

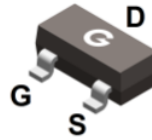
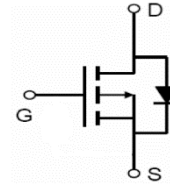
Features

- Low on resistance
- Low gate charge
- Trench technology power MOSFET

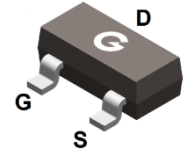
HF

Mechanical Data

- Case: SOT-23, SOT-23-3L
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-23



SOT-23-3L

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL0K8P10	SOT-23	3000 pcs / Tape & Reel	0K8P10
BL0K8P10-3L	SOT-23-3L	3000 pcs / Tape & Reel	0K8P10

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	-100	V
Gate-to-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($T_A = 25^\circ\text{C}$) ^{*1}	I_D	-1	A
Pulsed Drain Current	I_{DM}	-4	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_A = 25^\circ\text{C}$) ^{*1}	P_D	0.77	W
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	162	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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	-100	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -80V, V _{GS} = 0V	-	-	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
On Characteristics						
R _{DS(ON)}	Drain-Source On-resistance *2	V _{GS} = -10V,I _D = -1A	-	-	0.8	Ω
		V _{GS} = -4.5V,I _D = -0.5A	-	-	1	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250μA	-1	-	-3	V
Dynamic Characteristics						
R _G	Gate Resistance	V _{GS} = 0V, f = 1MHz	-	4.6	-	Ω
C _{ISS}	Input Capacitance	V _{GS} = 0V	-	300	-	pF
C _{OSS}	Output Capacitance	V _{DS} = -45V	-	20	-	
C _{RSS}	Reverse Transfer Capacitance	f = 1.0MHz	-	17	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time *3	V _{DD} = -10V V _{GS} = -10V R _G = 2.5Ω I _D = -1A	-	10	-	ns
t _r	Turn-on Rise Time *3		-	32	-	
t _{d(OFF)}	Turn-Off Delay Time *3		-	28	-	
t _f	Turn-Off Fall Time *3		-	9	-	
Q _G	Total Gate-Charge	V _{DD} = -10V	-	3.2	-	nC
Q _{GS}	Gate to Source Charge	V _{GS} = -10V	-	0.5	-	
Q _{GD}	Gate to Drain (Miller) Charge	I _D = -1A	-	1.1	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage *2	I _{SD} = -1A, V _{GS} = 0V	-	-	-1.2	V

Notes:

1. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper
2. The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
3. Guaranteed by design, not subject to production

