

Features

- 2μA Ground Current at no Load
- ±2% Output Accuracy
- 200mA Output Current
- Wide Operating Input Voltage Range: 2V to 60V
- Dropout Voltage: 0.65V at 100mA ($V_{OUT}=5V$)
- Support Fixed Output Voltage 1.8V, 3.3V, 5V, 9V, 12V
- Stable with Ceramic or Tantalum Capacitor
- Current Limit Protection
- Over-Temperature Protection
- SOT-23-5 SOT89-3 ,SOT23-3L ,DFN1X1-4 Package

Applications

- Portable, Battery Powered Equipment
- Low Power Microcontrollers
- Laptop, Palmtops and PDAs
- Wireless Communication Equipment
- Audio/Video Equipment
- Car Navigation Systems
- Industrial Controls
- Weighting Scales
- Meters
- Home Automation

General Description

The TP572C is a low-dropout (LDO) voltage regulators with enable function offering the benefits of high input voltage, low-dropout voltage, low-power consumption, and miniaturized packaging.

The features of low quiescent current as low as 2μA and zero disable current is ideal for powering the battery equipment to a longer service life. The TP572C

is stable with the ceramic output capacitor over its wide input range from 2V to 60V and the entire range of output load current.

Ordering Information

TP572CXXXX

PACKAGE TYPE

S3L: SOT-23-3L
S5: SOT23-5
GT3: SOT-89-3
VT3: SOT-89-3
UT3: SOT-89-3
D4: DFN1X1-4

OUTPUT VOLTAGE

12: 1.2V
15: 1.5V
18: 1.8V
30: 3.0V
33: 3.3V
50: 5.0V
A9: 9V
B2: 12V

Example:

TP572C33S5

→ 3.3V Version, in SOT23-5 Package & Tape & Reel Packing Type

TP572C33S3L

→ 3.3V Version, in SOT23-3L Package & Tape & Reel Packing Type

TP572C33GT3

→ 3.3V Version, in Green SOT-89-3 Package & Reel Packing Type

TP572C33VT3

→ 3.3V Version, in Green SOT-89-3 Package & Reel Packing Type

TP572C33UT3

→ 3.3V Version, in Green SOT-89-3 Package & Reel Packing Type

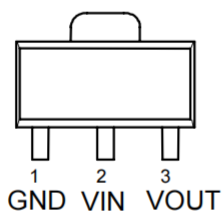
TP572C33D4

→ 3.3V Version, in Green DFN1X1-4 Package & Reel Packing Type

Pin Configuration

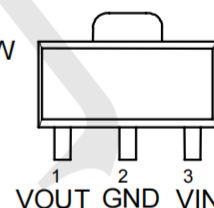
SOT-89 (GT3)

TOP VIEW
 1: GND
 2: VIN
 3: VOUT



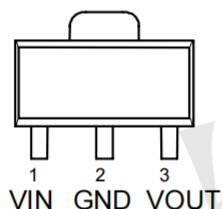
SOT-89 (UT3)

TOP VIEW
 1: VOUT
 2: GND
 3: VIN



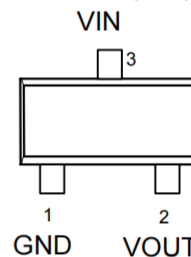
SOT-89 (VT3)

TOP VIEW
 1: VIN
 2: GND
 3: VOUT



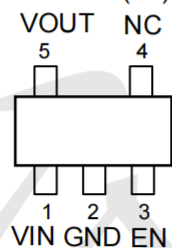
SOT-23 (S3L)

TOP VIEW
 1: GND
 2: VOUT
 3: VIN



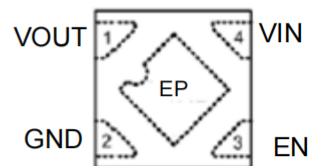
SOT23-5(S5)

TOP VIEW
 1: VIN
 2: GND
 3: EN
 4: NC
 5: VOUT



DFN1X1-4 (D4)

