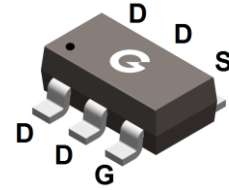
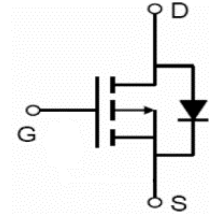


Features

- Super low gate charge
- 100% E_{AS} guaranteed
- Excellent C_{dv}/d_t effect decline
- Advanced high cell density technology
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

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
TBL3417-6L	SOT-23-6L	3000 pcs / Tape & Reel	3417

Maximum Ratings (@ T_A = 25°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°C, V _{GS} = -10V)	I _D	-5	A
Continuous Drain Current (T _A = 100°C, V _{GS} = -10V)		-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°C)	P _D	1.6	W
Thermal Resistance Junction-to-Air	R _{θJA}	78	°C/W
Operating Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°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)

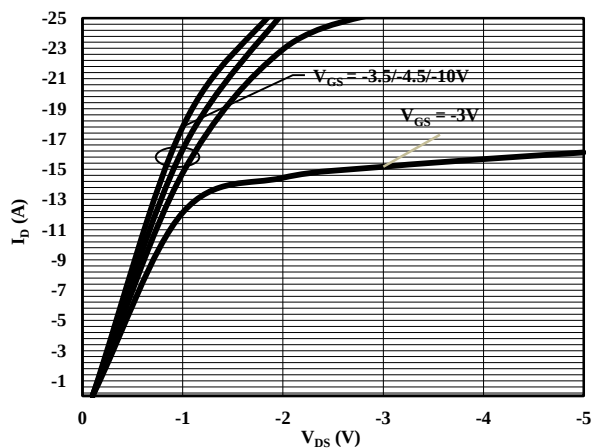


Fig 1 On-Region Characteristics

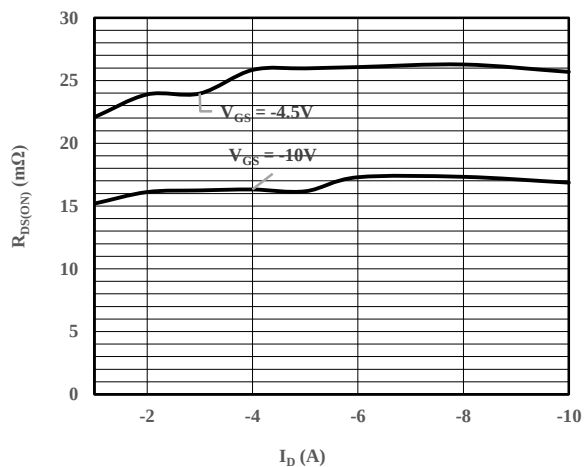


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

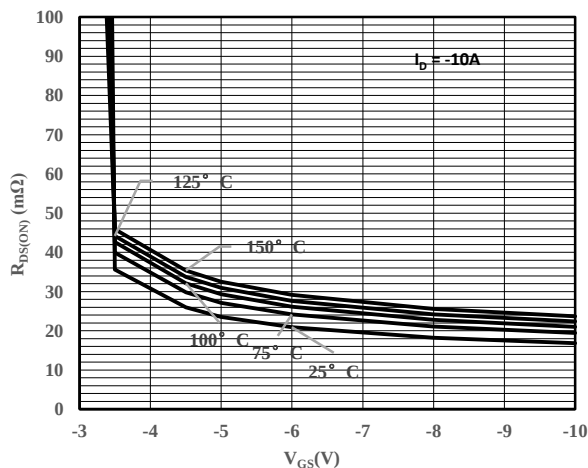


Fig 3 On-Resistance vs. Gate-Source Voltage

