General Description

The LTP3567 is a 36 V, low power, high accuracy LDO linear regulator. The ultralow 1.3 µA 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 ±2% maximum.

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

Features

- Maximum Operating Voltage: 36 V
- Output Current: 100mA
- Output Voltage Options: 1.8 V, 3.3 V, and 5.0 V
- Output Accuracy: ±2%
- Ultralow Power Consumption: 1.3 µA Typically
- < 0.1 µA Standby Current When Shutdown
- Low Temperature Coefficient
- Current Limiting and Thermal Shutdown
- Package: SOT23-5L

Applications

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

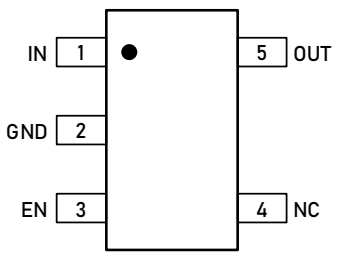
Order Information

Model	Package	Ordering Number Note1	Packing Option
LTP3567	SOT23-5L	LTP3567-xxNXT5	Tape and Reel, 3000
	SOT23-5L	LTP3567-xxRXT5	Tape and Reel, 3000

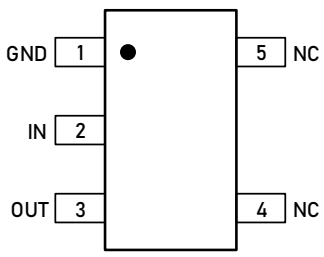
Note: xx stands for output voltage option, e.g. if xx = 18, the output voltage is 1.8V; if xx = 30, the output voltage is 3.0V.

Pin Configuration

LTP3567-N
SOT23-5L



LTP3567-R
SOT23-5L



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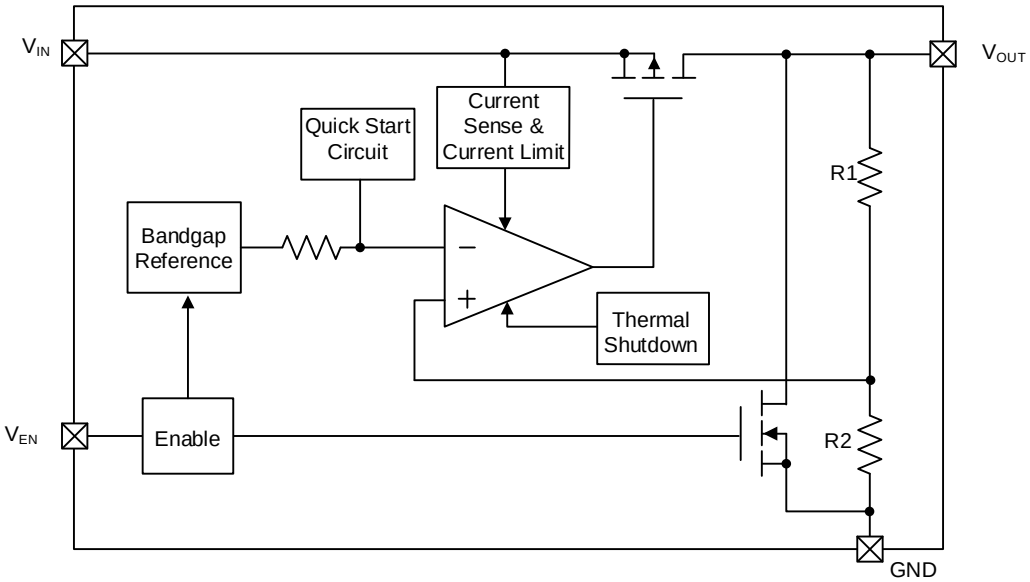
Block Diagram



Pin Function

Pin No. (SOT23-5L)		Pin Name	Pin Function
LTP3567-N	LTP3567-R		
2	1	GND	Ground.
5	3	OUT	Output pin.
1	2	IN	Supply voltage input pin.
3		EN	Enable control input.
4	4, 5	NC	No connection.

