

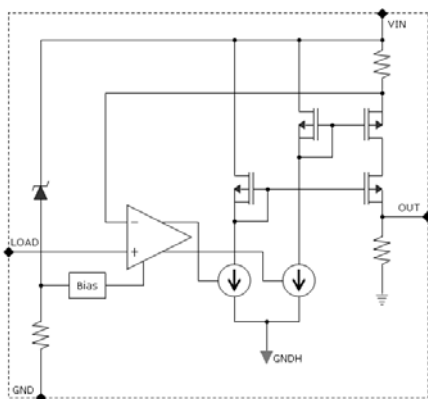
Features

- Wide working voltage range : 10V to 430V
- Fast rise/fall time: 1.2/2.0uS
- Voltage Gain: 1±1 (typical)
- Quiescent current: 80uA (typically)
- Output Voltage: 500mV (maximum)

Applications

- SMPS current monitor
- Battery current monitor

Equivalent Block Diagram



General Description

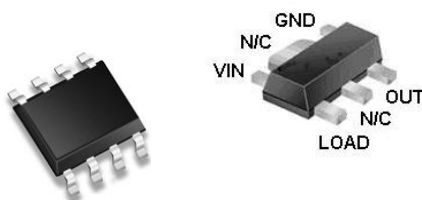
The LD7501 is a high side current monitor producing an output voltage measured from high side resistor with voltage gain of one. It provides a wide working voltage range from 10V to 430V. Its features include a 5-terminal fixed output voltage version in SOT-89-5 and SOP-8 packages.

Ordering Information

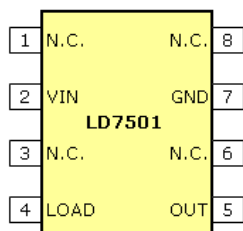
Part No.	Package	Packing Options		
		Bag(BG)	Tube (TU)	Tape & Reel(TR)
LD7501	SOP-8	-	LD7501S1-TU	-
	SOT-89-5	LD7501L6-BG	-	LD7501L6-TR

- Package material default is "Green" package.

Package Pin out



Note: please do not connected any wire to N/C pins



Product Marking

LD8888 SSSS...	<ul style="list-style-type: none"> ◇ Line 1 – "LD" is a fixed character <li style="padding-left: 20px;">8888: product name ◇ Line 2 – SSSS...: lot number
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Absolute Maximum Ratings

Parameter	Value	Units
V_{IN}, V_{LOAD} to GND	-0.5 ~ 430	V
V_{OUT} to GND	-0.5 ~ +10	V
$V_{SENSE} = V_{IN} - V_{LOAD}$	-0.3 ~ +5	V
I_{LOAD}	-10 ~ +10	mA
Junction temperature range	-40 to +125	°C
Storage temperature range	-55 to +150	°C

The values beyond the boundaries of absolute maximum rating may cause the damage to the device. Functional operation in this context is not implied. Continuous use of the device at the absolute rating level might influence device reliability. All voltages have their reference to device ground.

Thermal Characteristics

Package	Power Dissipation @ $T_A=25^\circ\text{C}$	θ_{JC} °C/W	θ_{JA} °C/W
SOT-89-5	1.0W	8	180