TOP VIEW
 1: VOUT
 2: GND
 3: EN
 4: VIN



Typical Application Circuit

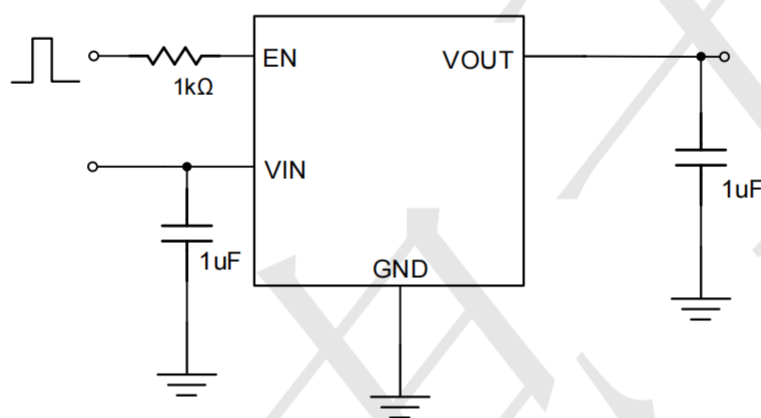


Figure 1: Application circuit of Fixed V_{OUT} LDO with enable function

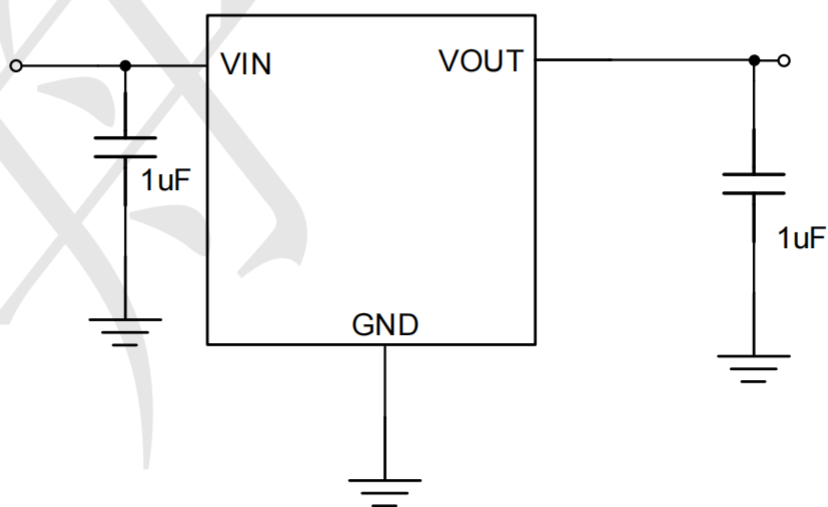
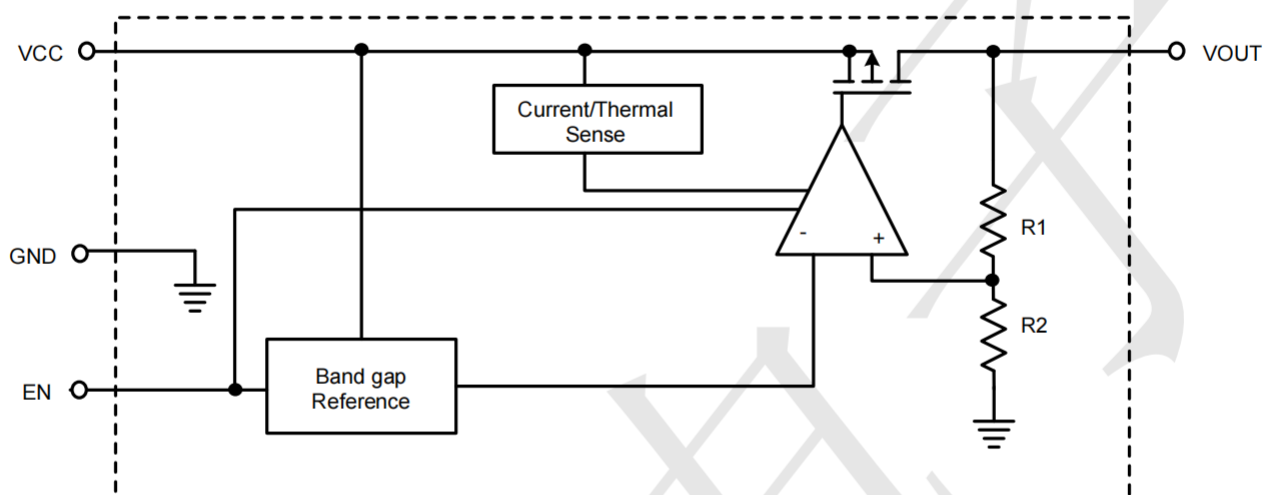


Figure 2: Application circuit of Fixed V_{OUT} LDO

BLOCK DIAGRAM



Absolute Maximum Ratings

VIN Pin to GND Pin Voltage	-0.3V to 60V	
VOUT Pin to GND Pin Voltage	TP572CA1, B2	-0.3V to 14V
	TP572C18 ,33,50 S5	-0.3V to 6.0V
VOUT Pin to VIN Pin Voltage	-40V to 0.3V	
Storage Temperature Range	-60°C~150°C	
Lead Temperature (Soldering, 10 sec)	260°C	
Junction Temperature	150°C	
Operating Ambient Temperature Range T _A	-40°C~85°C	
SOT-23-5, θ _{JA} -----	218.1°C/W	
SOT-23-5, θ _{JC} -----	28.5°C/W	
(Assume no Ambient Airflow, no Heatsink)		

