

## SOT-23 Plastic-Encapsulate MOSFETS

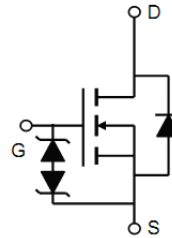
### FEATURE

TrenchFET Power MOSFET

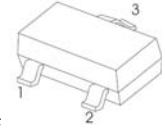
### APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter

### MARKING: AF



### SOT-23



1. GATE
2. SOURCE
3. DRAIN

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

Characteristic 特性參數	Symbol 符號	Max 最大值	Unit 單位
Drain-Source Voltage 漏極-源極電壓	$BV_{DSS}$	20	V
Gate- Source Voltage 柵極-源極電壓	$V_{GS}$	$\pm 8$	V
Drain Current (continuous) 漏極電流-連續	$I_D$	6.5	A
Drain Current (pulsed) 漏極電流-脈沖	$I_{DM}$	30	A
Total Device Dissipation 總耗散功率 $T_A=25^\circ\text{C}$ 環境溫度為 $25^\circ\text{C}$	$P_D$	1400	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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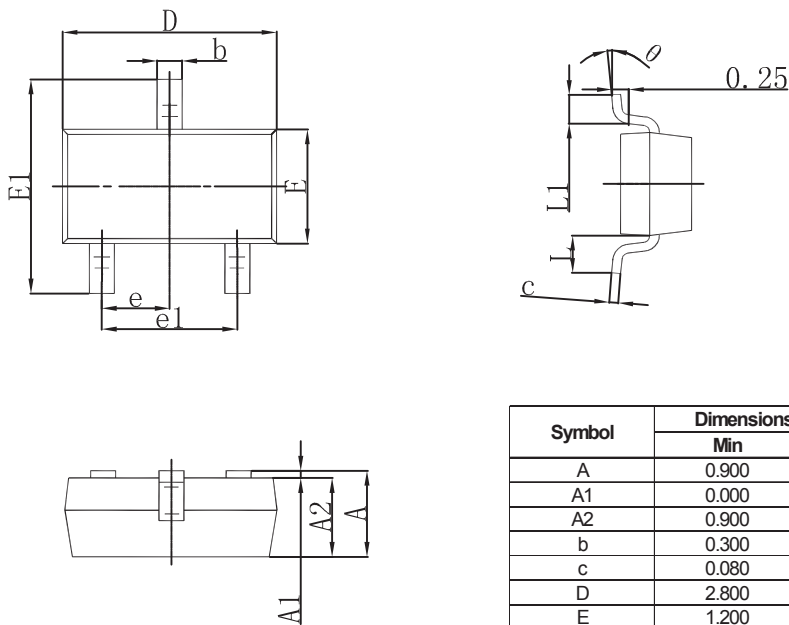
### Electrical characteristics (T<sub>a</sub>=25°C unless otherwise noted)

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 <sub>D</sub> = 250uA, V <sub>GS</sub> =0V)	BV <sub>DSS</sub>	20	—	—	V
Gate Threshold Voltage 柵極開啓電壓(I <sub>D</sub> =250uA, V <sub>GS</sub> = V <sub>DS</sub> )	V <sub>GS(th)</sub>	0.4	—	1	V
Diode Forward Voltage Drop 內附二極管正向壓降(I <sub>S</sub> =1A, V <sub>GS</sub> =0V)	V <sub>SD</sub>	—	—	1	V
Zero Gate Voltage Drain Current 零柵壓漏極電流(V <sub>GS</sub> =0V, V <sub>DS</sub> = 16V) (V <sub>GS</sub> =0V, V <sub>DS</sub> = 16V, T <sub>A</sub> =55°C)	I <sub>DSS</sub>	—	—	1 5	uA
Gate Body Leakage 柵極漏電流(V <sub>GS</sub> =+4.5V, V <sub>DS</sub> =0V) (V <sub>GS</sub> =+8V, V <sub>DS</sub> =0V)	I <sub>GSS</sub>	—	—	+1 +10	uA
Static Drain-Source On-State Resistance 靜態漏源導通電阻(I <sub>D</sub> = 6.5A, V <sub>GS</sub> = 4.5V)	R <sub>DS(ON)</sub>	—	—	22	mΩ
Static Drain-Source On-State Resistance 靜態漏源導通電阻(I <sub>D</sub> = 5.5A, V <sub>GS</sub> = 2.5V)	R <sub>DS(ON)</sub>	—	—	26	mΩ
Static Drain-Source On-State Resistance 靜態漏源導通電阻(I <sub>D</sub> = 5A, V <sub>GS</sub> = 1.8V)	R <sub>DS(ON)</sub>	—	—	34	mΩ
Input Capacitance 輸入電容 (V <sub>GS</sub> =0V, V <sub>DS</sub> = 10V, f=1MHz)	C <sub>ISS</sub>	—	1160	—	pF
Output Capacitance 輸出電容 (V <sub>GS</sub> =0V, V <sub>DS</sub> = 10V, f=1MHz)	C <sub>OSS</sub>	—	180	—	pF
Turn-ON Time 開啓時間 (V <sub>DS</sub> = 10V, I <sub>D</sub> = 3A, R <sub>GEN</sub> =6Ω)	t <sub>(on)</sub>	—	8	—	ns
Turn-OFF Time 關斷時間 (V <sub>DS</sub> = 10V, I <sub>D</sub> = 3A, R <sub>GEN</sub> =6Ω)	t <sub>(off)</sub>	—	60	—	ns

Pulse Width ≤ 300 μs; Duty Cycle ≤ 2.0%

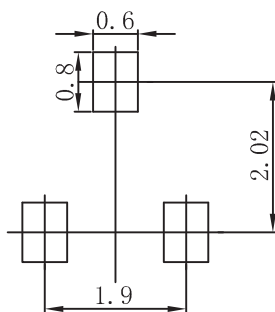
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### SOT-23 Package Outline Dimensions



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°	8°

### 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.