns
t _r	Turn-on Rise Time		-	2.4	-	
t _{d(OFF)}	Turn-Off Delay Time		-	14.8	-	
t _f	Turn-Off Fall Time		-	2.5	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _S = 1A, V _{GS} = 0 V	-	0.75	1.0	V
I _S	Maximum Body-Diode Continuous Current		-	-	2.5	A

Note 1: The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B

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

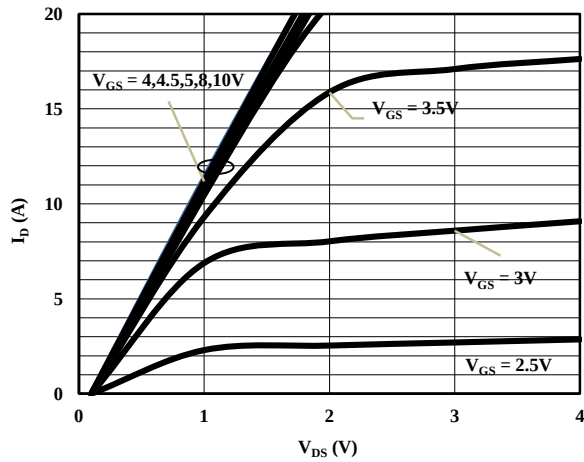


Fig 1 On-Region Characteristics

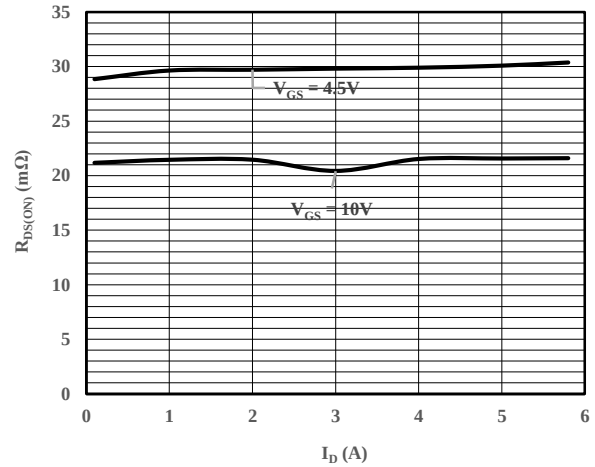


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

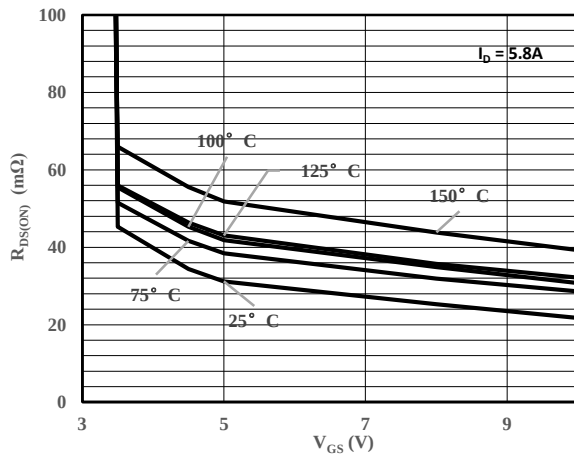


Fig 3 On-Resistance vs. Gate-Source Voltage