Recommended Operating Conditions

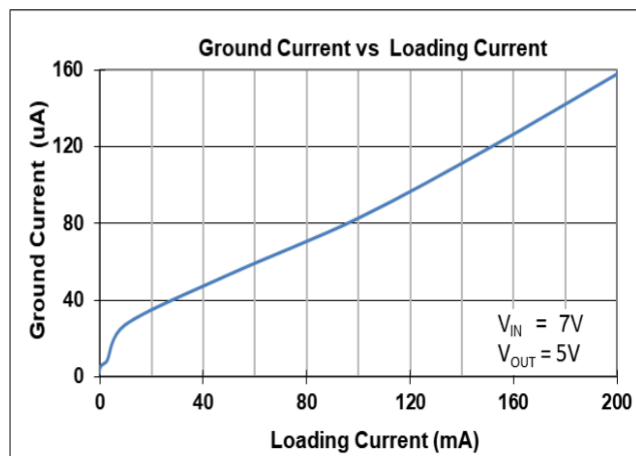
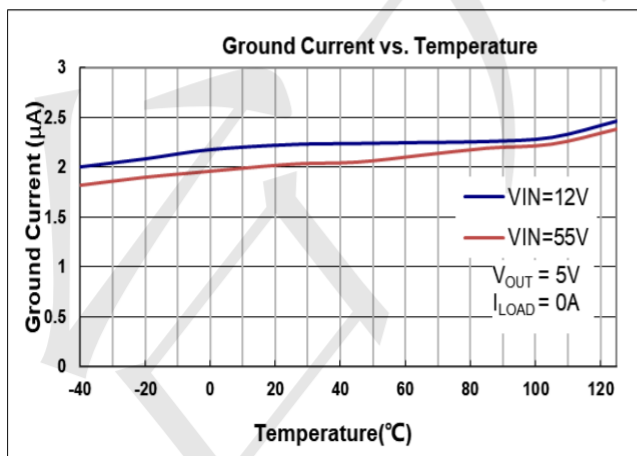
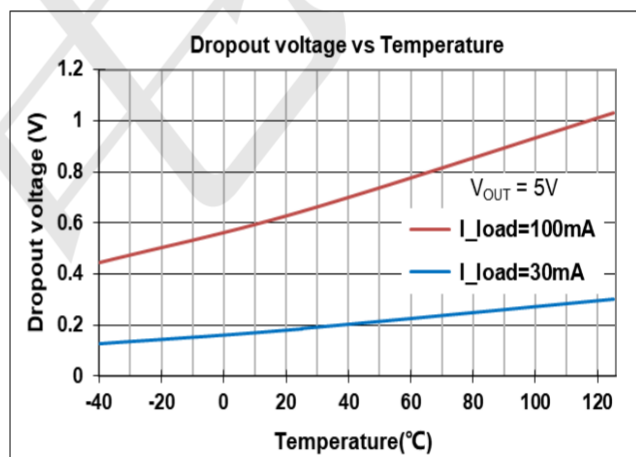
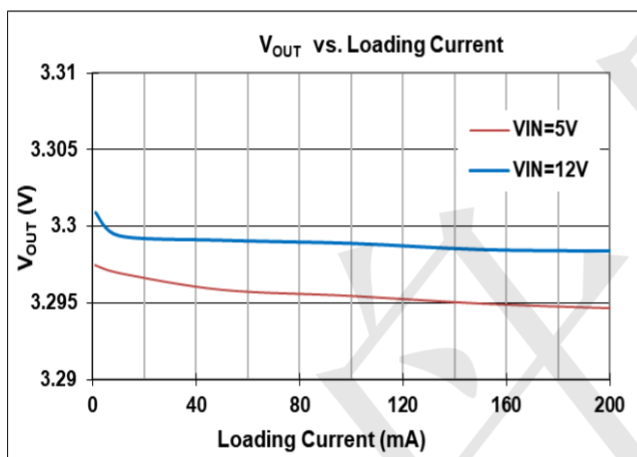
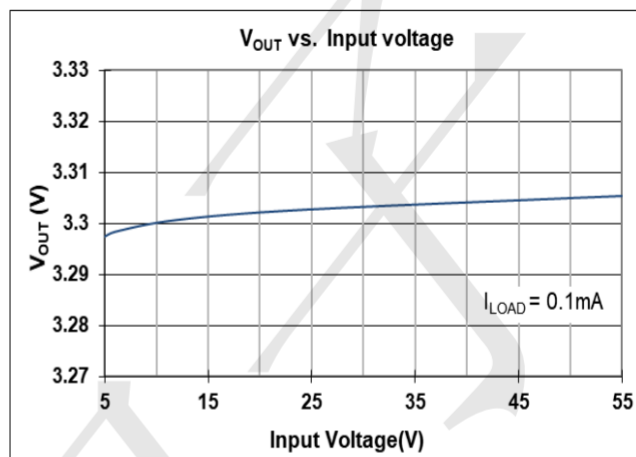
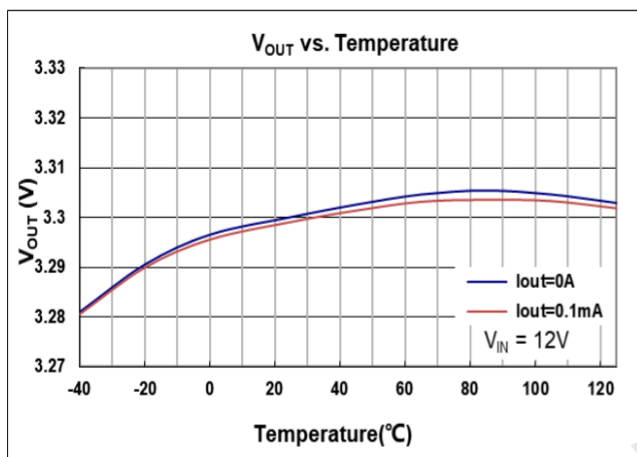
Supply Input Voltage	-3.5V to 60V
Junction Temperature Range	-40°C to 125°C
Ambient Temperature Range	-40°C to 85°C

