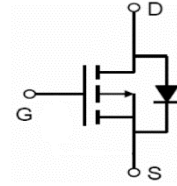


Features

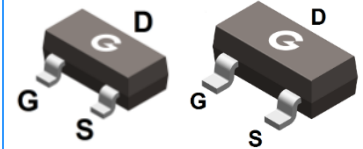
- Advanced trench technology
- Low on resistance
- Low gate charge
- RoHS compliant with Halogen-free

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°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 (T _A = 25°C) *1	I _D	-1	A
Continuous Drain Current (T _A = 25°C) *2		-0.76	
Continuous Drain Current (T _A = 70°C) *2		-0.6	
Pulsed Drain Current (t _p = 10μs, T _A = 25°C)	I _{DM}	-4	A
Power Dissipation (T _A = 25°C) *2	P _D	0.77	W
Operating Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction-to-Case	R _{θJC}	-	45	50	°C/W
Thermal Resistance Junction-to-Air *1	R _{θJA}	-	75	85	°C/W
Thermal Resistance Junction-to-Air *2		-	120	162	

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 ^{*3}	V _{GS} = -10V, I _D = -1A	-	-	0.8	Ω
		V _{GS} = -4.5V, I _D = -0.5A	-	-	1	
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 ^{*4}	V _{DD} = -10V	-	10	-	ns
t _r	Turn-on Rise Time ^{*4}	V _{GS} = -10V	-	32	-	
t _{d(OFF)}	Turn-Off Delay Time ^{*4}	R _G = 2.5Ω	-	28	-	
t _f	Turn-Off Fall Time ^{*4}	I _D = -1A	-	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 ^{*3}	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, $t < 1s$
2. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper, steady state
3. The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
4. Guaranteed by design, not subject to production

