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TP131C Serirs

300mA,Ultra-Low Noise, CMOS LDO Regulator

www.sot23.com.tw

General Description

The TP131C is a high-performance, 300mA LDO regulator, offering extremely high PSRR and ultra-low dropout. Ideal for portable RF and wireless applications with demanding performance and space requirements.

The TP131C is available in 5pin SOT23-5,SOT23-3L DFN1X1-4L,Package .the output standards of 1.2V 1.5V 1.8V 2.5V 2.8V 3.0V 3.3V

Features

- Quiescent Current: 70uA
- PSRR:70dB@1KHz
- < 1uA current at shutdown mode
- Output current:300mA(Typ.)
- SOT23-5 package
- SOT23-3 package
- DFN1X1-4 package

Applications

- CDM/GSM mobile phone
- PDAs /MP3
- Audio/Video equipment

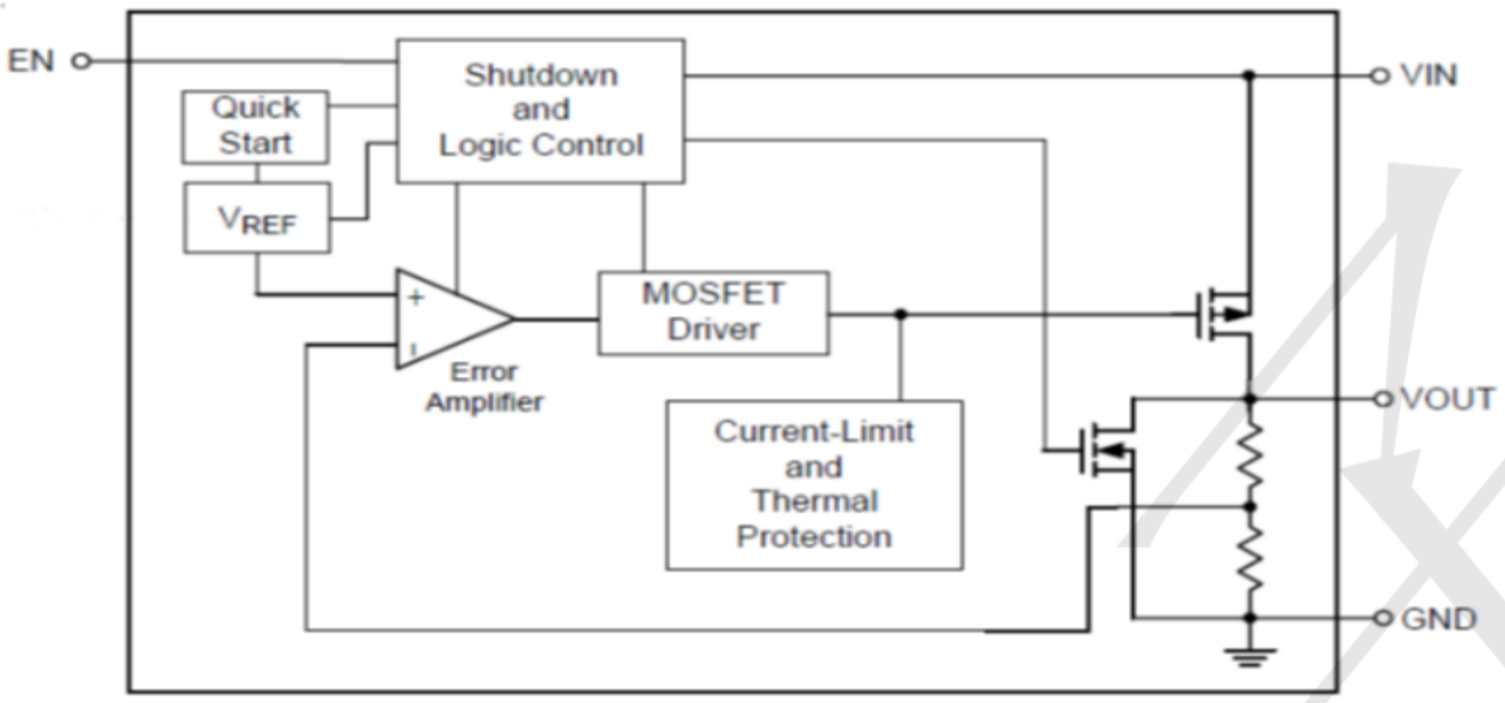
Ordering Information

TP131C33S5

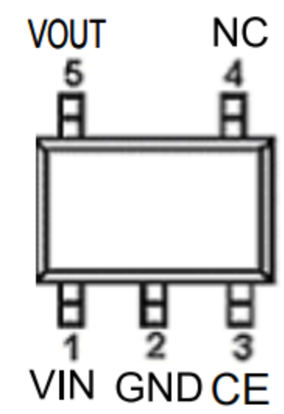
S5:SOT23-5 Package
S3:SOT23-3 Package
D4:DFN1X1-4 Package

Output voltage: 12=1.2V
15=1.5V
18=1.8V
25=2.5V
28=2.8V
30=3.0V
33=3.3V

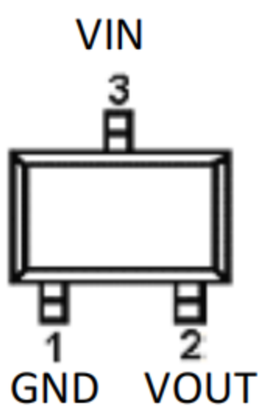
BLOCK DIAGRAM



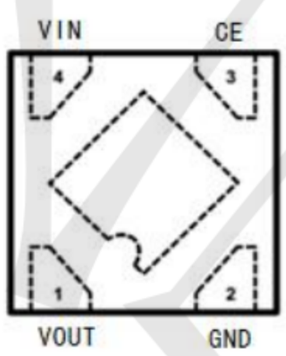
PIN CONFIGURATION



SOT23-5



SOT23



DFN1X1-4

Pin Name	Function
VIN	Supply power