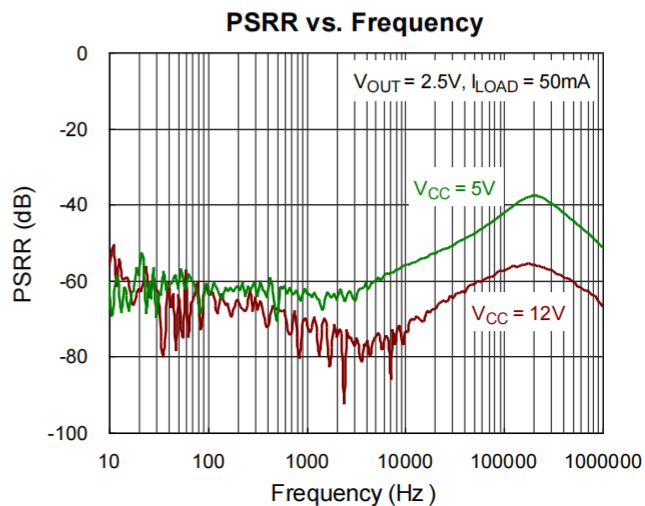
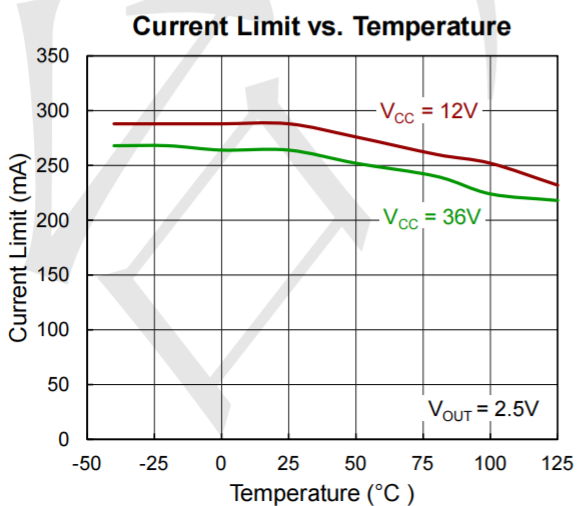
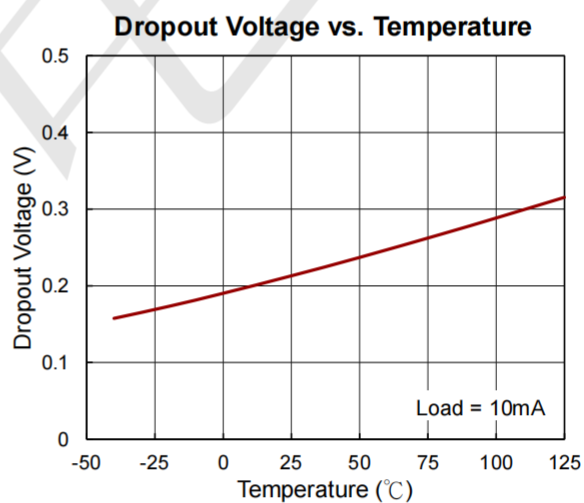
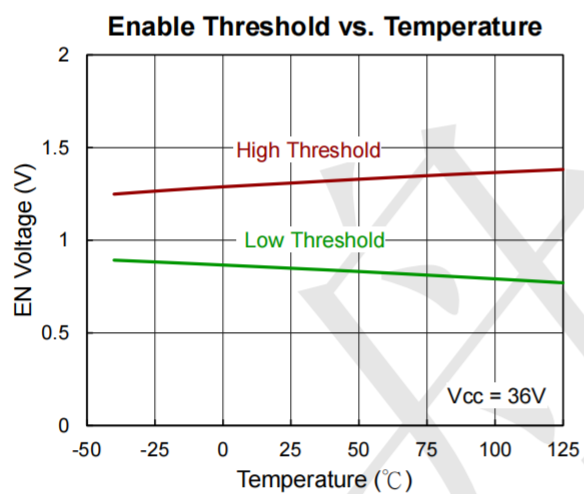
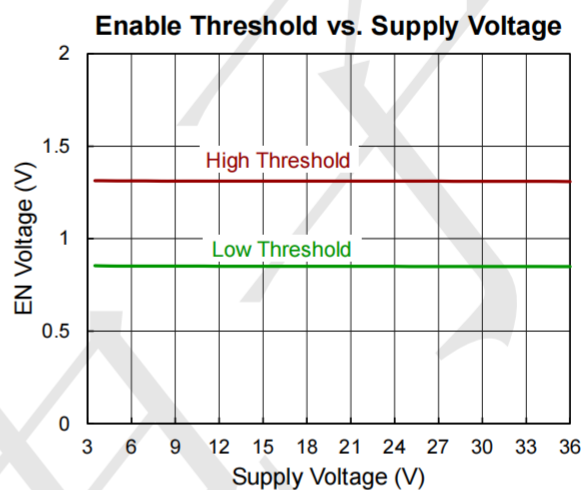
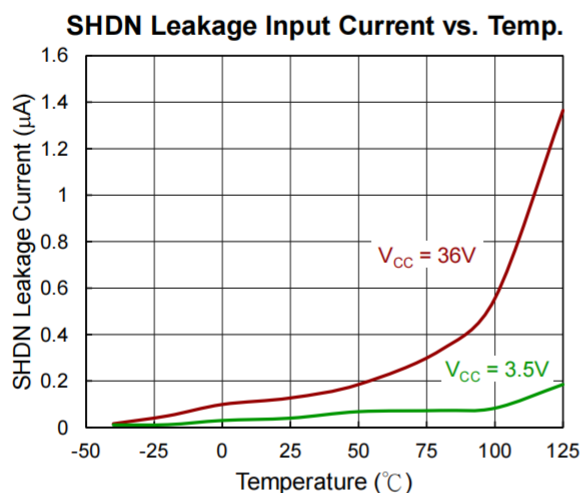
Electrical Characteristics