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

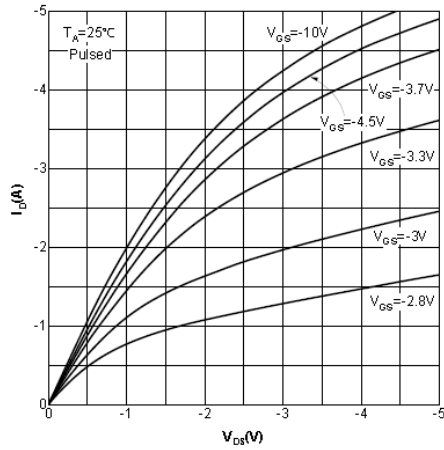


Fig 1 Typical Output Characteristics

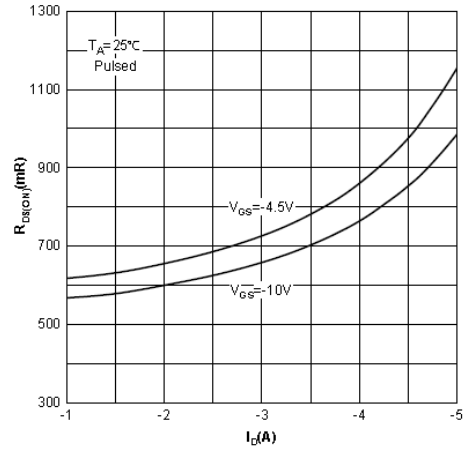


Fig 2 On-Resistance vs. Drain Current
and Gate Voltage

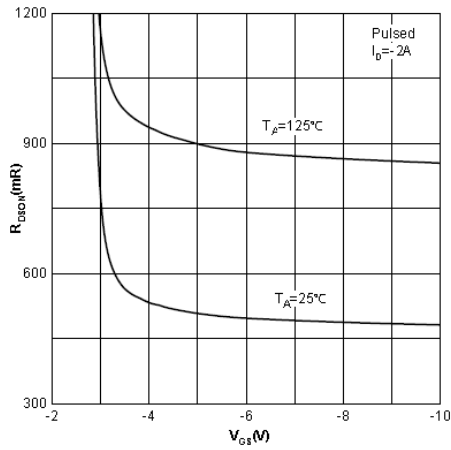


Fig 3 On-Resistance vs. Gate-Source Voltage

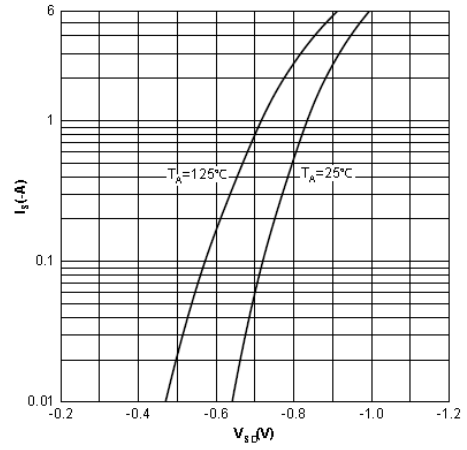


Fig 4 Body-Diode Characteristics

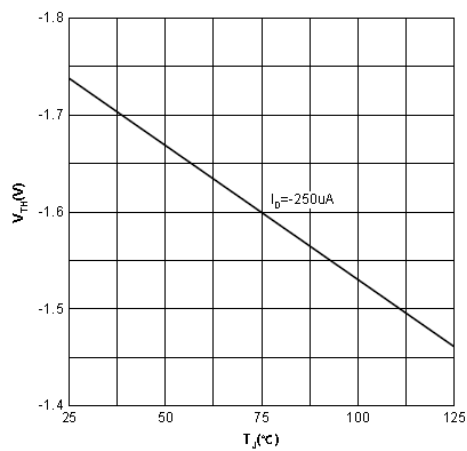


Fig 5 $V_{GS(th)}$ vs. Junction Temperature

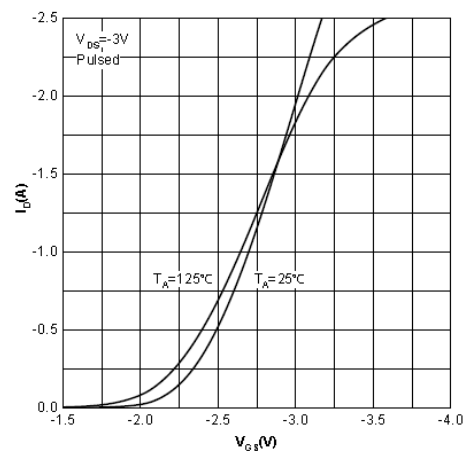


Fig 6 Transfer Characteristics

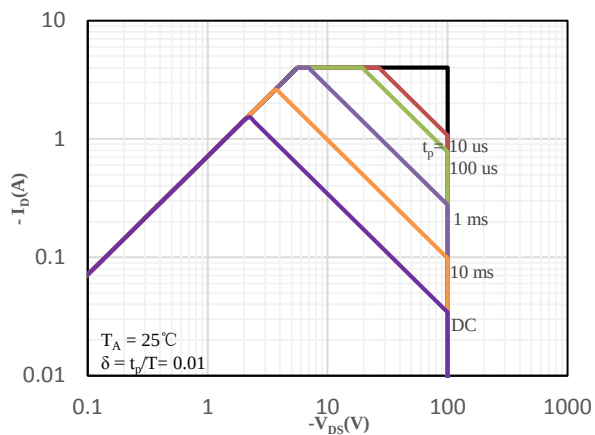


Fig 7 Safe Operation Area

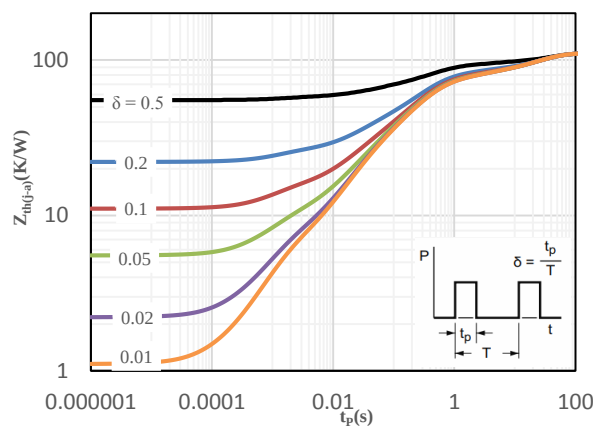
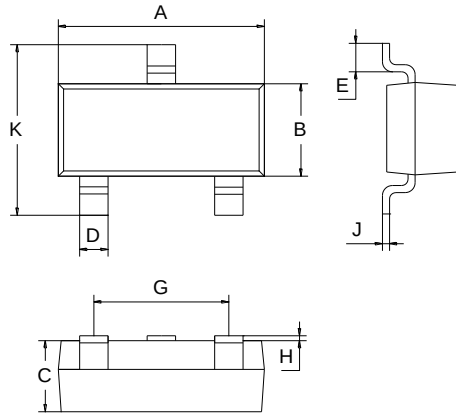
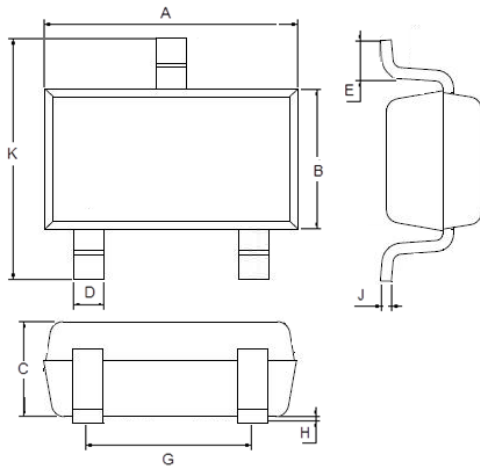


Fig 8 Maximum transient thermal impedance

Package Outline Dimensions (Unit: mm)



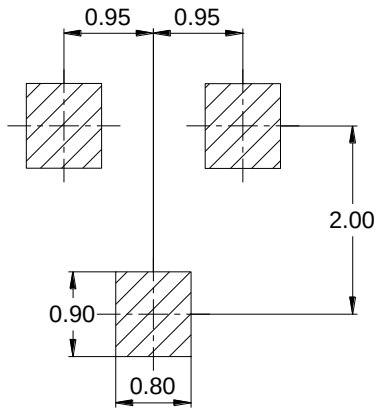
SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60



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