GND	Ground
CE	Enable pin
NC	NC
VOUT	Voltage output

Absolute Maximum Rating (T_A=25°C unless otherwise noted)

Parameter	Symbol	Maximum Rating		Unit
Input Voltage	V_{IN}	6		V
Output Voltage	V_{OUT}	V_{SS}-0.3～V_{IN}+0.3		
Output Current	I_{out}	450		mA
Power Dissipation	P_D	SOT-23-5	250	mW
Operating Ambient Temperature	Topr	-40～+85		°C
Storage Temperature	Tstg	-40～+125		

Electrical Characteristics (T =25°C unless otherwise noted)

(Vin=Vout+1V,Cin=Cout=1uF,Ta=25^{0}C)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=40mA, V_{IN}=Vout+1V	X 0.98	V_{OUT} (T) (Note 1)	X 1.02	V
Input Voltage	V_{IN}				6	V
Max. Output Current	I_{OUT}max	V_{IN}=Vout+1V		300		mA
Load Regulation	ΔV_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤100mA		50		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		90		mV
	V_{dif2}	I_{OUT} =200mA		230		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		70		μA
Standby Current	I_{CEL}	Vce＝0V		1		μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤8V		0.05		%/V
Output Noise	en	I_{OUT} =40mA, 300Hz~50kHz		50		uVrms
Ripple Rejection Rate	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =40mA,f=1kHz		70		dB

