

## General Description

The LTP3567 is a 36 V, low power, high accuracy LDO regular. The ultralow 1.3  $\mu\text{A}$  power consumption makes it ideal for most high voltage power-saving systems. The maximum operating voltage can be as high as 36 V. The output accuracy is as excellent as  $\pm 2\%$ .

The other features include low dropout voltage, current limiting protection, and thermal shutdown protection. The LTP3567 is available in the SOT23-5 package.

## Features

- Maximum Operating Voltage: 36 V
- Output Current: 100 mA
- Output Voltage: 1.8 V, 3.3 V and 5.0 V
- Output Accuracy:  $\pm 2\%$
- Ultralow Power Consumption: 1.3  $\mu\text{A}$
- < 0.1  $\mu\text{A}$  Standby Current When Shutdown
- Low Temperature Coefficient
- Current Limiting, Thermal Shutdown
- Package: SOT23-5

## Applications

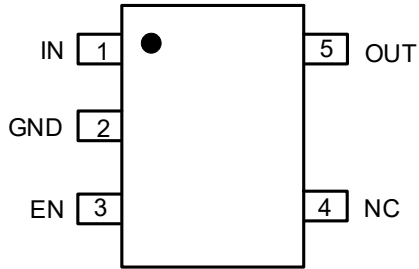
- Battery Supplied Systems
- Telecom Systems
- Audio & Video Devices

## Order Information

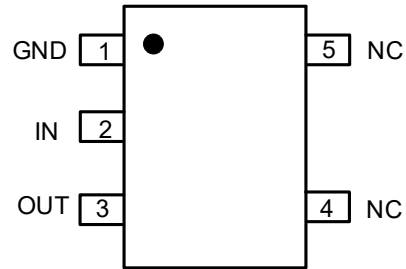
Model	Package	Ordering Number <sup>Note1</sup>	Packing Option
LTP3567	SOT23-5	LTP3567-xxNXT5	Tape and Reel, 3000
	SOT23-5	LTP3567-xxRXT5	Tape and Reel, 3000

Note: xx stands for output voltage, e.g. if xx = 18, the output voltage is 1.8V; if xx = 30, the output voltage is 3.0V.

## Pin Configuration



**SOT23-5**

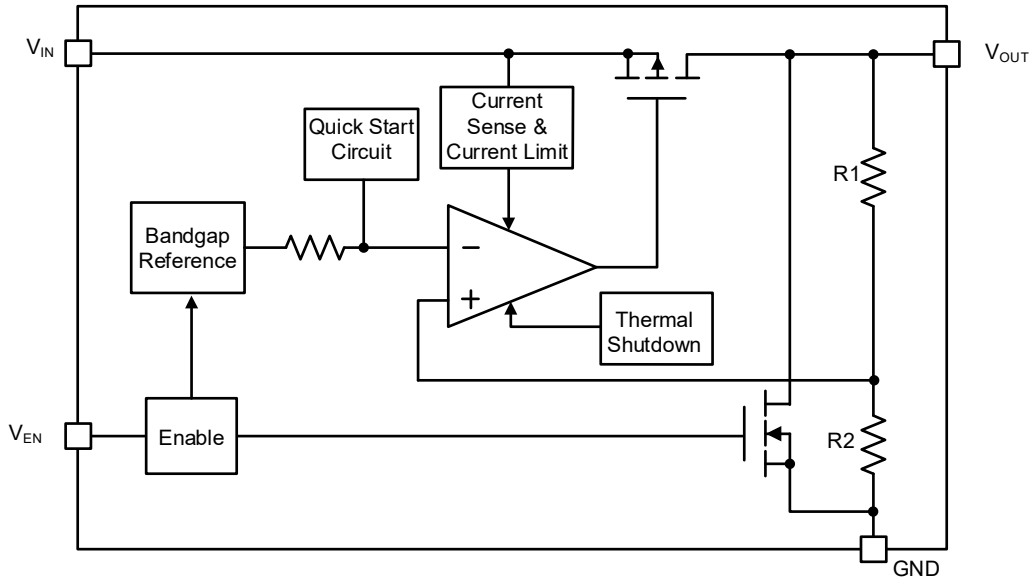


**SOT23-5N**

## Pin Function

Package		Symbol	Function
SOT23-5	SOT23-5N		
2	1	GND	Ground.
5	2	OUT	Output pin.
1	3	IN	Supply input pin.
3		EN	Enable control input.
4	4,5	NC	No connection.