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Absolute Maximum Ratings

Parameter	Rating		Unit
Supply Voltage	-0.3 to 40		V
EN Pin to GND Pin Voltage	-0.3 to 40		V
OUT Pin to GND Pin Voltage	-0.3 to 6		V
OUT Pin to IN Pin Voltage	-46 to 0.3		V
Thermal Resistance (Junction to Ambient)	250	(SOT23-5L)	°C/W
Operating Junction Temperature	125		°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.

Recommended Operating Conditions

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

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Electrical Characteristics

(V_{IN}= V_{OUT}+2V, T_a= 25°C, C_{IN}=1µF, C_{OUT}=10µF 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} = 40mA	-2%		+2%	V
Maximum Output Current	I_{O_MAX}	V_{IN} > V_{OUT} + 2V	100			mA
Load Regulation	ΔV_{OUT}	1 mA < I_{OUT} < 60 mA		25	50	mV
Dropout Voltage	V_{DO}	I_{OUT} = 40 mA, V_{OUT} = 5 V		260		mV
		I_{OUT} = 100 mA, V_{OUT} = 1.8 V		700		mV
Quiescent Current	I_Q	I_{OUT} = 0 mA		1.3	2	µA
Line Regulation	$\Delta V_{O(\Delta VI)}$	V_{IN} = V_{OUT} +1 V to 24 V, I_{OUT} = 40 mA		0.2	0.3	%/V
Temperature Coefficient	TC	I_{OUT} = 40 mA, -40°C~ +85°C		±0.7		mV/°C
Thermal Shutdown	T_{SD}	Shutdown, Temp increasing		180		°C
Thermal Hysteresis	T_{HYST}			20		°C
EN Input Voltage High	V_{ENH}		1.5			V
EN Input Voltage Low	V_{ENL}				0.8	V

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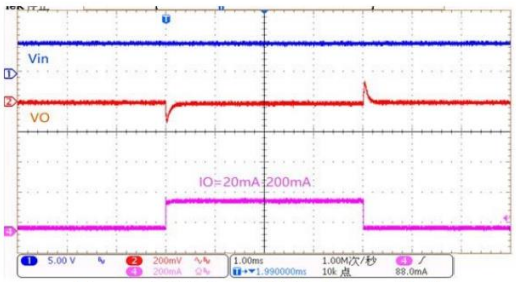
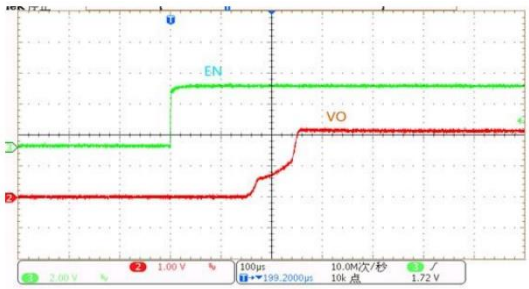
Typical Performance Characteristics



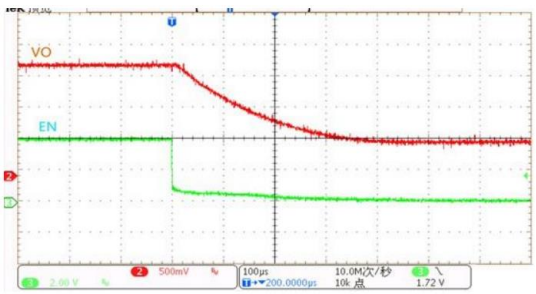
V_{OUT} = 1.8V, C_{IN} = 10µF, C_{OUT} = 10µF