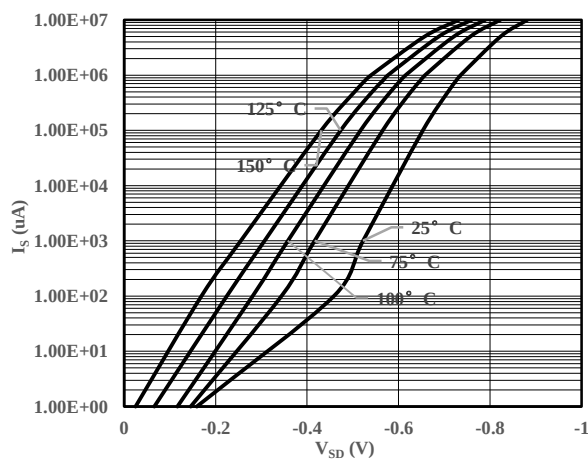


Fig 4 Body-Diode Characteristics

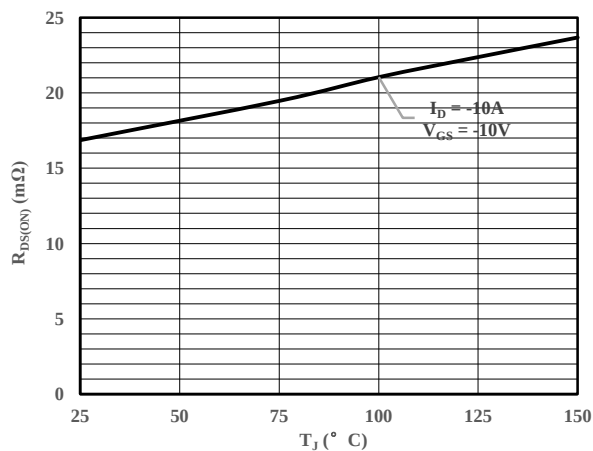


Fig 5 On-Resistance vs. Junction Temperature

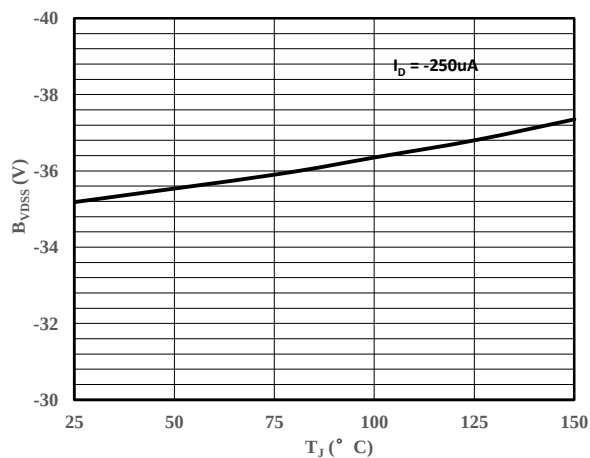


Fig 6 Drain-Source vs. Junction Temperature

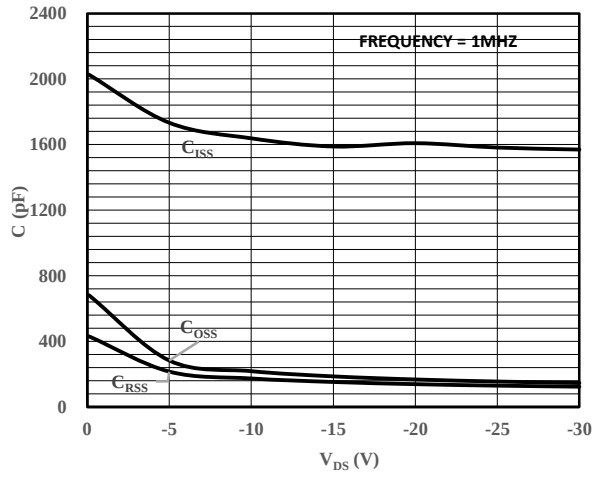


Fig 7 Capacitance Characteristics

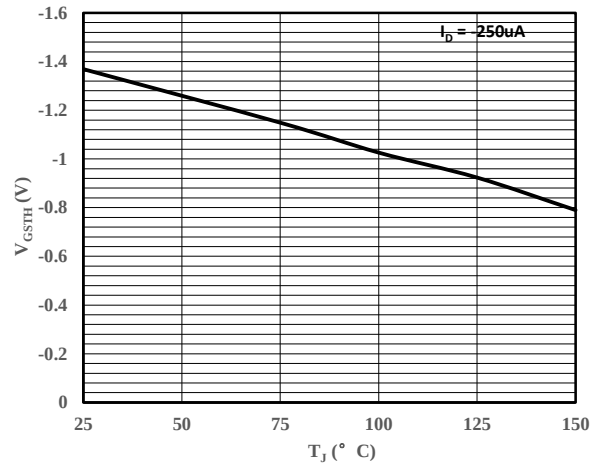


Fig 8 Gate Voltage vs. Junction Temperature

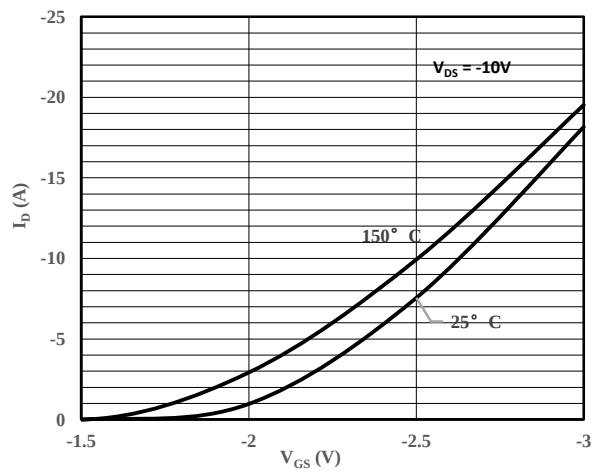


Fig 9 Transfer Characteristics