TYPICAL APPLICATION

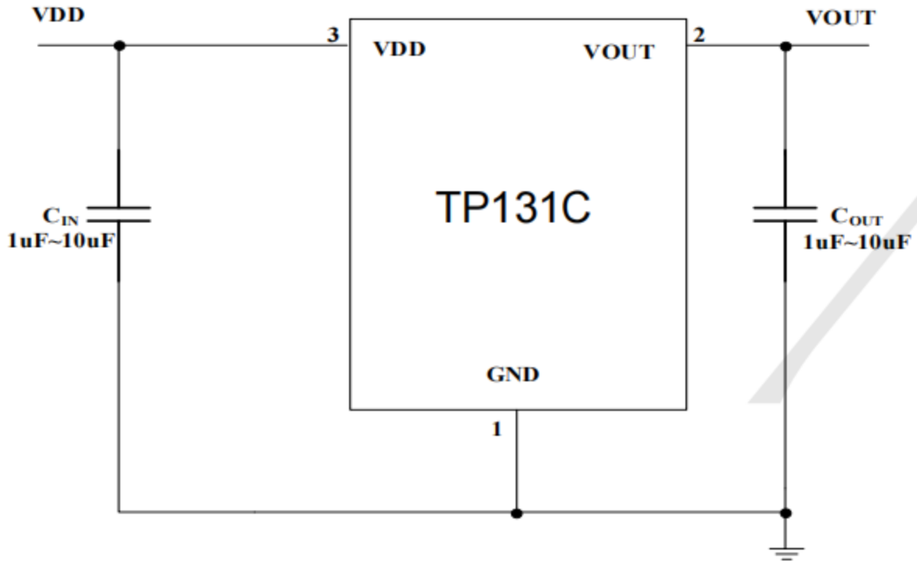


Figure 1: Application circuit of