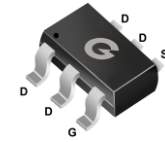
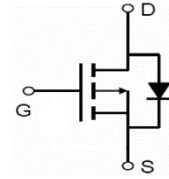


Features

- Super low gate charge
- 100% E_{AS} guaranteed
- Excellent C_{dv}/d_t effect decline
- Advanced high cell density technology

HF



SOT-23-6L

Mechanical Data

- Case: SOT-23-6L
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL3417-6L	SOT-23-6L	3000 pcs / Tape & Reel	3417

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	-30	V
Gate-to-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current ($T_A = 25^\circ\text{C}$, $V_{GS} = -10\text{V}$)	I_D	-5	A
Continuous Drain Current ($T_A = 100^\circ\text{C}$, $V_{GS} = -10\text{V}$)		-3.1	A
Pulsed Drain Current *1	I_{DM}	-20	A
Avalanche Energy, Single Pulsed *2	E_{AS}	35	mJ

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_A = 25^\circ\text{C}$)	P_D	1.6	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	78	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Electrical Characteristics (@ $T_J = 25^\circ\text{C}$ 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} = -30V, V _{GS} = 0V, T _J = 25°C	-	-	-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 *3	V _{GS} = -10V, I _D = -5A	-	22	30	mΩ
		V _{GS} = -4.5V, I _D = -4A	-	31	40	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.4	-2.5	V
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V V _{DS} = -15V f = 1.0MHz	-	1588	-	pF
C _{OSS}	Output Capacitance		-	186	-	
C _{RSS}	Reverse Transfer Capacitance		-	152	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time	V _{GS} = -10V V _{DD} = -15V I _D = -10A R _G = 3Ω	-	8.2	-	ns
t _r	Turn-on Rise Time		-	18.6	-	
t _{d(OFF)}	Turn-Off Delay Time		-	31.8	-	
t _f	Turn-Off Fall Time		-	18.4	-	
Q _G	Total Gate-Charge	V _{GS} = -10V V _{DD} = -15V I _D = -10A	-	31	-	nC
Q _{GS}	Gate to Source Charge		-	3.2	-	
Q _{GD}	Gate to Drain (Miller) Charge		-	6.0	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} = -1A, V _{GS} = 0V	-	-	-1.2	V
I _{SD}	Source-Drain Current(Body Diode)	T _A = 25°C	-	-	-5	A

Notes:

1. Repetitive rating; pulse width limited by max. junction temperature
2. Limited by T_{Jmax} , starting $T_J = 25^\circ\text{C}$, $L = 0.5\text{mH}$, $R_G = 25\Omega$, $V_{DS} = -15V$, $V_{GS} = -10V$
3. The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

