

## AS3415E P-Channel MOSFET(ESD)

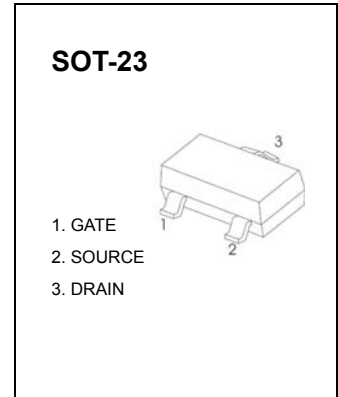
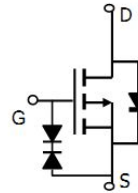
### FEATURE

TrenchFET Power MOSFET

### APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter

MARKING: A15E



### 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	$I_D$	-4	A
Drain Current (pulsed) 漏極電流-脉冲	$I_{DM}$	-17	A
ESD(HBM) 靜電釋放(人體模型)		2500	V
Total Device Dissipation 總耗散功率 $T_A=25^{\circ}\text{C}$ 環境溫度為 $25^{\circ}\text{C}$	$P_D$	1000	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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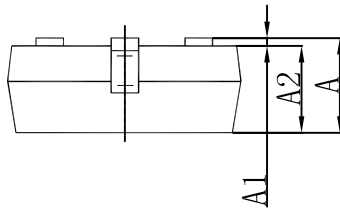
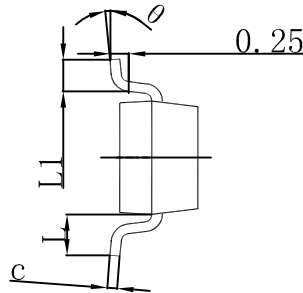
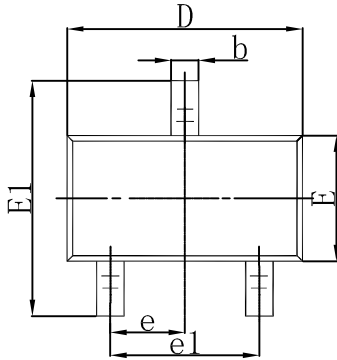
**Maximum ratings ( $T_a=25^{\circ}\text{C}$  unless otherwise noted)**

Characteristic 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( $I_D = -250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	-20	—	—	V
Gate Threshold Voltage 柵極開啓電壓( $I_D = -250\mu\text{A}, V_{GS} = V_{DS}$ )	$V_{GS(th)}$	-0.3	—	-1	V
Diode Forward Voltage Drop 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 零柵壓漏極電流( $V_{GS}=0\text{V}, V_{DS} = -16\text{V}$ ) ( $V_{GS}=0\text{V}, V_{DS} = -16\text{V}, T_A=55^{\circ}\text{C}$ )	$I_{DSS}$	—	—	-1 -10	$\mu\text{A}$
Gate Body Leakage 柵極漏電流( $V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$ )	$I_{GSS}$	—	—	$\pm 10$	$\mu\text{A}$
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D = -4\text{A}, V_{GS} = -4.5\text{V}$ )	$R_{DS(ON)}$	—	35	43	$\text{m}\Omega$
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D = -3\text{A}, V_{GS} = -2.5\text{V}$ )	$R_{DS(ON)}$	—	45	54	$\text{m}\Omega$
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D = -2\text{A}, V_{GS} = -1.8\text{V}$ )	$R_{DS(ON)}$	—	56	73	$\text{m}\Omega$
Input Capacitance 輸入電容 ( $V_{GS}=0\text{V}, V_{DS} = -10\text{V}, f=1\text{MHz}$ )	$C_{ISS}$	—	1450	—	pF
Output Capacitance 輸出電容 ( $V_{GS}=0\text{V}, V_{DS} = -10\text{V}, f=1\text{MHz}$ )	$C_{OSS}$	—	205	—	pF
Turn-ON Time 開啓時間 ( $V_{DS} = -10\text{V}, I_D = -2.8\text{A}, R_{GEN}=6\Omega$ )	$t_{(on)}$	—	9.5	—	ns
Turn-OFF Time 關斷時間 ( $V_{DS} = -10\text{V}, I_D = -2.8\text{A}, R_{GEN}=6\Omega$ )	$t_{(off)}$	—	94	—	ns

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

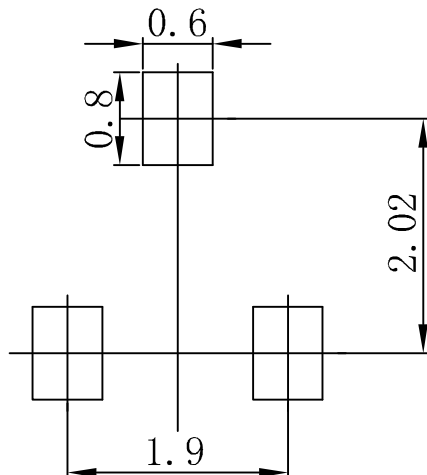
## AS3415E P-Channel MOSFET(ESD)

### 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.