

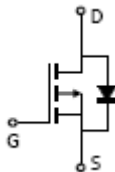
## SOT-23 Plastic-Encapsulate MOSFETS

### FEATURE

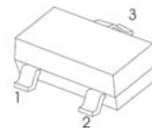
TrenchFET Power MOSFET

### APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter



### SOT-23



1. GATE
2. SOURCE
3. DRAIN

### MARKING: A5

#### ■ Maximum ratings ( $T_a=25^\circ\text{C}$ unless otherwise noted)

| Characteristic<br>特性參數   | Symbol<br>符號 | Max<br>最大值 | Unit<br>單位       |
|--|--------------|------------|------------------|
| Drain-Source Voltage<br>漏極-源極電壓  | $BV_{DSS}$   | -20        | V                |
| Gate- Source Voltage<br>柵極-源極電壓  | $V_{GS}$     | $\pm 10$   | V                |
| Drain Current (continuous)<br>漏極電流-連續  | $I_D$        | -3.9       | A                |
| Drain Current (pulsed)<br>漏極電流-脈沖  | $I_{DM}$     | -15        | A                |
| Total Device Dissipation<br>總耗散功率<br>$T_A=25^\circ\text{C}$ 環境溫度為 $25^\circ\text{C}$ | $P_D$        | 1200       | mW               |
| Junction 結溫  | $T_J$        | 150        | $^\circ\text{C}$ |
| Storage Temperature 儲存溫度   | $T_{stg}$    | -55to+150  | $^\circ\text{C}$ |

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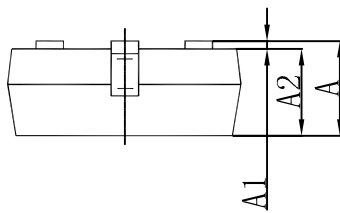
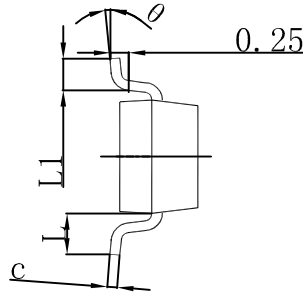
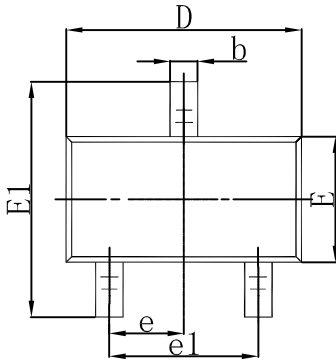
■ Maximum ratings ( $T_a=25^{\circ}\text{C}$  unless otherwise noted)

| 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( $I_D = -250\mu\text{A}, V_{GS}=0\text{V}$ )   | $BV_{DSS}$   | -20        | —          | —          | V                |
| Gate Threshold Voltage<br>柵極開啟電壓( $I_D = -250\mu\text{A}, V_{GS} = V_{DS}$ )   | $V_{GS(th)}$ | -0.5       | —          | -1.5       | V                |
| Diode Forward Voltage Drop<br>內附二極管正向壓降( $I_S = -0.75\text{A}, V_{GS}=0\text{V}$ )   | $V_{SD}$     | —          | —          | -1.5       | V                |
| Zero Gate Voltage Drain Current<br>零柵壓漏極電流( $V_{GS}=0\text{V}, V_{DS} = -16\text{V}$ )<br>( $V_{GS}=0\text{V}, V_{DS} = -16\text{V}, T_A=55^{\circ}\text{C}$ ) | $I_{DSS}$    | —          | —          | -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( $I_D = -3.9\text{A}, V_{GS} = -4.5\text{V}$ )   | $R_{DS(ON)}$ | —          | 55         | 65         | $\text{m}\Omega$ |
| Static Drain-Source On-State Resistance<br>靜態漏源導通電阻( $I_D = -2\text{A}, V_{GS} = -2.5\text{V}$ )   | $R_{DS(ON)}$ | —          | 70         | 80         | $\text{m}\Omega$ |
| Input Capacitance 輸入電容<br>( $V_{GS}=0\text{V}, V_{DS} = -10\text{V}, f=1\text{MHz}$ )  | $C_{ISS}$    | —          | 600        | —          | pF               |
| Output Capacitance 輸出電容<br>( $V_{GS}=0\text{V}, V_{DS} = -10\text{V}, f=1\text{MHz}$ )   | $C_{OSS}$    | —          | 120        | —          | pF               |
| Turn-ON Time 開啟時間<br>( $V_{DS} = -10\text{V}, I_D = -2.8\text{A}, R_{GEN}=6\Omega$ )   | $t_{(on)}$   | —          | 8          | —          | ns               |
| Turn-OFF Time 關斷時間<br>( $V_{DS} = -10\text{V}, I_D = -2.8\text{A}, R_{GEN}=6\Omega$ )  | $t_{(off)}$  | —          | 60         | —          | ns               |

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

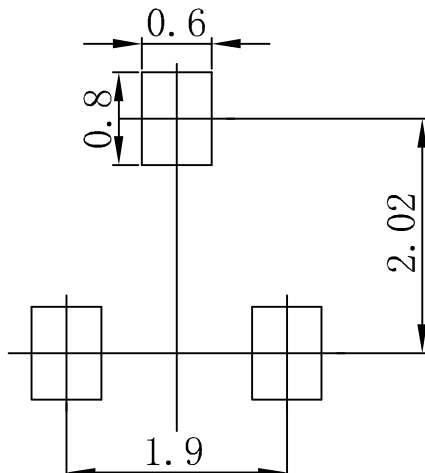
## SOT-23 Plastic-Encapsulate MOSFETS

### SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950 TYP                 |       | 0.037 TYP            |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550 REF                 |       | 0.022 REF            |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 6°    |

### SOT-23 Suggested Pad Layout



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

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