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

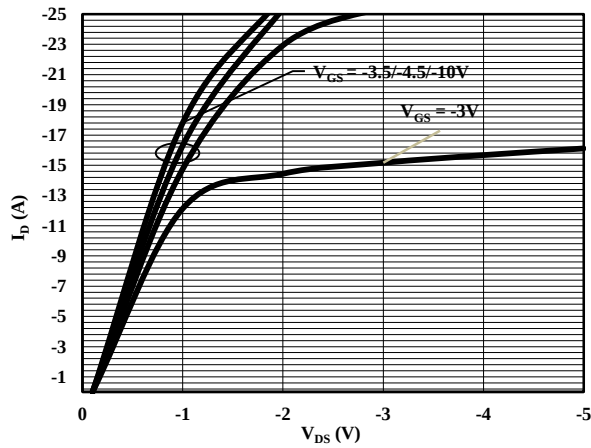


Fig 1 On-Region Characteristics

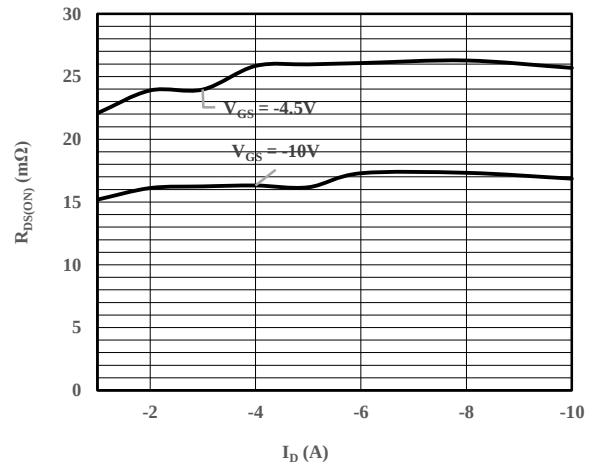


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

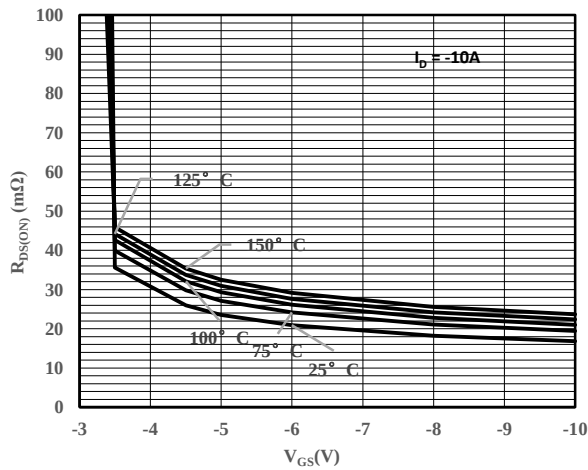


Fig 3 On-Resistance vs. Gate-Source Voltage

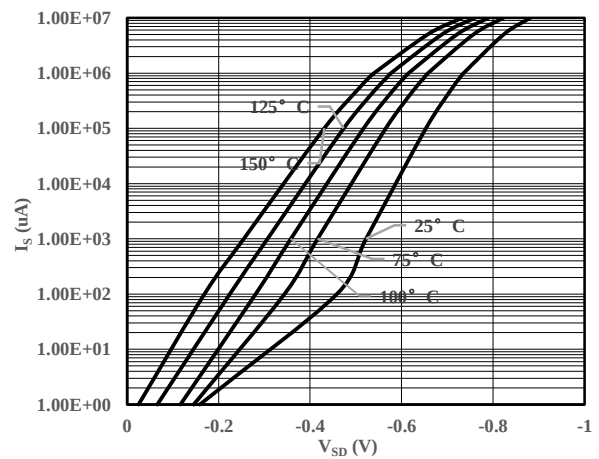


Fig 4 Body-Diode Characteristics