Fig1. Load-Transient Response



V_{OUT} = 1.8V, C_{IN} = 1µF, C_{OUT} = 1µF

Fig2. Start up Response



V_{OUT} = 1.8V, C_{IN} = 1µF, C_{OUT} = 1µF

Fig3.Entering Shutdown

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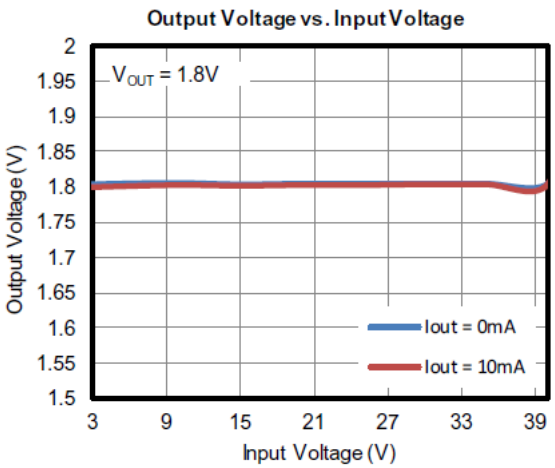

Fig4. Output Voltage VS Input Voltage

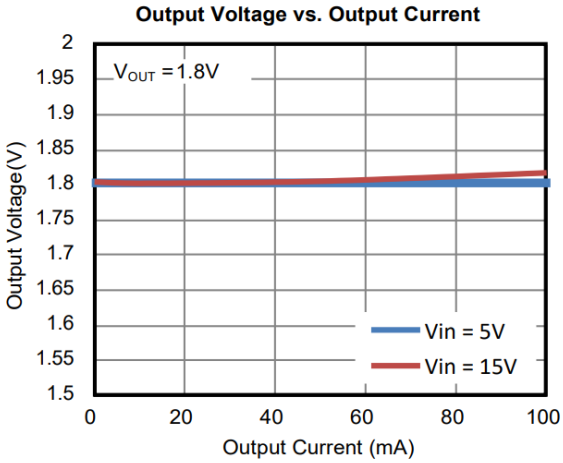

Fig5. Output Voltage VS Output Current

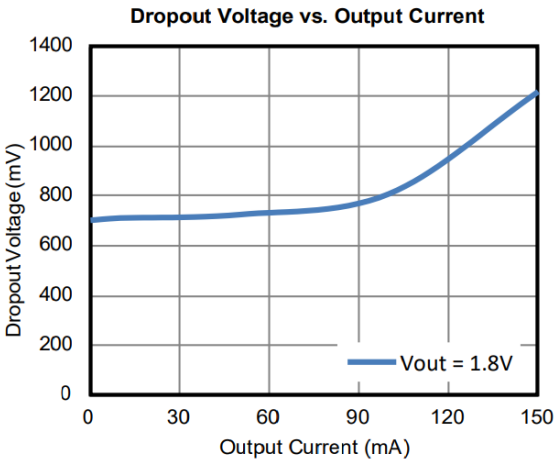

Fig6. Dropout Voltage VS Output Current

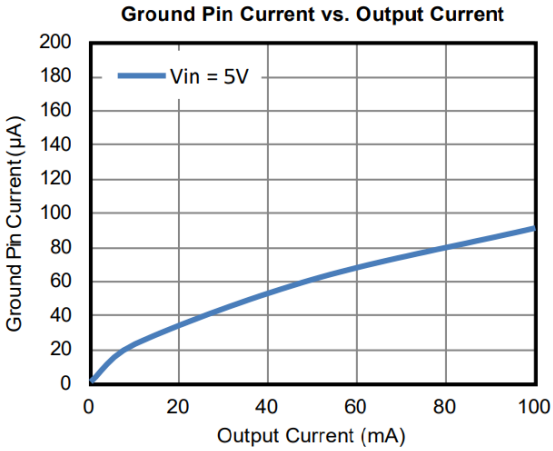

Fig7. Ground Pin Current VS Output Current

