

SOT-23 Plastic-Encapsulate MOSFETS

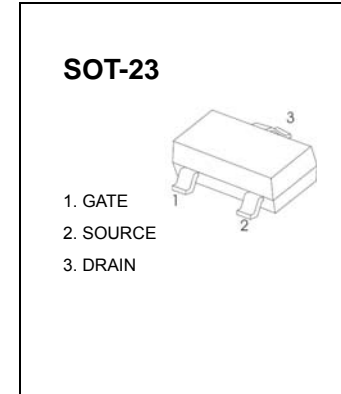
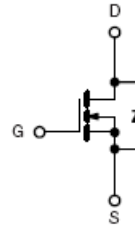
FEATURE

TrenchFET Power MOSFET

APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter

MARKING: I42



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

Characteristic 特性參數	Symbol 符號	Rat 額定值	Unit 單位
Drain-Source Voltage 漏極-源極電壓	BV_{DSS}	100	V
Gate- Source Voltage 柵極-源極電壓	V_{GS}	± 20	V
Drain Current (continuous) 漏極電流-連續	I_D (at $TC = 25^\circ\text{C}$)	1	A
Drain Current (pulsed) 漏極電流-脈沖	I_{DM}	4	A
Total Device Dissipation 總耗散功率	P_{TOT} (at $TC = 25^\circ\text{C}$)	1.4	W
Thermal Resistance Junction-Ambient 熱阻	$R_{\theta JA}$	100	$^\circ\text{C}/\text{W}$
Junction/Storage Temperature 結溫/儲存溫度	T_J, T_{stg}	-55~150	$^\circ\text{C}$

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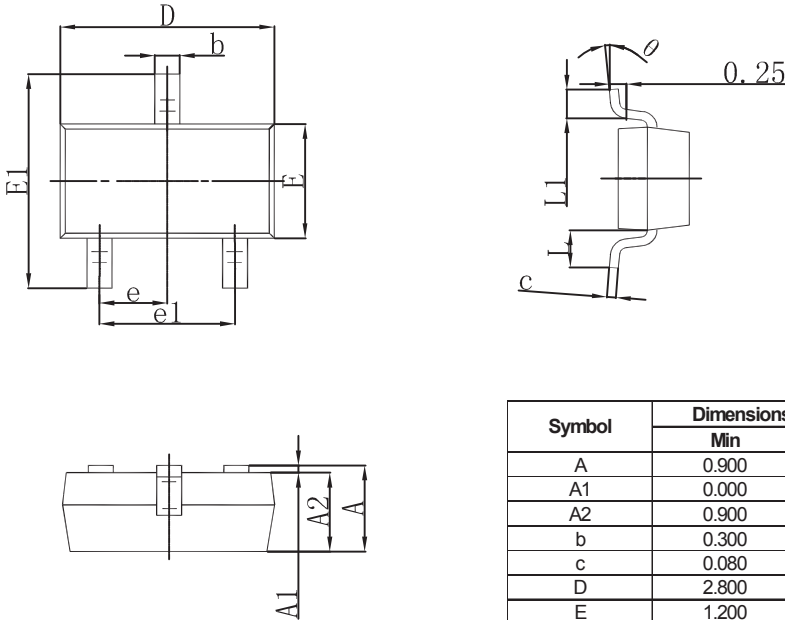
Electrical characteristics (T_a=25°C unless otherwise noted)

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 _D =250uA, V _{GS} =0V)	BV _{DSS}	100	—	—	V
Gate Threshold Voltage 柵極開啓電壓(I _D =250uA, V _{GS} =V _{DS})	V _{GS(th)}	1	1.5	3	V
Zero Gate Voltage Drain Current 零柵壓漏極電流(V _{GS} =0V, V _{DS} =80V)	I _{DSS}	—	—	1	uA
Gate Body Leakage 柵極漏電流(V _{GS} =±20V, V _{DS} =0V)	I _{GSS}	—	—	±100	nA
Static Drain-Source On-State Resistance 靜態漏源導通電阻(I _D =1A, V _{GS} =10V) (I _D =0.8A, V _{GS} =4.5V)	R _{DS(ON)}	—	520 550	630 720	mΩ
Source Drain Current 源極-漏極電流	I _{SD}	—	—	1	A
Diode Forward Voltage Drop 內附二極管正向壓降(I _{SD} =1A, V _{GS} =0V)	V _{SD}	—	—	1.2	V
Input Capacitance 輸入電容 (V _{GS} =0V, V _{DS} =50V, f=1MHz)	C _{ISS}	—	100	—	pF
Common Source Output Capacitance 共源輸出電容(V _{GS} =0V, V _{DS} =50V, f=1MHz)	C _{OSS}	—	13	—	pF
Gate Source Charge 柵源電荷密度 (V _{DS} =50V, I _D =1A, V _{GS} =10V)	Q _{gs}	—	0.4	—	nC
Gate Drain Charge 柵漏電荷密度 (V _{DS} =50V, I _D =1A, V _{GS} =10V)	Q _{gd}	—	0.8	—	nC
Turn-On Delay Time 開啓延遲時間 (V _{DS} =50V, I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _{d(on)}	—	5	—	ns
Turn-On Rise Time 開啓上升時間 (V _{DS} =50V, I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _r	—	4	—	ns
Turn-Off Delay Time 關斷延遲時間 (V _{DS} =50V, I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _{d(off)}	—	12	—	ns
Turn-On Fall Time 開啓下降時間 (V _{DS} =50V, I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _f	—	5	—	ns

Pulse Width ≤ 300 μs; Duty Cycle ≤ 2.0%

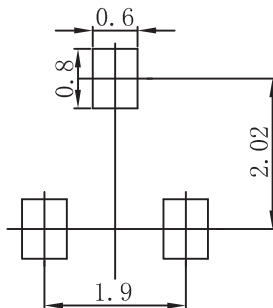
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SOT-23 Package Outline Dimensions



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: ± 0.05 mm.
3. The pad layout is for reference purposes only.