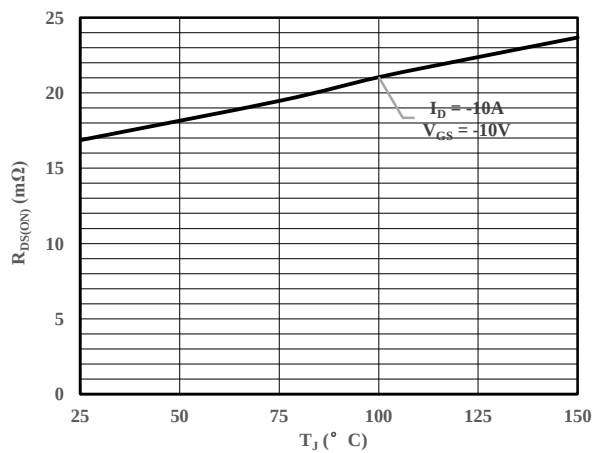


Fig 5 On-Resistance vs. Junction Temperature

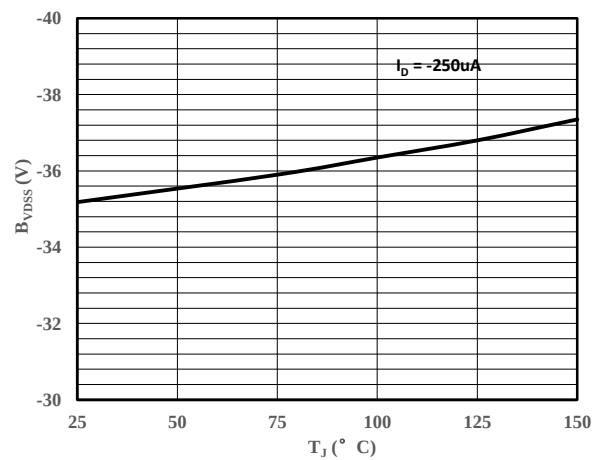


Fig 6 Drain-Source vs. Junction Temperature

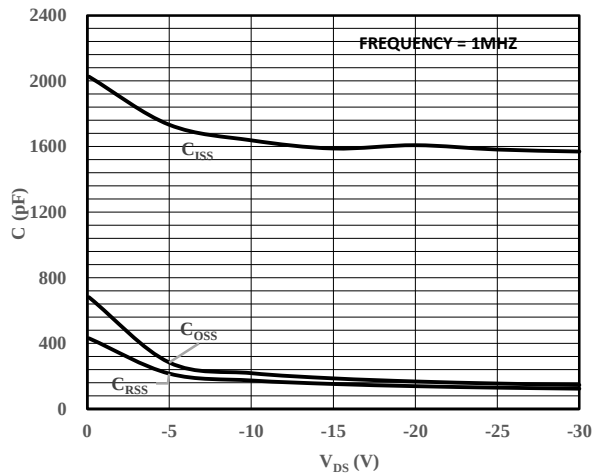


Fig 7 Capacitance Characteristics

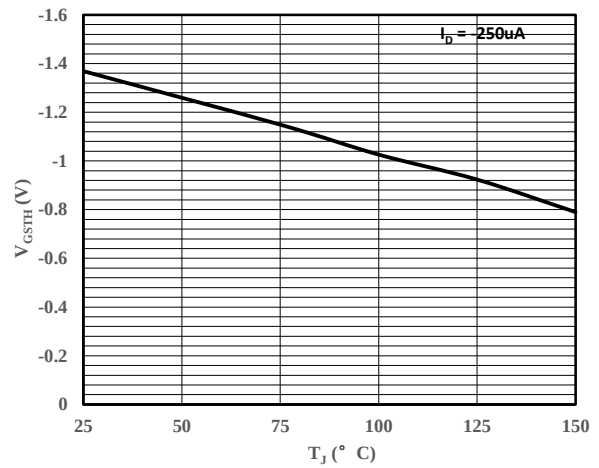


Fig 8 Gate Voltage vs. Junction Temperature

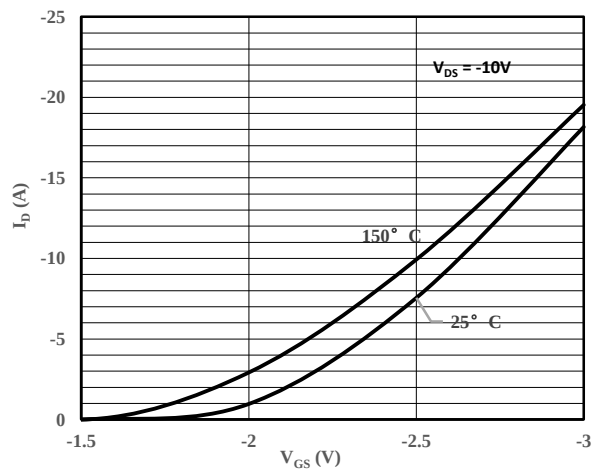