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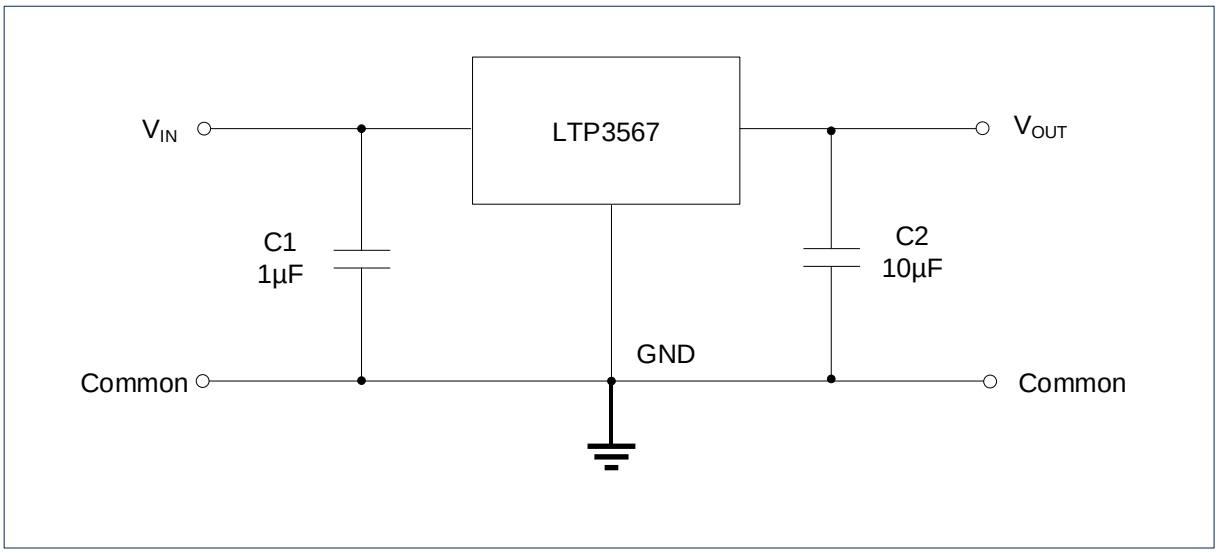
Application Circuits



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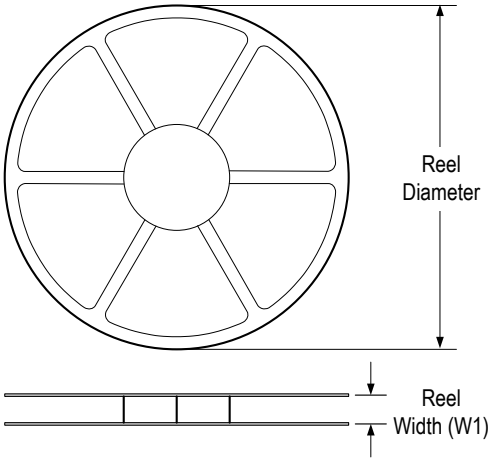
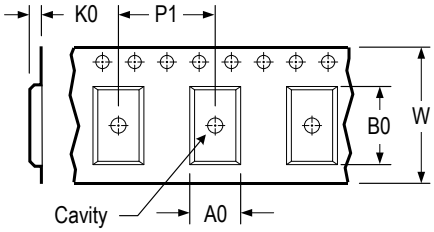
Tape and Reel Information

REEL DIMENSIONS

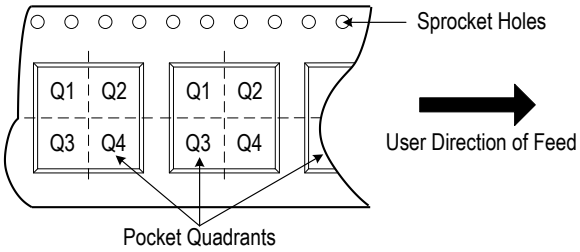


TAPE DIMENSIONS



A0	Dimension designed to accommodate the component width
B0	Dimension designed to accommodate the component length
K0	Dimension designed to accommodate the component thickness
W	Overall width of the carrier tape
P1	Pitch between successive cavity centers