Fixed V_{OUT} LDO

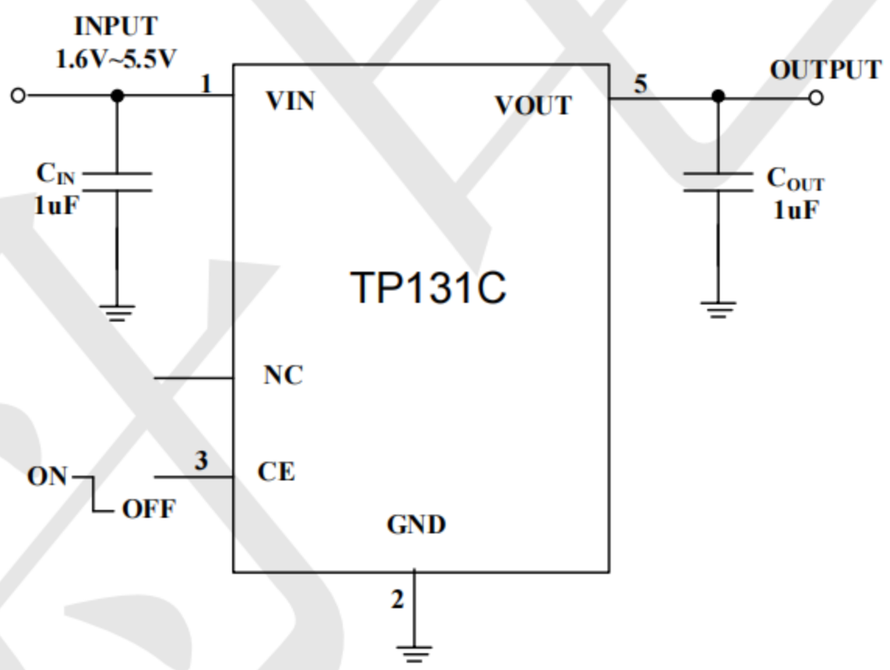
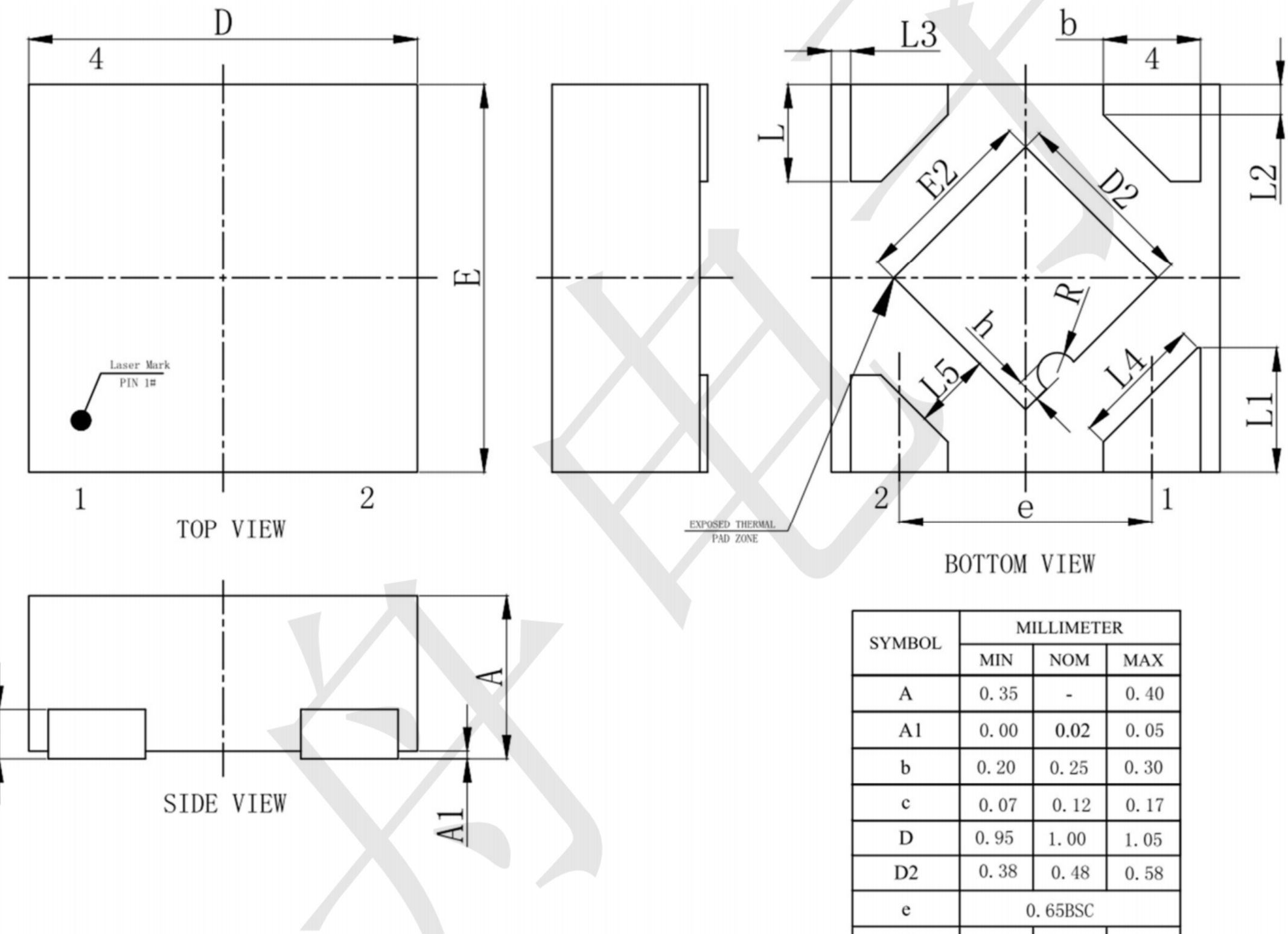