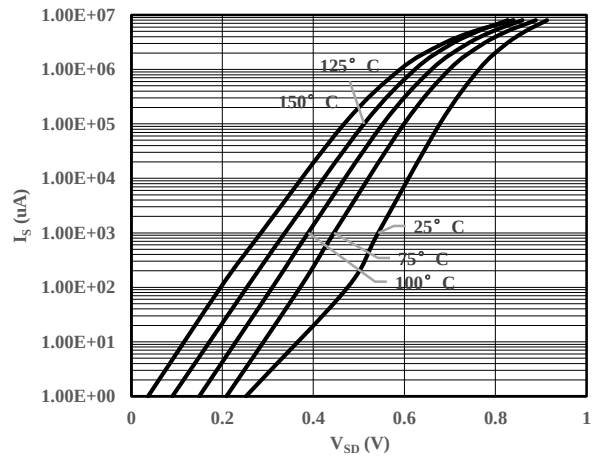


Fig 4 Body-Diode Characteristics

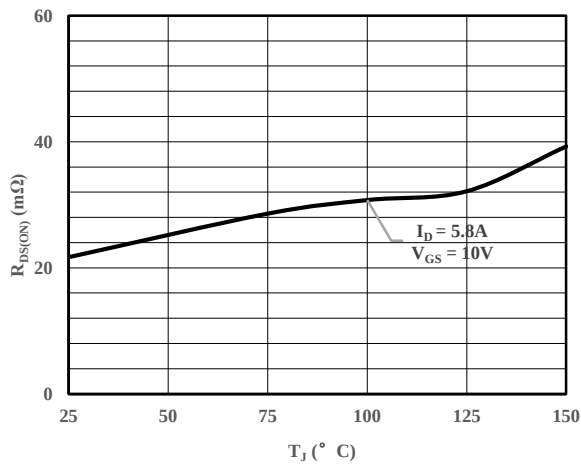


Fig 5 On-Resistance vs. Junction Temperature

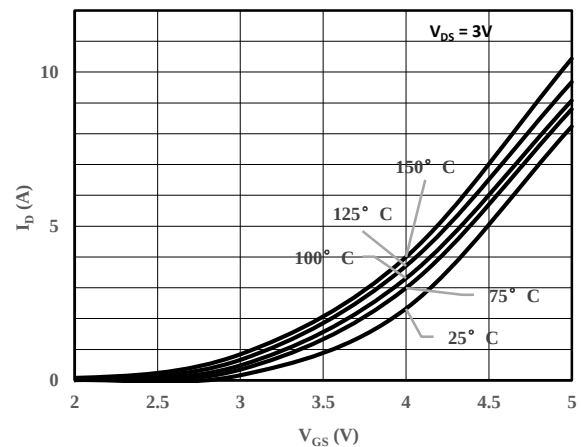
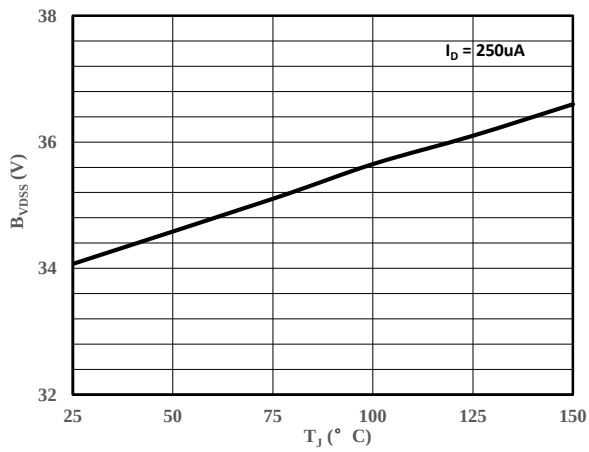
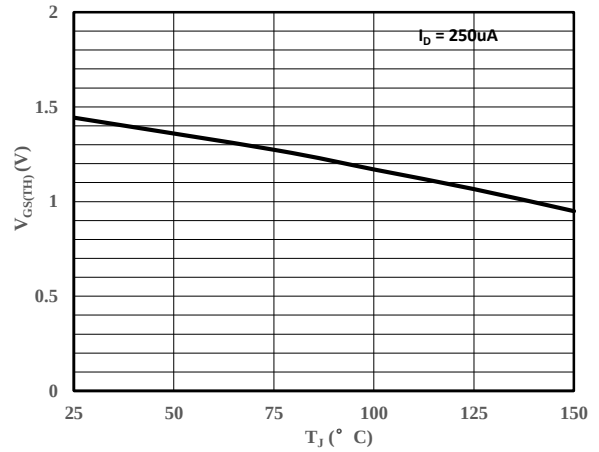
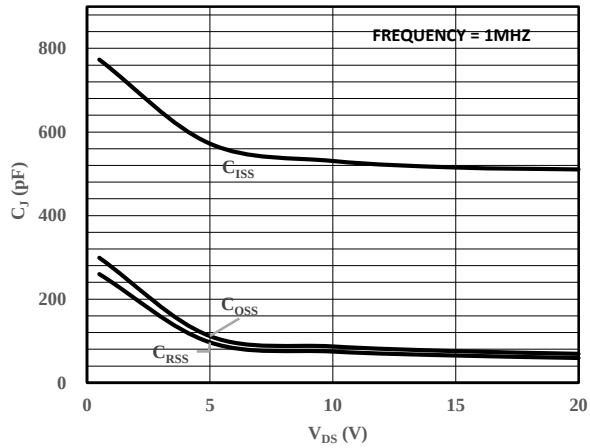
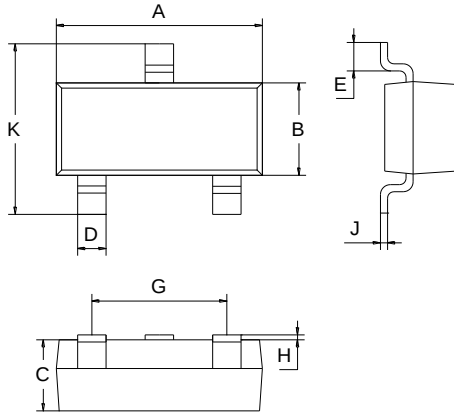


Fig 6 Transfer Characteristics



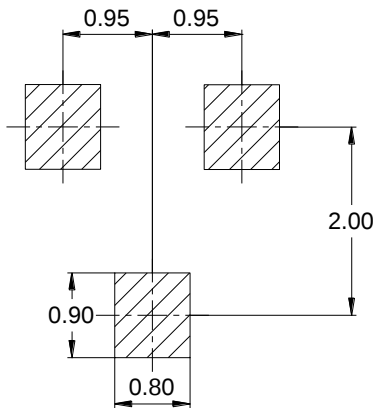
Package Outline Dimensions (Unit: mm)



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

Package Outline Dimensions (Unit: mm)

SOT-23



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