QUADRANT ASSIGNMENTS FOR PIN 1 ORIETATION IN TAPE



* All dimensions are nominal

Device	Package Type	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin 1 Quadrant
LTP3567-xxNXT5	SOT23	5	3 000	178	9.0	3.3	3.2	1.5	4.0	8.0	Q3
LTP3567-xxRXT5	SOT23	5	3 000	178	9.0	3.3	3.2	1.5	4.0	8.0	Q3

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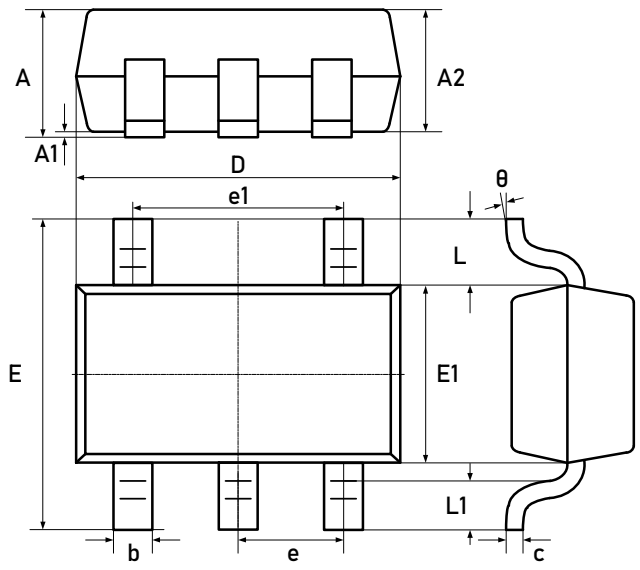
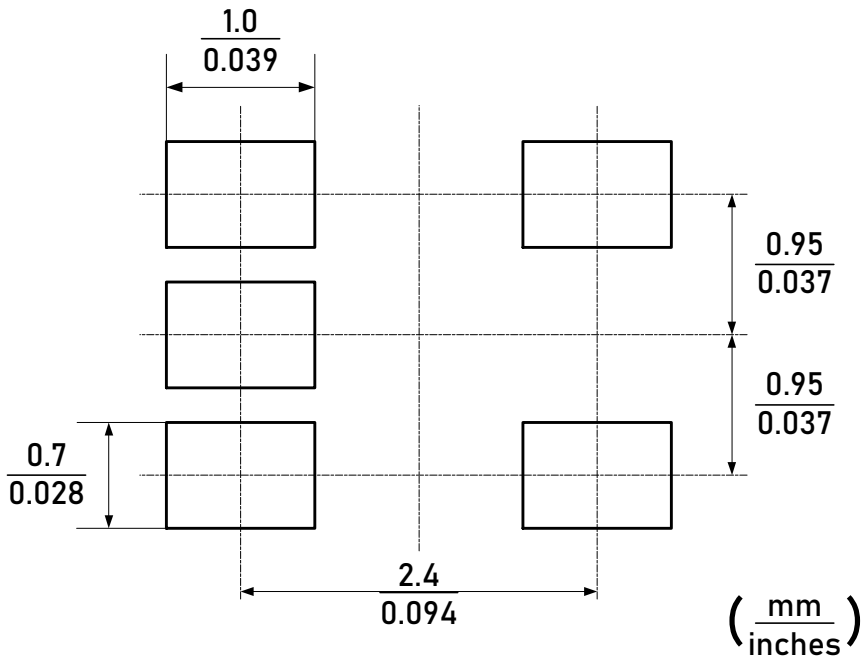
Package Outlines

DIMENSIONS, SOT23-5L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	-	1.25	-	0.049
A1	0.04	0.10	0.002	0.004
A2	1.00	1.20	0.039	0.047
b	0.33	0.41	0.013	0.016
c	0.15	0.19	0.006	0.007
D	2.820	3.02	0.111	0.119
E1	1.50	1.70	0.059	0.067
E	2.60	3.00	0.102	0.118
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.60 REF		0.024 REF	
L1	0.30	0.60	0.012	0.024
θ	0°	8°	0°	8°

RECOMMENDED SOLDERING FOOTPRINT, SOT23-5L



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