## Block Diagram



## Recommended Operating Conditions

Parameter	Rating	Unit
Operating Temperature Range	-40 to +85	°C

## Absolute Maximum Ratings

Parameter	Rating	Unit
Supply Voltage	-0.3 to 40	V
EN pin to GND Voltage	-0.3 to 40	V
V <sub>OUT</sub> pin to GND Voltage	-0.3 to 6	V
V <sub>OUT</sub> pin to V <sub>IN</sub> Voltage	-46 to 0.3	V
Thermal Resistance (Junction to Ambient)	SOT23-5      250	°C/W
Junction Temperature Range	150	°C
Storage Temperature Range	-65 to 150	°C
Lead Temperature (Soldering)	260 (10 s)	°C

### NOTE:

Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## Caution

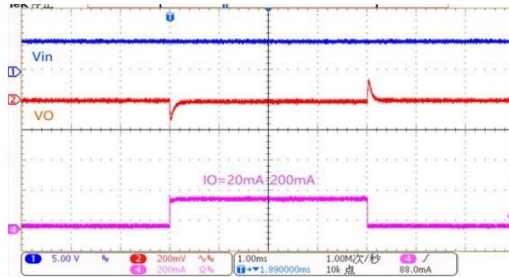
This integrated circuit can be damaged by ESD if you don't pay attention to ESD protection. LINEARIN recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications. LINEARIN reserves the right to make any change in circuit design, specification or other related things if necessary without notice at any time. Please contact LINEARIN sales office to get the latest datasheet.

## Electrical Characteristics

( $V_{IN} = V_{OUT} + 1\text{ V}$ ,  $T_a = 25^\circ\text{C}$ ,  $C_{IN} = 1\text{ }\mu\text{F}$ ,  $C_{OUT} = 10\text{ }\mu\text{F}$  unless otherwise noted)

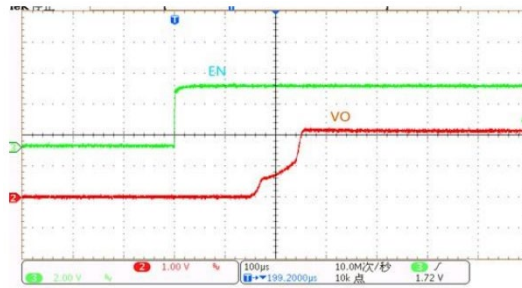
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage	$V_{IN}$		2.5	40		V
Output Voltage	$V_{OUT}$	$I_{OUT} = 40\text{ mA}$	-2%		+2%	V
Maxim Output Current	$I_{OMAX}$		100			mA
Load Regulation	$Reg_{LOAD}$	$1\text{ mA} < I_{OUT} < 60\text{ mA}$		25	50	mV
		$I_{OUT} = 40\text{ mA}$ , $V_{OUT} = 5\text{ V}$		260		mV
Dropout Voltage	$V_{DROP}$	$I_{OUT} = 100\text{ mA}$ , $V_{OUT} = 1.8\text{ V}$		700		mV
Quiescent Current	$I_Q$	$I_{OUT} = 0\text{ mA}$		1.3	2	$\mu\text{A}$
Line Regulation	$Reg_{LINE}$	$V_{IN} = V_{OUT} + 1\text{ V to } 24\text{ V}$ , $I_{OUT} = 40\text{ mA}$		0.2	0.3	%/V
Temperature Coefficient	TC	$I_{OUT} = 40\text{ mA}$ , $-40^\circ\text{C to } +85^\circ\text{C}$		$\pm 0.7$		$\text{mV}/^\circ\text{C}$
Thermal Shutdown	$T_{SD}$	Shutdown, Temp increasing		180		$^\circ\text{C}$
Thermal Hysteresis	$T_{HYST}$			20		$^\circ\text{C}$
EN Input Voltage High	$V_{ENH}$		1.5			V
EN Input Voltage Low	$V_{ENL}$				0.8	V

## Typical Performance Characteristics



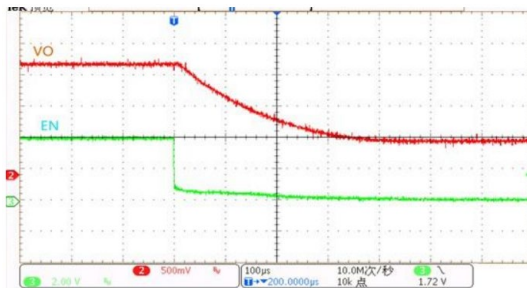
$V_{OUT} = 1.8V$ ,  $C_{IN} = 10\mu F$ ,  $C_{OUT} = 10\mu F$