Fig 9 Transfer Characteristics

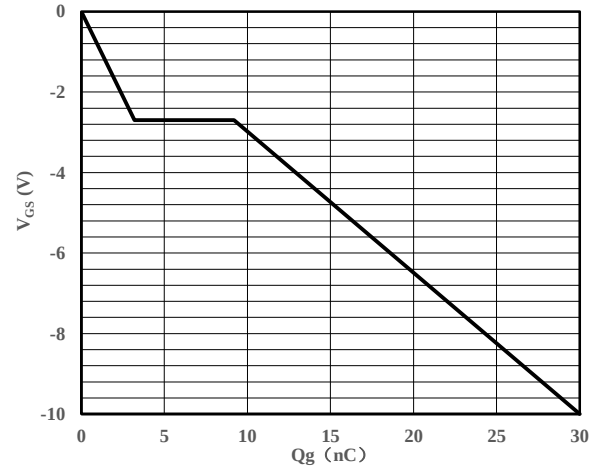


Fig 10 Gate-Charge Characteristics

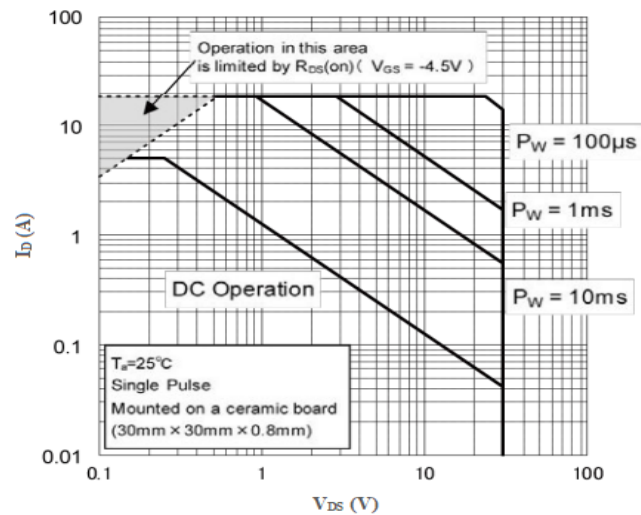
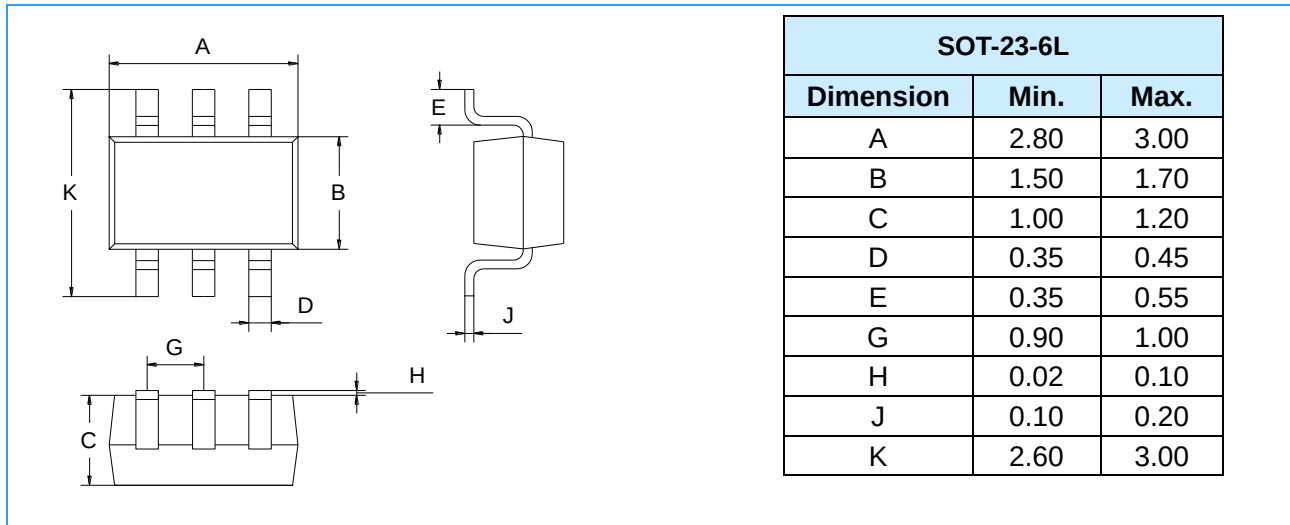
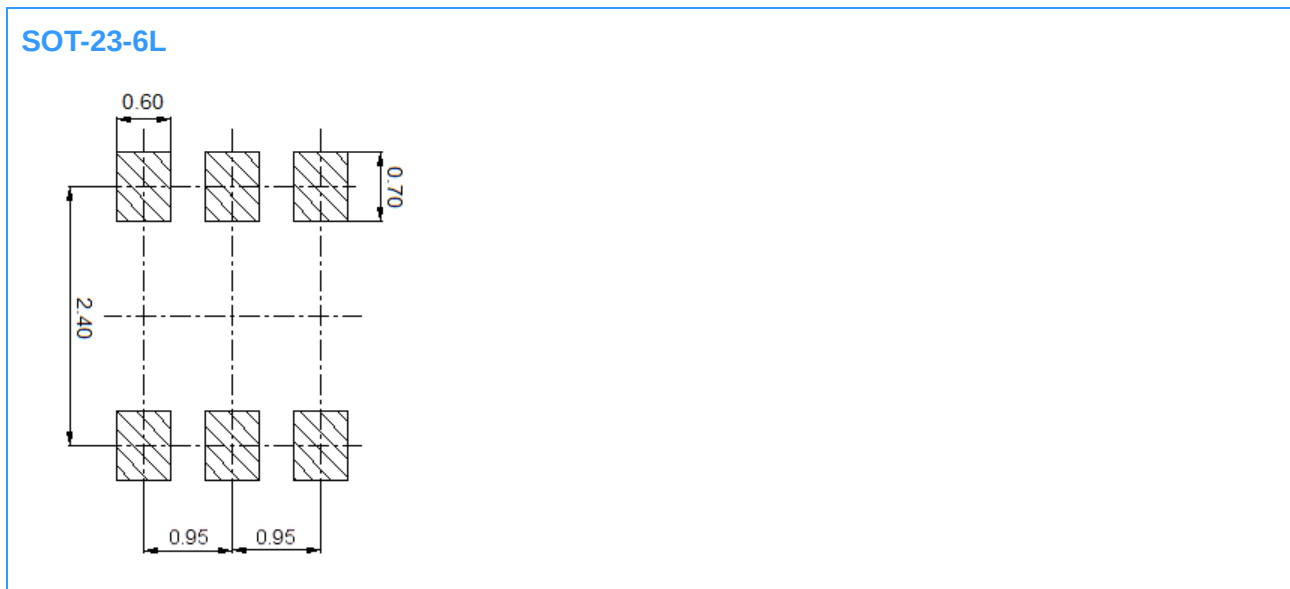


Fig 11 Maximum Safe Operating Area

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



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