Figure 2: Application circuit of Fixed V_{OUT} LDO with enable function

Package information

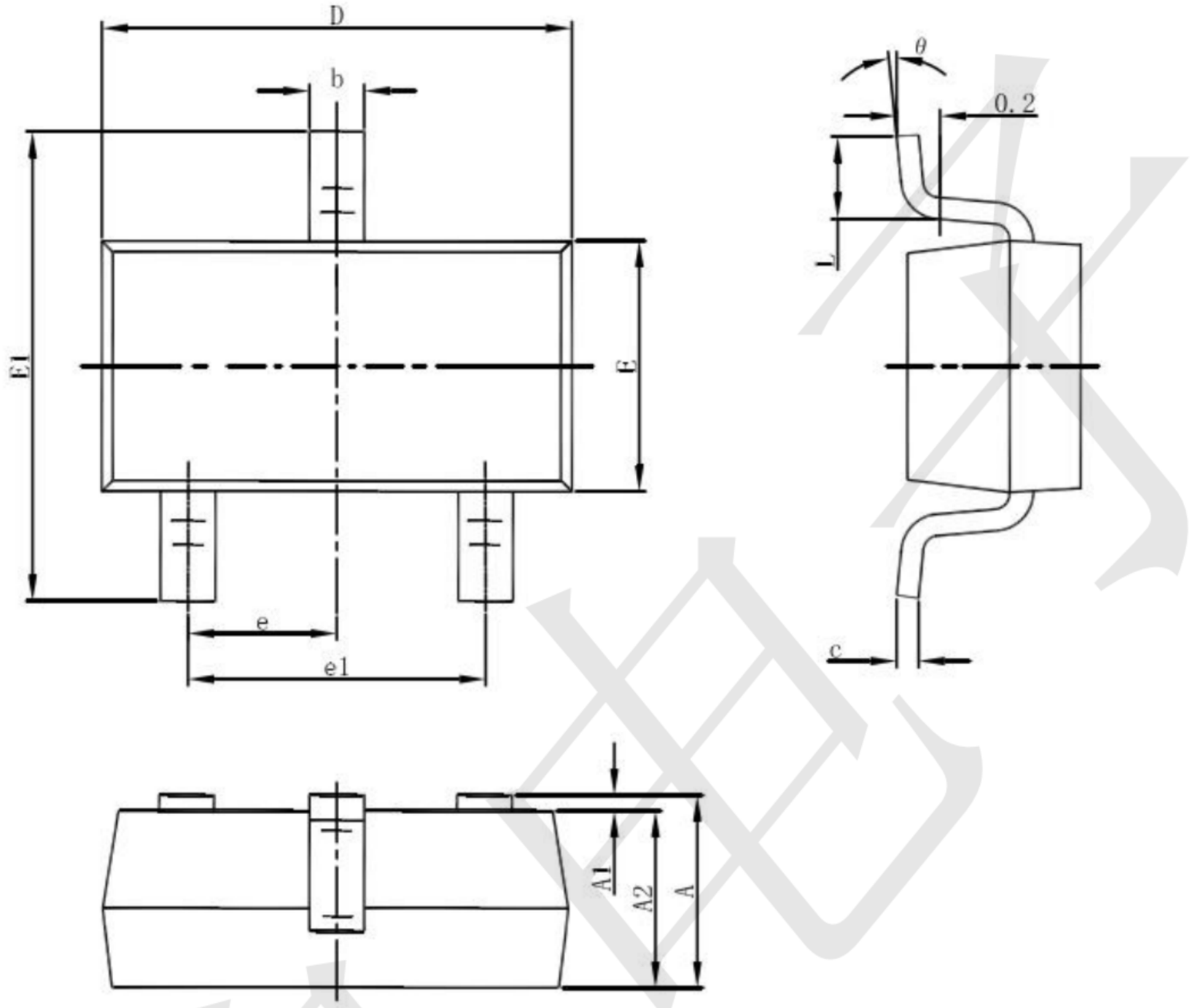
4-Pin DFN1X1-4 Outline Dimensions



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.35	-	0.40
A1	0.00	0.02	0.05
b	0.20	0.25	0.30
c	0.07	0.12	0.17
D	0.95	1.00	1.05
D2	0.38	0.48	0.58
e	0.65BSC		
E	0.95	1.00	1.05
E2	0.38	0.48	0.58
L	0.20	0.25	0.30
L1	0.27	0.32	0.37
L2	0.077REF		
L3	0.05REF		
L4	0.34REF		
L5	0.20REF		
R	0.05REF		
h	0.06REF		