Fig1. Load-Transient Response



$V_{OUT} = 1.8V$ ,  $C_{IN} = 1\mu F$ ,  $C_{OUT} = 1\mu F$

Fig2. Start up Response



$V_{OUT} = 1.8V$ ,  $C_{IN} = 1\mu F$ ,  $C_{OUT} = 1\mu F$

Fig3. Entering Shutdown

## Typical Performance Characteristics

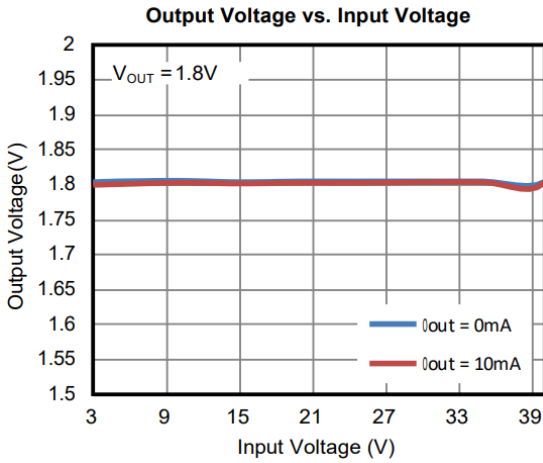


Fig4. Output Voltage VS Input Voltage

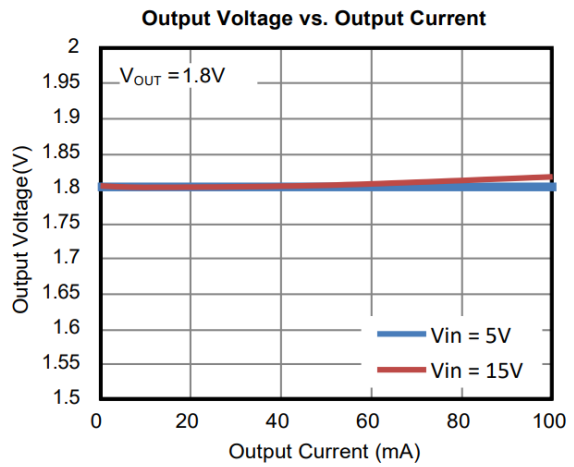


Fig5. Output Voltage VS Output Current

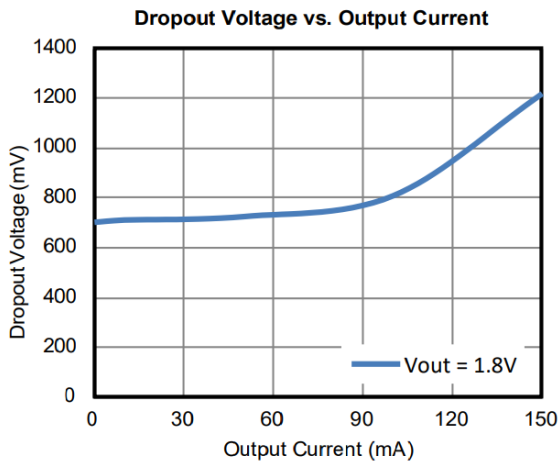