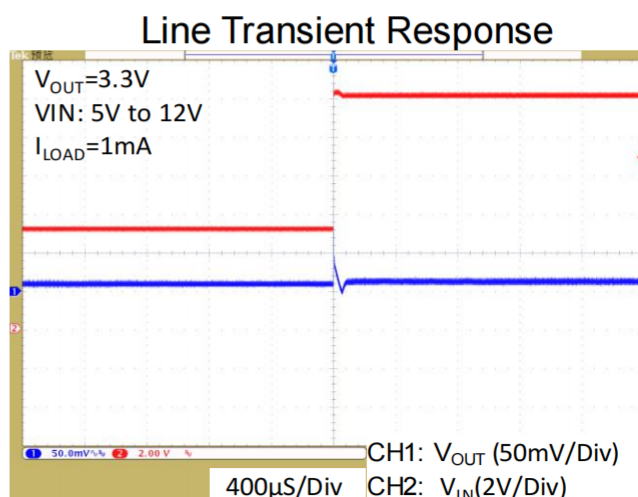
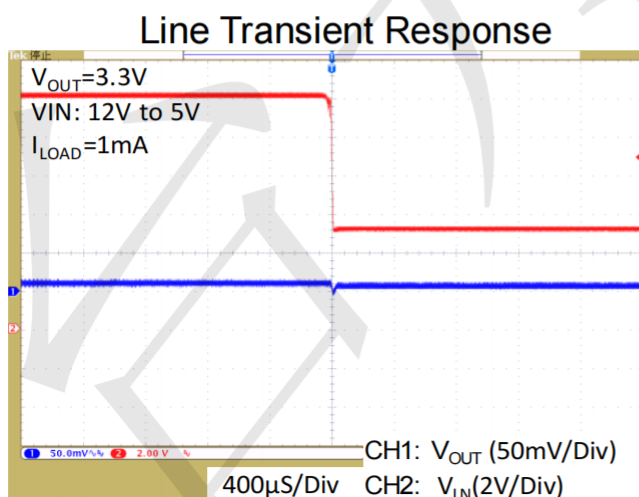
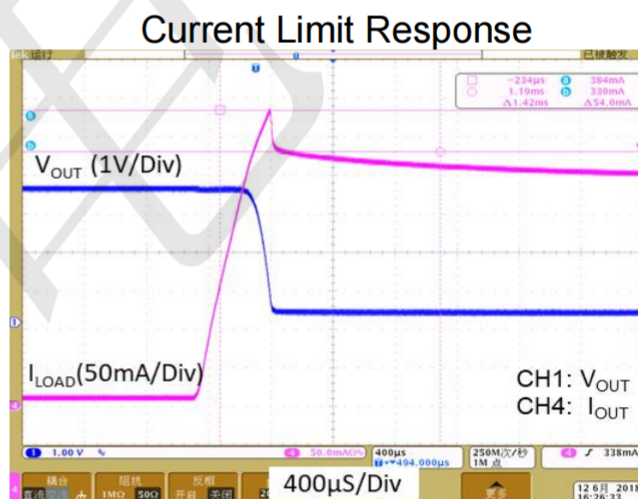
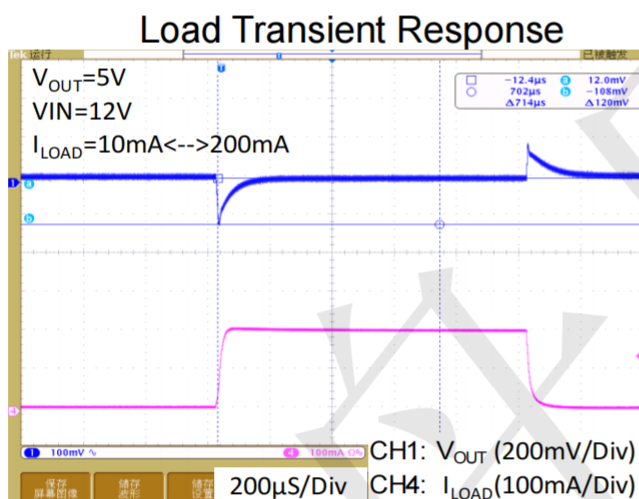
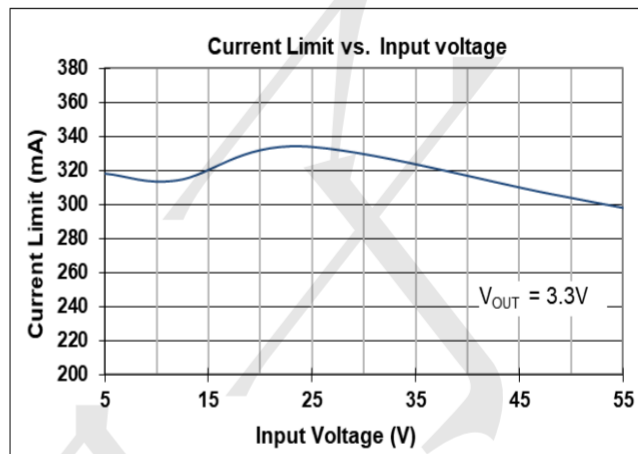
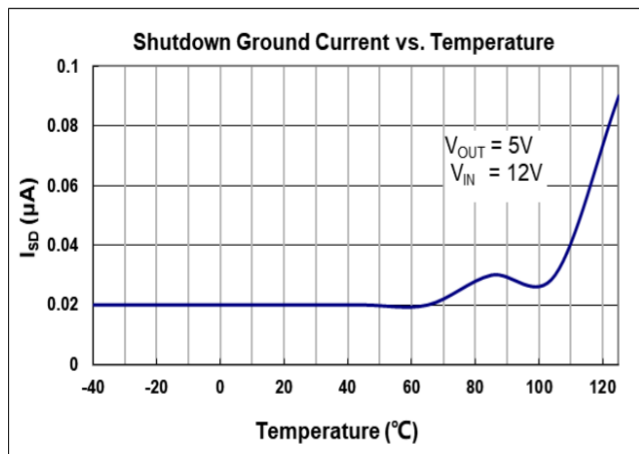
($V_{IN}=15V$, $V_{EN}=5V$, $T_A=25^{\circ}C$, unless otherwise specified) (Note 1)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{IN}		2	--	60	V
DC Output Voltage Accuracy		$I_{LOAD} = 0.1mA$	-2		2	%
Dropout Voltage ($I_{LOAD} = 100mA$)	V_{DROP}	$V_{OUT} \geq 5V$	--	0.66		V
	$V_{DROP_3.3V}$	$V_{OUT} = 3.3V$		0.75		
	$V_{DROP_1.8V}$	$V_{OUT} = 1.8V$		1		
Ground Current ($I_{LOAD} = 0mA$)	I_Q	$V_{OUT} \leq 5V$		2	3.5	μA
	I_{QH}	$5V < V_{OUT} \leq 12V$		5	8	
Shutdown Ground Current	I_{SD}	$V_{EN} = 0V$, $V_{OUT} = 0V$		0.01	0.5	μA
V_{OUT} Shutdown Leakage Current	I_{LEAK}			0.01	0.5	μA
Enable Threshold Voltage	V_{IH}	EN Rising			2	V
	V_{IL}	EN Falling	0.6			
EN Input Current	I_{EN}	$V_{EN} = 36V$		10		nA
Line Regulation	$\Delta LINE$	$I_{LOAD} = 1mA$, $5 \leq V_{IN} \leq 36V$	--	0.3		%
Load Regulation	$\Delta LOAD$	$1mA \leq I_{LOAD} \leq 0.2A$		0.1		%
Output Current Limit	I_{LIM}	$V_{OUT} = 0$	200	300		mA
Power Supply Rejection Ratio	PSRR	$V_{OUT} = 5V$, $I_{LOAD} = 1mA$, $V_{IN} = 12V$, $f = 100Hz$		70		dB
Thermal Shutdown Temperature	T_{SD}	$I_{LOAD} = 10mA$	--	160	--	$^{\circ}C$
Thermal Shutdown Hysteresis	ΔT_{SD}			15		$^{\circ}C$

