

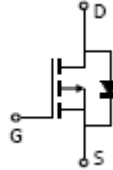
## SOT-23 Plastic-Encapsulate MOSFETS

### FEATURE

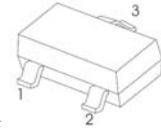
TrenchFET Power MOSFET

### APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter



### SOT-23



1. GATE
2. SOURCE
3. DRAIN

MARKING: SP or B84

### ■ 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	$BV_{DSS}$	-50	V
Gate- Source Voltage 柵極-源極電壓	$V_{GS}$	$\pm 20$	V
Drain Current (continuous) 漏極電流-連續	$I_{DR}$	-130	mA
Drain Current (pulsed) 漏極電流-脈沖	$I_{DRM}$	-520	mA

### ■ THERMAL CHARACTERISTICS 熱特性

Characteristic 特性	Symbol 符號	Max 最大值	Unit 單位
Total Device Dissipation 總耗散功率 $T_A=25^\circ\text{C}$ 環境溫度為 $25^\circ\text{C}$ Derate above $25^\circ\text{C}$ 超過 $25^\circ\text{C}$ 遞減	$P_D$	200	mW
		1.8	mW/ $^\circ\text{C}$
Thermal Resistance Junction to Ambient 熱阻	$R_{\theta JA}$	350	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature 結溫和儲存溫度	$T_J, T_{stg}$	150 $^\circ\text{C}$ , -55to+150 $^\circ\text{C}$	

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### ■ ELECTRICAL CHARACTERISTICS 電特性

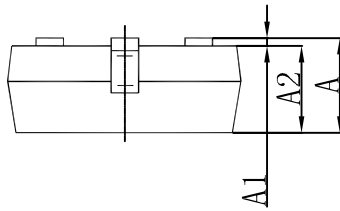
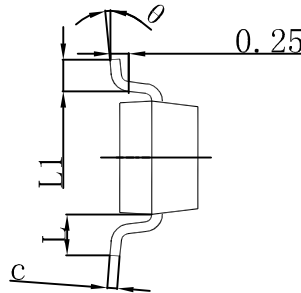
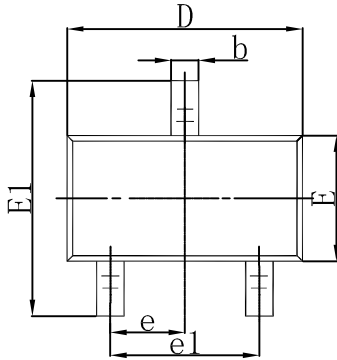
( $T_A=25^{\circ}\text{C}$  unless otherwise noted 如無特殊說明，溫度為  $25^{\circ}\text{C}$ )

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( $I_D=-250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	-50	—	—	V
Gate Threshold Voltage 柵極開啓電壓( $I_D=-250\mu\text{A}, V_{GS}=V_{DS}$ )	$V_{GS(th)}$	-1.0	—	-2.5	V
Diode Forward Voltage Drop 內附二極管正向壓降( $I_{SD}=-200\text{mA}, V_{GS}=0\text{V}$ )	$V_{SD}$	—	—	-1.5	V
Zero Gate Voltage Drain Current 零柵壓漏極電流( $V_{GS}=0\text{V}, V_{DS}=-50\text{V}$ ) ( $V_{GS}=0\text{V}, V_{DS}=-50\text{V}, T_A=125^{\circ}\text{C}$ )	$I_{DSS}$	—	—	-15 -60	$\mu\text{A}$
Gate Body Leakage 柵極漏電流( $V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$ )	$I_{GSS}$	—	—	$\pm 10$	nA
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D=-100\text{mA}, V_{GS}=-5\text{V}$ )	$R_{DS(ON)}$	—	—	10	$\Omega$
Input Capacitance 輸入電容 ( $V_{GS}=0\text{V}, V_{DS}=-25\text{V}, f=1\text{MHz}$ )	$C_{ISS}$	—	73	—	pF
Common Source Output Capacitance 共源輸出電容( $V_{GS}=0\text{V}, V_{DS}=-25\text{V}, f=1\text{MHz}$ )	$C_{OSS}$	—	10	—	pF
Turn-ON Time 開啓時間 ( $V_{DS}=-30\text{V}, I_D=-270\text{mA}, R_{GEN}=6\Omega$ )	$t_{(on)}$	—	—	5	ns
Turn-OFF Time 關斷時間 ( $V_{DS}=-30\text{V}, I_D=-270\text{mA}, R_{GEN}=6\Omega$ )	$t_{(off)}$	—	—	20	ns
Reverse Recovery Time 反向恢復時間 ( $I_{SD}=-100\text{mA}, V_{GS}=0\text{V}$ )	$t_{rr}$	—	10	—	ns

- FR-5=1.0×0.75×0.062in.
- Alumina=0.4×0.3×0.024in.99.5%alumina.
- Pulse Width≤300  $\mu\text{s}$ ; Duty Cycle≤2.0%.

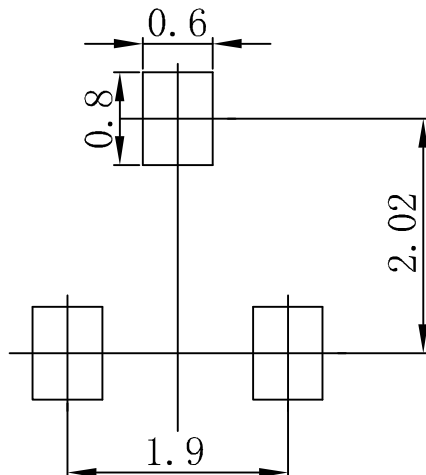
## SOT-23 Plastic-Encapsulate MOSFETS

### 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.