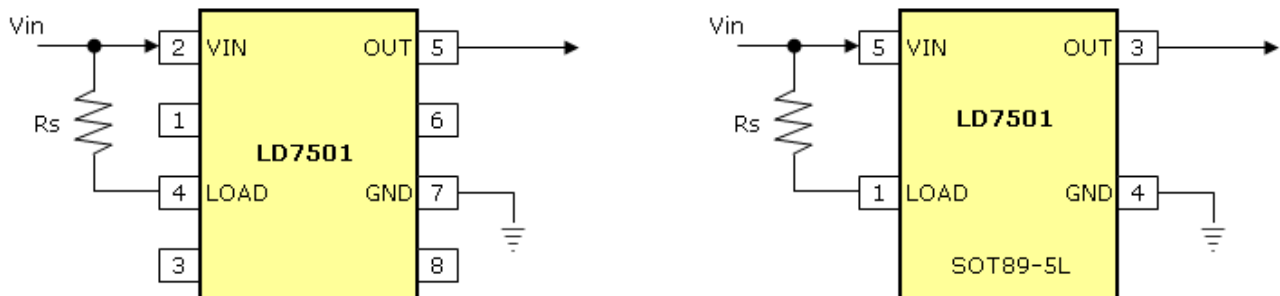
Electrical Characteristics

Test conditions unless otherwise specified: $T_A=25^\circ\text{C}$

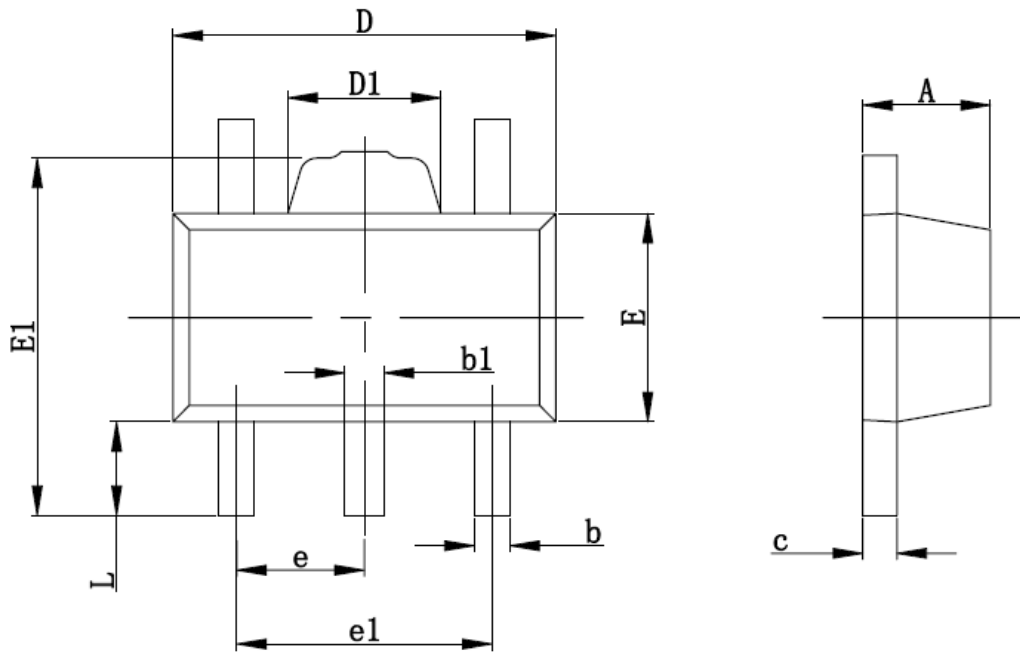
Parameter	Symbol	Condition	Min	Typ	Max	Units
Supply voltage range	V_{IN}	–	10	–	430	V
Quiescent supply current	I_Q	$V_{IN}= 10\sim 430\text{V}, V_{SENSE}= 0\text{mV}$	–	–	80	μA
Output Resistance	R_{OUT}	–	–	2.5	–	$\text{K}\Omega$
Output Voltage while $V_{SENSE} = 350\text{mV}$	V_{OUT}	Bin1 Category	322	331	340	mV
		Bin2 Category	340	350	359	
		Bin3 Category	359	368	378	
Output Voltage $V_{SENSE} = \text{other ranges}$	V_{OUT}	$V_{SENSE} = 0\text{mV}$	0	–	20	mV
		$V_{SENSE} = 100\text{mV}$	79	–	121	
		$V_{SENSE} = 500\text{mV}$	470	–	530	
Output rise time	t_{RISE}	V_{SENSE} step 5mV to 500mV, $V_{IN}= 24\text{V}$	–	–	1.2	μS
		V_{SENSE} step 500mV to 0mV, $V_{IN}= 24\text{V}$	–	–	2.0	
Output fall time	t_{FALL}	V_{SENSE} step 500mV to 0mV, $V_{IN}= 24\text{V}$	–	–	2.0	μS

Note: $V_{SENSE} = V_{IN} - V_{LOAD}$

Typical Application Circuit



Package Outline



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	0.360	0.560	0.014	0.022
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.400	1.800	0.055	0.071
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP		0.060TYP	
e1	2.900	3.100	0.114	0.122
L	0.900	1.100	0.035	0.043

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