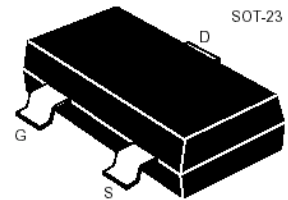
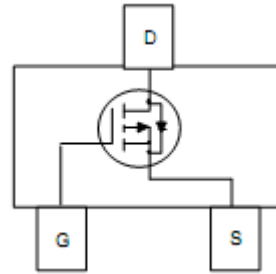




SOT-23 場效應晶體管(SOT-23 Field Effect Transistors)



### P-Channel Enhancement-Mode MOS FETs

### P 沟道增强型 MOS 场效应管

#### ■ MAXIMUM RATINGS 最大額定值

Characteristic 特性參數	Symbol 符號	Max 最大值	Unit 單位
Drain-Source Voltage 漏極-源極電壓	$BV_{DSS}$	-60	V
Gate- Source Voltage 柵極-源極電壓	$V_{GS}$	$\pm 20$	V
Drain Current (continuous) 漏極電流-連續	$I_D$	-1.6	A
Drain Current (pulsed) 漏極電流-脉冲	$I_{DM}$	-6	A
Total Device Dissipation 總耗散功率 $T_A=25^\circ\text{C}$ 環境溫度為 $25^\circ\text{C}$	$P_D$	1000	mW
Junction 結溫	$T_J$	150	$^\circ\text{C}$
Storage Temperature 儲存溫度	$T_{stg}$	-55to+150	$^\circ\text{C}$

#### ■ DEVICE MARKING 打標

**QL2309=E11**



### ■ELECTRICAL CHARACTERISTICS 電特性

( $T_A=25^{\circ}\text{C}$  unless otherwise noted 如無特殊說明，溫度為  $25^{\circ}\text{C}$ )

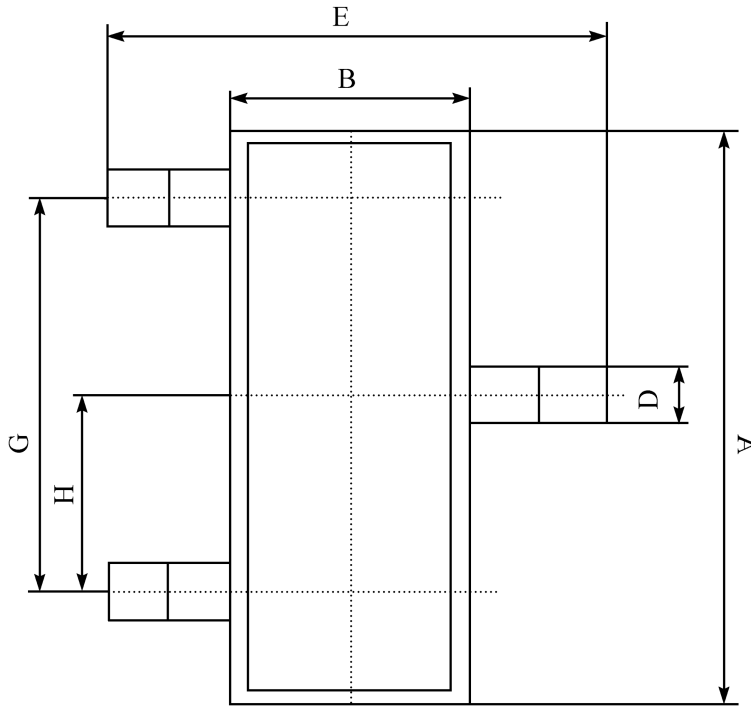
Characteristic 特性參數	Symbol 符號	Min 最小值	Typ 典型值	Max 最大值	Unit 單位
Drain-Source Breakdown Voltage 漏極-源極擊穿電壓( $I_D = -250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	-60	—	—	V
Gate Threshold Voltage 柵極開啓電壓( $I_D = -250\mu\text{A}, V_{GS}=V_{DS}$ )	$V_{GS(th)}$	-1	—	-3	V
Diode Forward Voltage Drop 內附二極管正向壓降( $I_S = -1.2\text{A}, V_{GS}=0\text{V}$ )	$V_{SD}$	—	—	-1.2	V
Zero Gate Voltage Drain Current 零柵壓漏極電流( $V_{GS}=0\text{V}, V_{DS} = -60\text{V}$ )	$I_{DSS}$	—	—	-10	$\mu\text{A}$
Gate Body Leakage 柵極漏電流( $V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$ )	$I_{GSS}$	—	—	$\pm 100$	nA
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D = -1.8\text{A}, V_{GS} = -10\text{V}$ )	$R_{DS(ON)}$	—	200	250	$\text{m}\Omega$
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D = -1.4\text{A}, V_{GS} = -4.5\text{V}$ )	$R_{DS(ON)}$	—	240	300	$\text{m}\Omega$
Input Capacitance 輸入電容 ( $V_{GS}=0\text{V}, V_{DS} = -25\text{V}, f=1\text{MHz}$ )	$C_{ISS}$	—	364	—	pF
Output Capacitance 輸出電容 ( $V_{GS}=0\text{V}, V_{DS} = -25\text{V}, f=1\text{MHz}$ )	$C_{OSS}$	—	41	—	pF
Turn-ON Time 開啓時間 ( $V_{DS} = -30\text{V}, I_D = -1\text{A}, R_{GEN}=3.3\Omega$ )	$t_{(on)}$	—	20	—	ns
Turn-OFF Time 關斷時間 ( $V_{DS} = -30\text{V}, I_D = -1\text{A}, R_{GEN}=3.3\Omega$ )	$t_{(off)}$	—	5.2	—	ns

Pulse Width  $\leq 300 \mu\text{s}$ ; Duty Cycle  $\leq 2.0\%$



### ■DIMENSION 外形封裝尺寸

單位(UNIT): mm



序號	數值及公差
A	$2.90 \pm 0.10$
B	$1.30 \pm 0.10$
C	$1.00 \pm 0.10$
D	$0.40 \pm 0.10$
E	$2.40 \pm 0.20$
G	$1.90 \pm 0.10$
H	$0.95 \pm 0.05$
J	$0.13 \pm 0.05$
K	$0.00-0.10$
M	$\geq 0.2$
N	$0.60 \pm 0.10$
P	$7 \pm 2^\circ$