Typical Operating Characteristics









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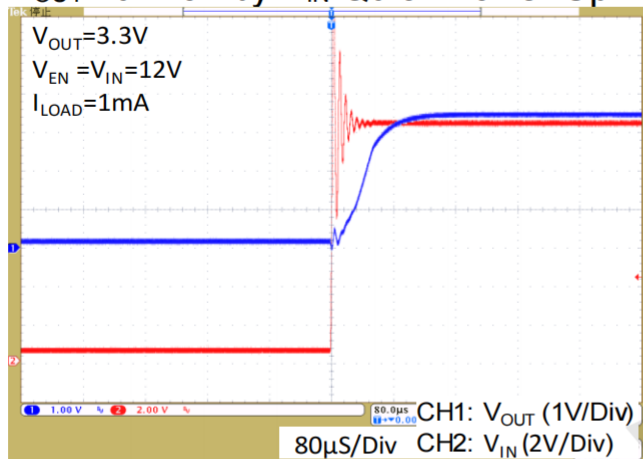
—台丹电子—

TP572C Series

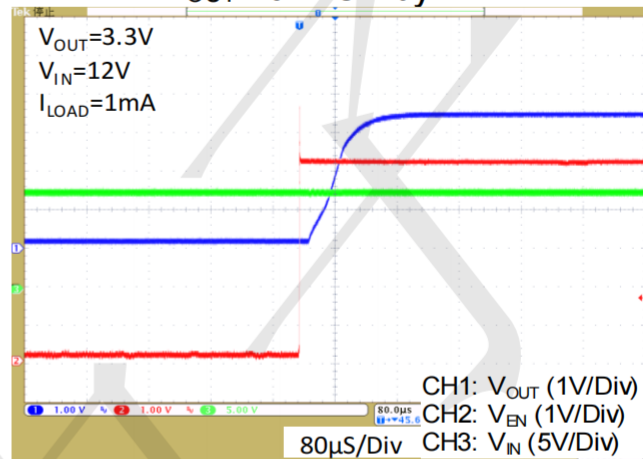
60V,200mA,2uA, Higt PSRR Voltage Regulator

www.sot23.com.tw

V_{OUT} Turn on by V_{IN} Quick Power Up



V_{OUT} Turn On by EN





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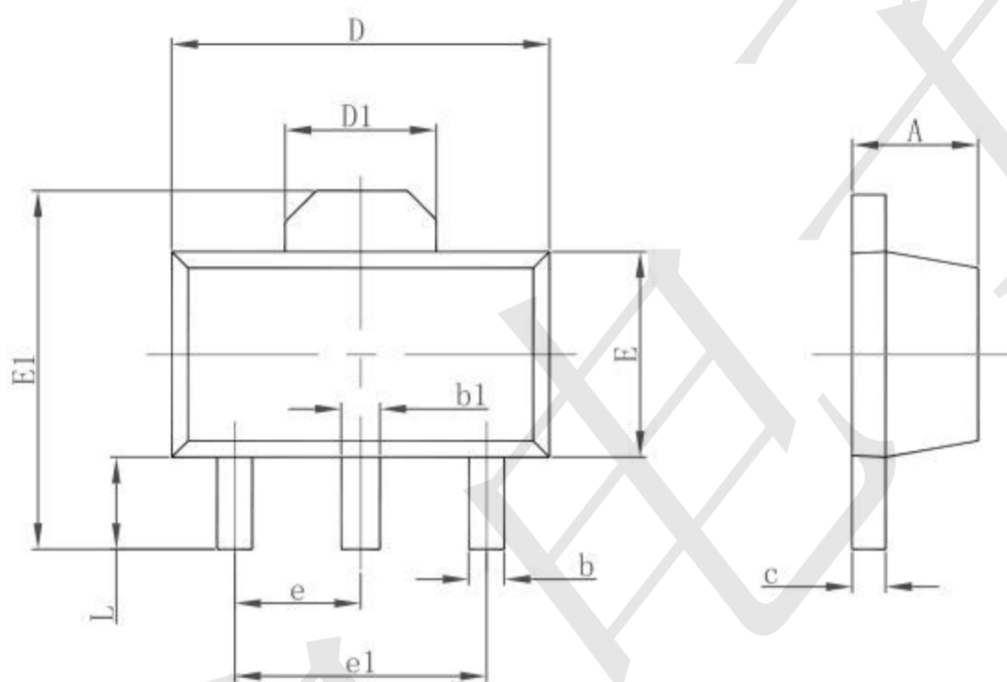
TP572C Series