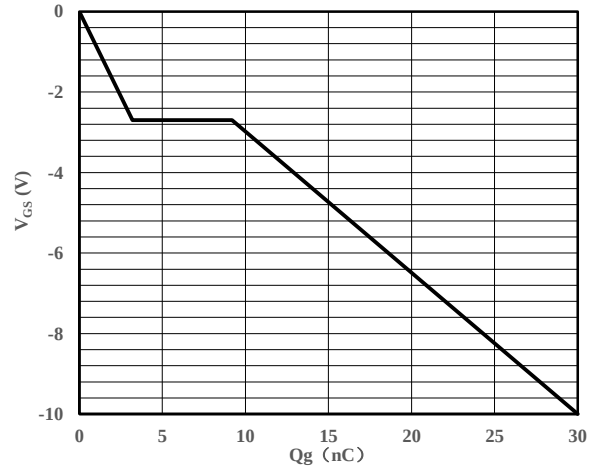
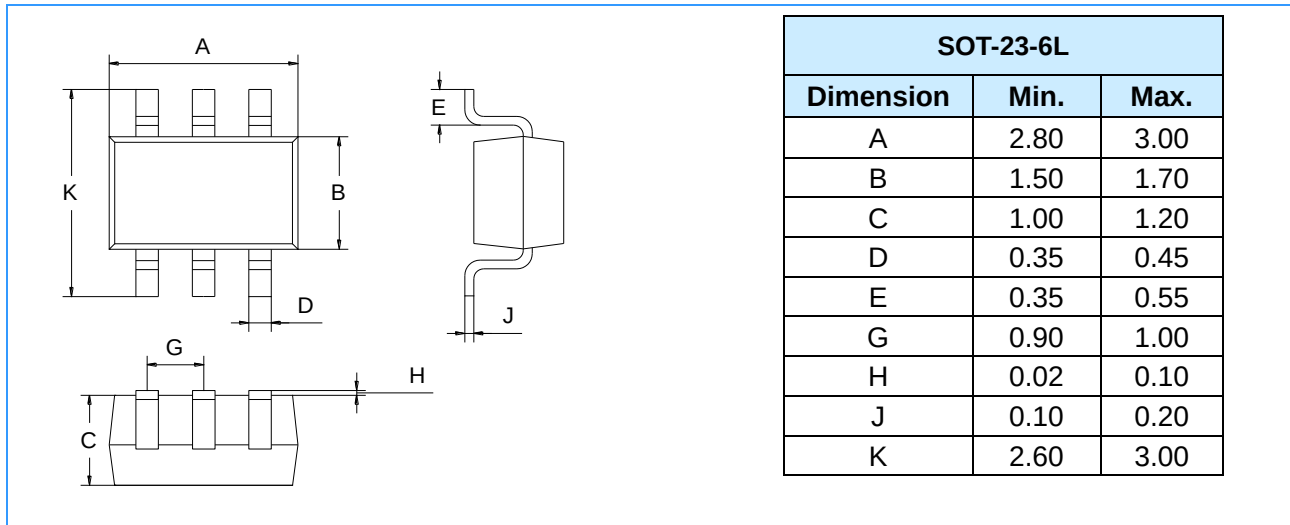
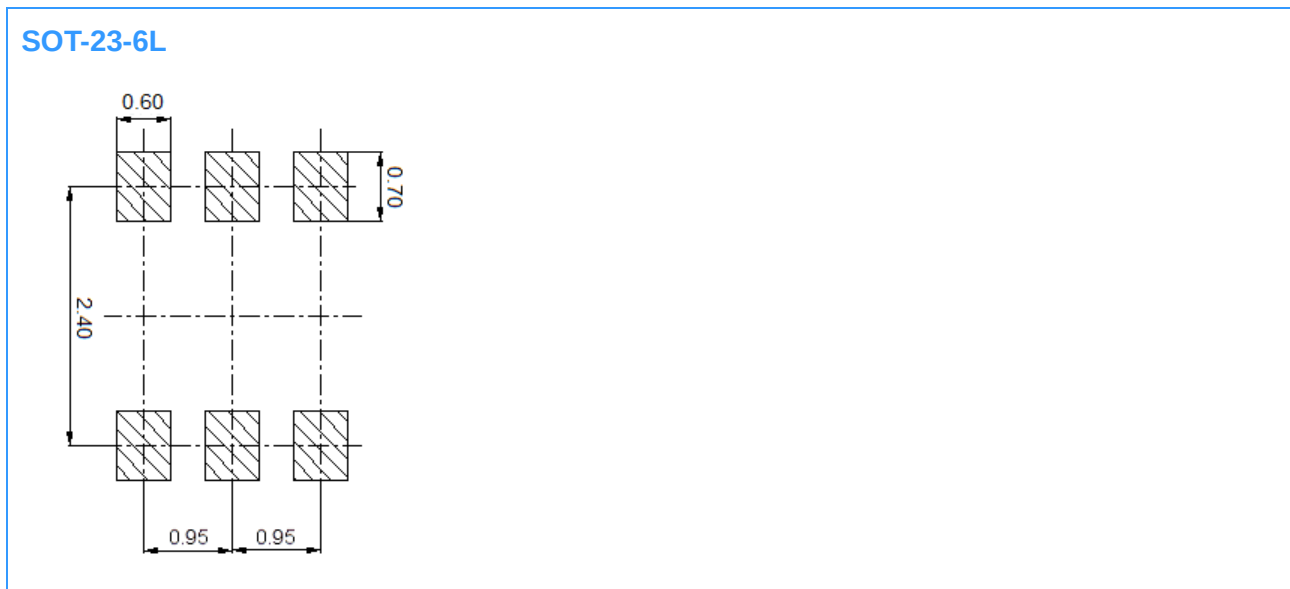


Fig 10 Gate-Charge Characteristics

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



IMPORTANT NOTICE

Changzhou Galaxy Century Microelectronics (GME) reserves the right to make changes without further notice to any product information (copyrighted) herein to make corrections, modifications, improvements, or other changes. GME does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.