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

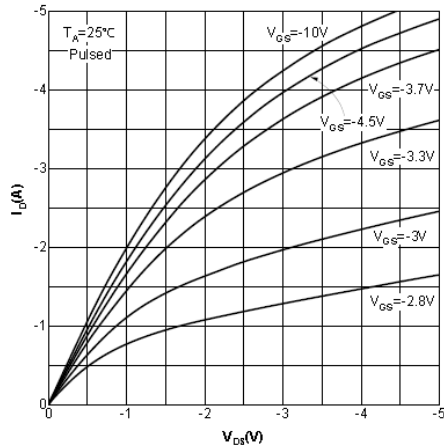


Fig 1 Typical Output Characteristics

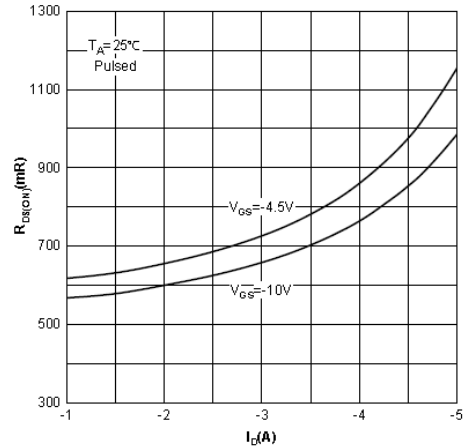


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

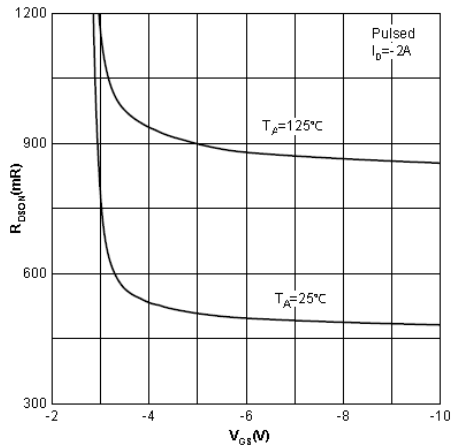


Fig 3 On-Resistance vs. Gate-Source Voltage

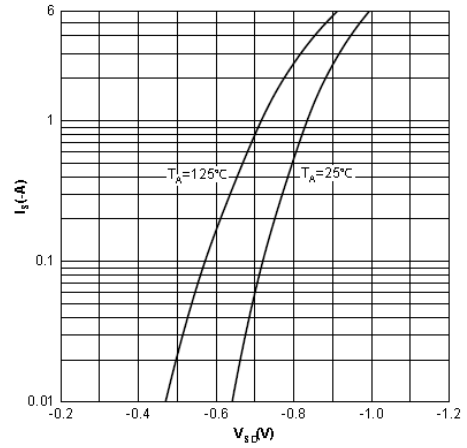


Fig 4 Body-Diode Characteristics

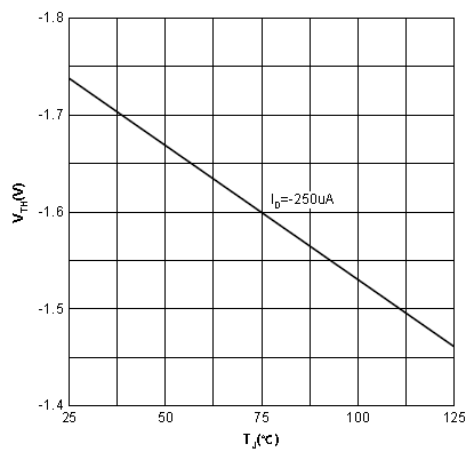


Fig 5 $V_{GS(th)}$ vs. Junction Temperature

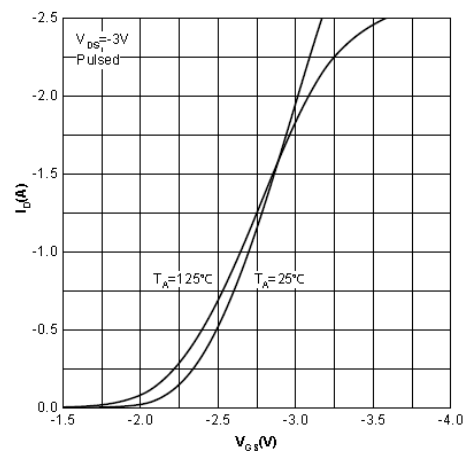
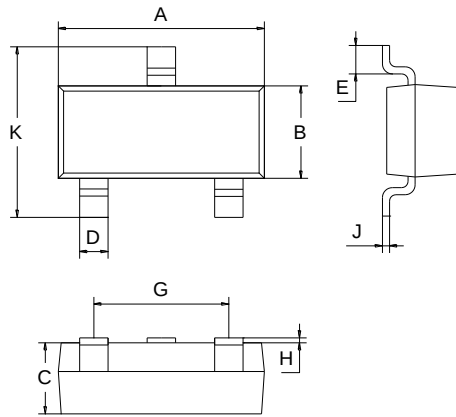
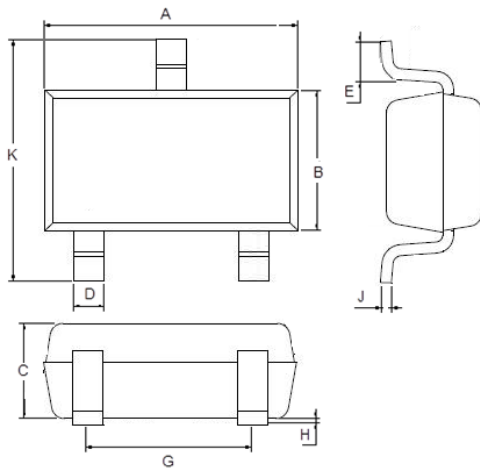


Fig 6 Transfer Characteristics

Package Outline Dimensions (Unit: mm)



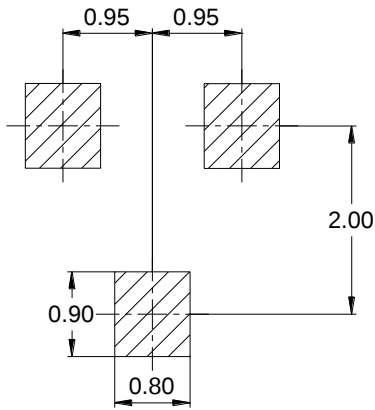
SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60



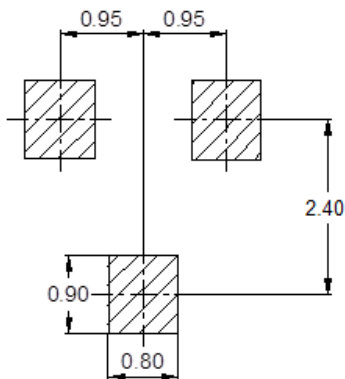
SOT-23-3L		
Dimension	Min.	Max.
A	2.80	3.00
B	1.50	1.70
C	1.00	1.20
D	0.35	0.45
E	0.35	0.55
G	1.80	2.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00

Package Outline Dimensions (Unit: mm)

SOT-23



SOT-23-3L



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