60V,200mA,2uA, Higt PSRR Voltage Regulator

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Package information

SOT89-3



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047



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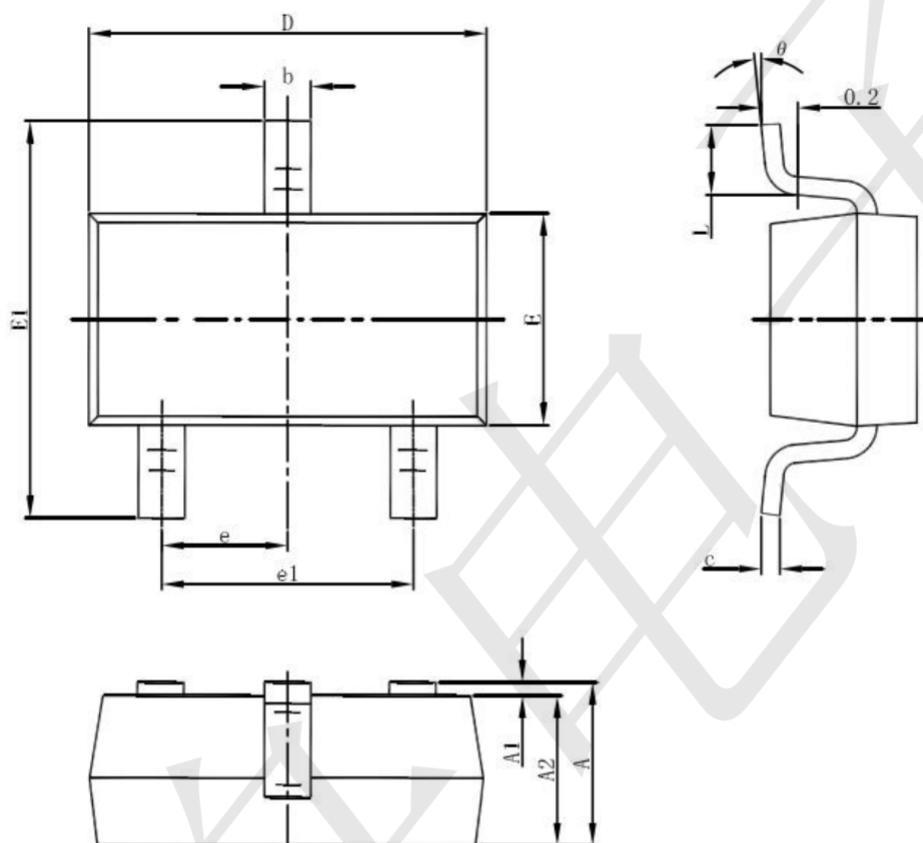
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TP572C Series

60V,200mA,2uA, Higt PSRR Voltage Regulator

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3-pin SOT23-3L 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°



