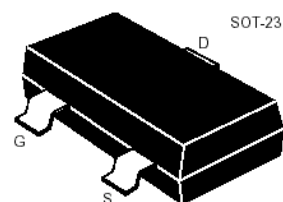




SI2302

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



### N-Channel Enhancement-Mode MOS FETs

N 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<br>漏極-源極電壓                                                          | $BV_{DSS}$ | 16        | V                  |
| Gate- Source Voltage<br>柵極-源極電壓                                                          | $V_{GS}$   | $\pm 8$   | V                  |
| Drain Current (continuous)<br>漏極電流-連續                                                    | $I_D$      | 2.6       | A                  |
| Drain Current (pulsed)<br>漏極電流-脉冲                                                        | $I_{DM}$   | 10        | A                  |
| Total Device Dissipation<br>總耗散功率<br>$T_A=25^{\circ}\text{C}$ 環境溫度為 $25^{\circ}\text{C}$ | $P_D$      | 450       | 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

SI2302-A2HB



SI2302

## ■ELECTRICAL CHARACTERISTICS 電特性

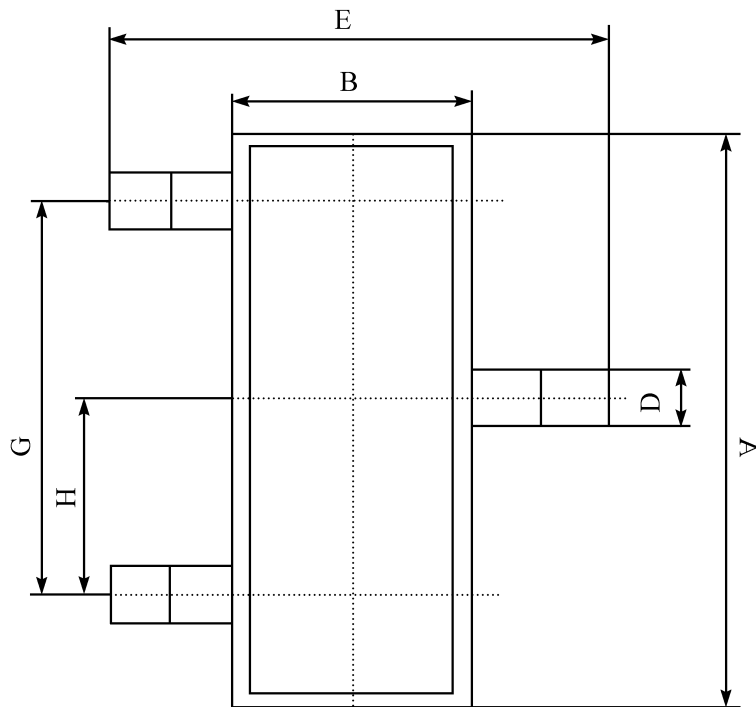
( $T_A=25^{\circ}\text{C}$  unless otherwise noted 如無特殊說明，溫度為  $25^{\circ}\text{C}$ )

| Characteristic<br>特性參數                                                                                                                                       | Symbol<br>符號 | Min<br>最小值 | Typ<br>典型值 | Max<br>最大值    | Unit<br>單位    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------|------------|---------------|---------------|
| Drain-Source Breakdown Voltage<br>漏極-源極擊穿電壓( $I_D = 250\mu\text{A}, V_{GS}=0\text{V}$ )                                                                      | $BV_{DSS}$   | 16         | —          | —             | V             |
| Gate Threshold Voltage<br>柵極開啓電壓( $I_D = 250\mu\text{A}, V_{GS} = V_{DS}$ )                                                                                  | $V_{GS(th)}$ | 0.4        | —          | 1.2           | V             |
| Drain-Source On Voltage<br>漏極-源極導通電壓( $I_D = 50\text{mA}, V_{GS} = 5\text{V}$ )<br>( $I_D = 500\text{mA}, V_{GS} = 10\text{V}$ )                             | $V_{DS(ON)}$ | —          | —          | 0.375<br>3.75 | V             |
| Diode Forward Voltage Drop<br>內附二極管正向壓降( $I_S = 0.75\text{A}, V_{GS}=0\text{V}$ )                                                                            | $V_{SD}$     | —          | —          | 1.2           | V             |
| Zero Gate Voltage Drain Current<br>零柵壓漏極電流( $V_{GS}=0\text{V}, V_{DS} = 12\text{V}$ )<br>( $V_{GS}=0\text{V}, V_{DS} = 12\text{V}, T_A=55^{\circ}\text{C}$ ) | $I_{DSS}$    | —          | —          | 1<br>10       | $\mu\text{A}$ |
| Gate Body Leakage<br>柵極漏電流( $V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$ )                                                                                       | $I_{GSS}$    | —          | —          | $\pm 100$     | nA            |
| Static Drain-Source On-State Resistance<br>靜態漏源導通電阻( $I_D=3\text{A}, V_{GS}=4.5\text{V}$ )<br>( $I_D=2\text{A}, V_{GS}=2.5\text{V}$ )                        | $R_{DS(ON)}$ | —          | —          | 0.09<br>0.13  | $\Omega$      |
| Input Capacitance 輸入電容<br>( $V_{GS}=0\text{V}, V_{DS} = 6\text{V}, f=1\text{MHz}$ )                                                                          | $C_{ISS}$    | —          | —          | 880           | pF            |
| Common Source Output Capacitance<br>共源輸出電容( $V_{GS}=0\text{V}, V_{DS} = 6\text{V}, f=1\text{MHz}$ )                                                          | $C_{OSS}$    | —          | —          | 270           | pF            |
| Turn-ON Time 開啓時間<br>( $V_{DS} = 6\text{V}, I_D = 1\text{A}, R_{GEN}=6\Omega$ )                                                                              | $t_{(on)}$   | —          | —          | 20            | ns            |
| Turn-OFF Time 關斷時間<br>( $V_{DS} = 6\text{V}, I_D = 1\text{A}, R_{GEN}=6\Omega$ )                                                                             | $t_{(off)}$  | —          | —          | 65            | ns            |

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

SI2302

■ DIMENSION 外形封装尺寸



| 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  | $7 \pm 2^\circ$ |