Package information

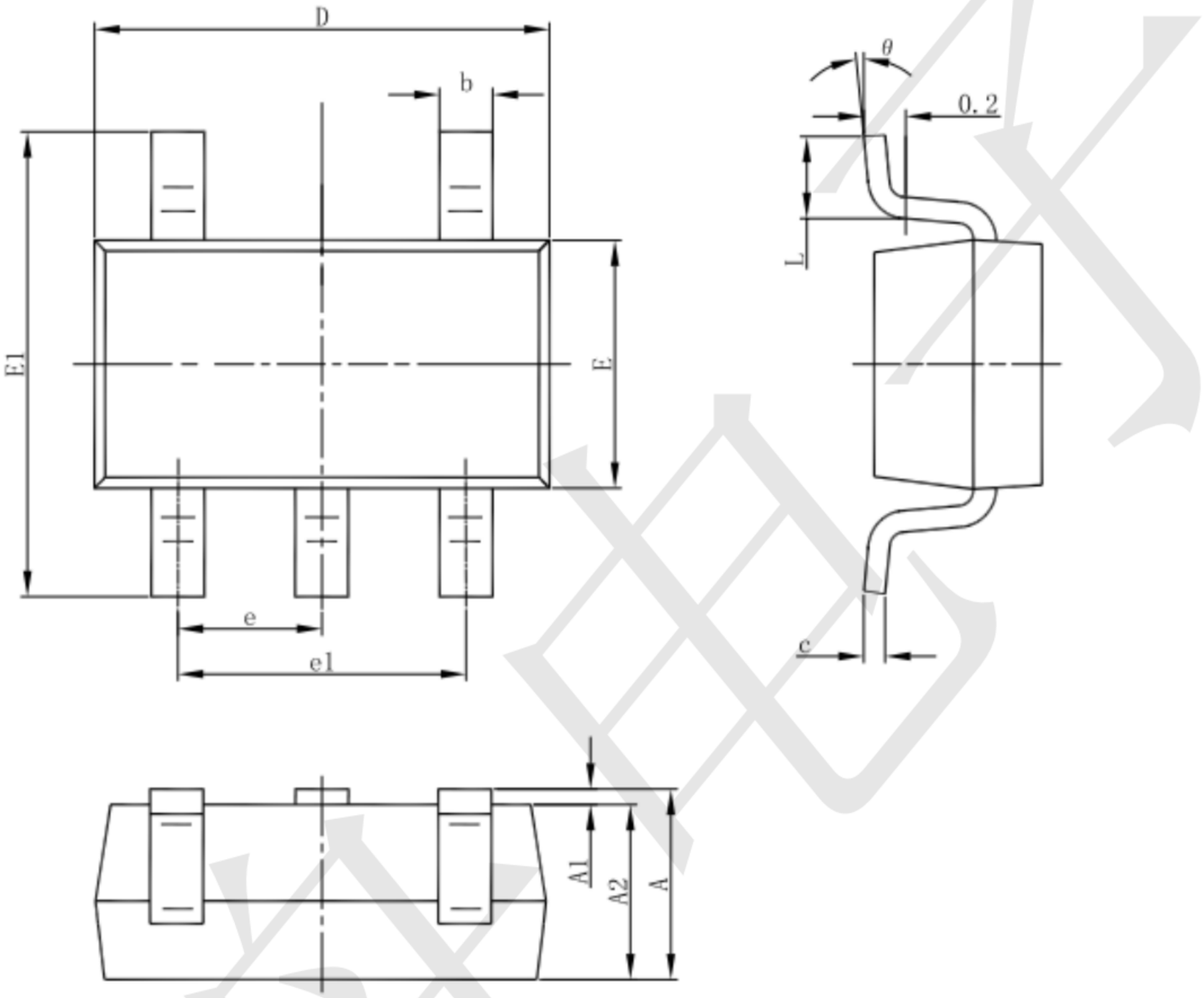
3-pin SOT23-3 Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

Package informantion

SOT23-5



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°