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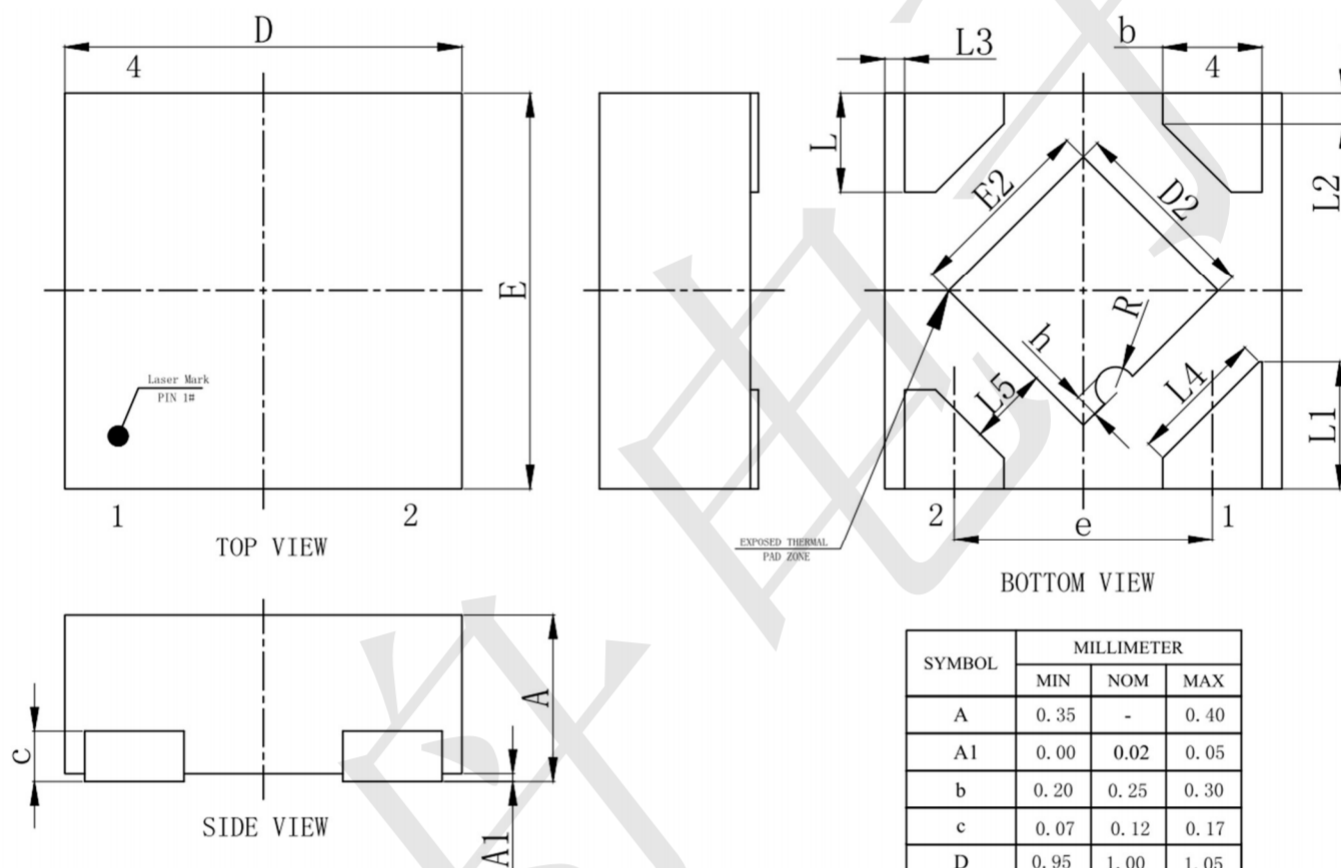
TP572C Series

60V,200mA,2uA, Higt PSRR Voltage Regulator

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Package information

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		



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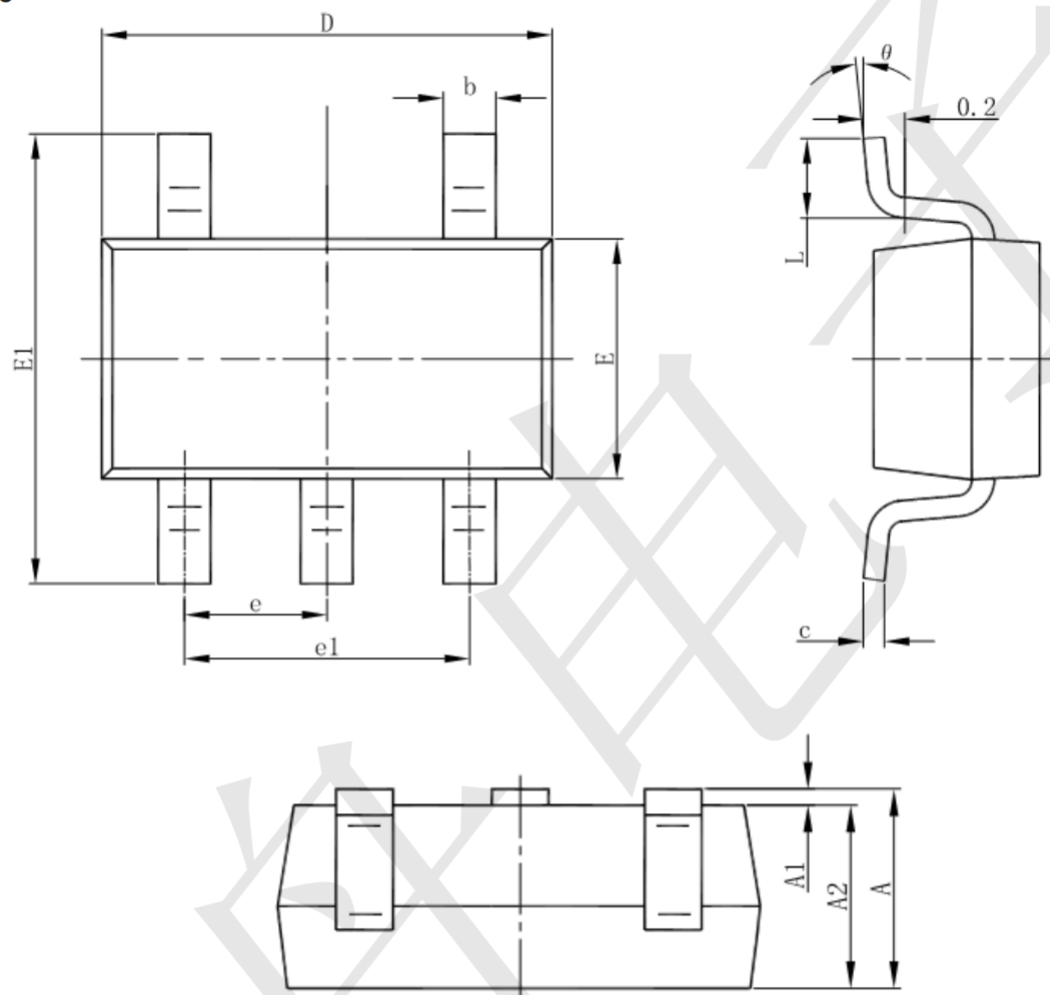
TP572C Series

60V,200mA,2uA, Higt PSRR Voltage Regulator

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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°

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