Fig6. Dropout Voltage VS Output Current

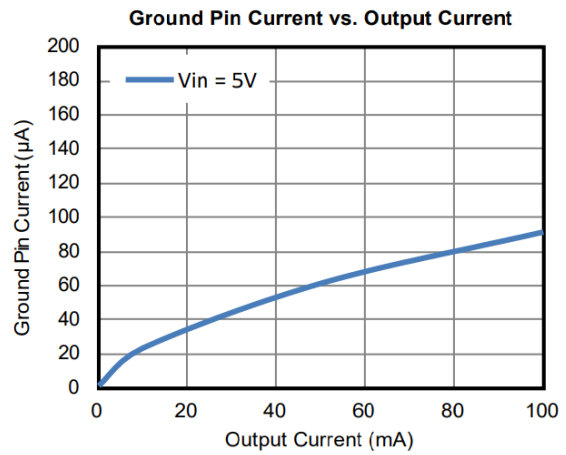
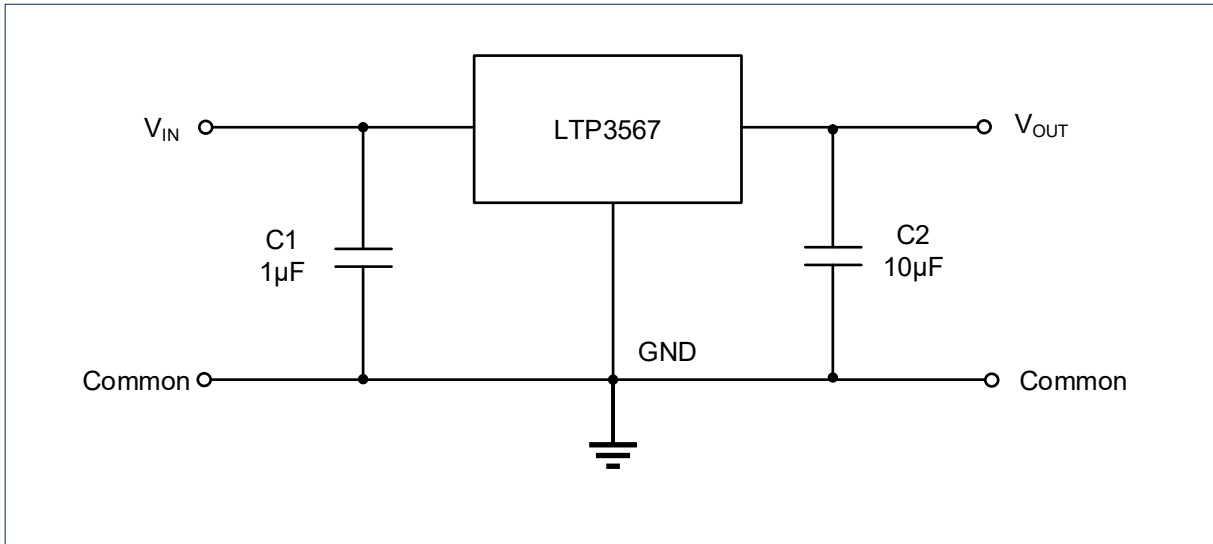


Fig7. Ground Pin Current VS Output Current

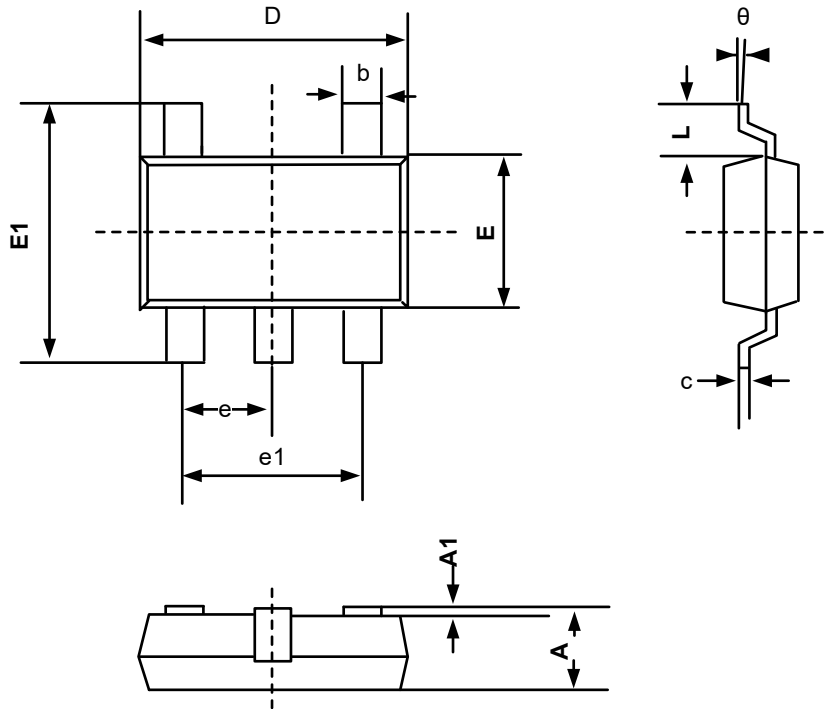
## Application Circuits





## Package Dimension

SOT23-5



Unit: mm

Symbol	Dimensions In Millimeters	
	MIN	MAX
A	1.000	1.200
A1		1.250
b	0.330	0.410
c	0.150	0.190
D	2.820	3.020
E	1.500	1.700
E1	2.600	3.000
e	0.950BSC	
e1	1.900BSC	
L	0.600REF	
θ	0°	8°