



Bay Linear

Linear Excellence

400mA Low Dropout Voltage Regulators

Adjustable & Fix Output

L48XX

Advance Information

Description

The Bay Linear L48XX this series of fixed-voltage monolithic micro-power voltage regulators is designed for a wide range of applications. This device excellent choice in battery- powered application. Furthermore, the quiescent current increases only slight at dropout, which prolong battery life.

This series of fixed voltage regulators features very low quiescent current (100mA Typ.) and very low drop output voltage (Typ. 60mV at light load and 420mV at 400mA). This includes a tight initial tolerance of 0.5%Typ., extremely good load and line regulation of 0.05%typ., and very low output temperature coefficient.

This series of fixed-voltage regulator is offered in 3-pin TO-220 package compatible with other fixed-voltage regulators. Adjust model is offered in 5-pin TO-220 package and fixed model with shutdown input is offered in 4-pin TO-220 package.

Features

- **400mA output within 2% over temperature**
- **Very Low quiescent current**
- **Low dropout Voltage (420 mV Typ.)**
- **Extremely tight load and line regulation**
- **Very low temperature coefficient**
- **Current and thermal limiting**
- **Unregulated DC input can withstand-20V reverse battery and +60V positive transients**
- **Direct replacement for SGS-THOMSON-L48XX series**

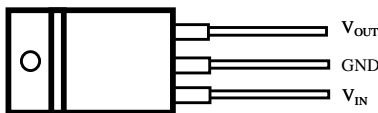
Applications

- **High-efficiency linear regulator**
- **Battery powered systems**
- **Portable /Palm top/ Notebook Computers**
- **Portable consumer equipment**
- **Portable instrumentation**
- **Automotive Electronics**

Pin Connection



Plastic Package
TO-220



Front View

Ordering Information

Devices	Package	Temp.
L48XXT	TO-220	0 to 70 °

Absolute Maximum Rating

Parameter	Value
Lead Temperature (Soldering, 5 seconds)	260°C
Storage Temperature Range	-65°C to +150°
Operating Junction Temperature Range	-55°C to +150°C
Input Supply Voltage	-20V to +35V
Continuous total dissipation at 25°C free-air temperature	2W
Continuous total dissipation at (or below) 25°C case temperature	15W

Electrical Characteristics

($V_{IN} = 4.75V$ to $5.25V$; $I_O = 10mA$ to $1.5Amp$, unless otherwise specified)

Parameter	Conditions	MIN	TYP	MAX	UNIT
Output Voltage	-25°C ≤ T _J ≤ 85°C Full Operating Temperature	0.985 V _O 0.98V _O	V _O	1.015V _O 1.02V _O	V
Output Voltage	1mA ≤ I _L ≤ 400mA, T _J ≤ T _{JMAX}	0.975V _O		1.025V _O	
Input Supply Voltage				26	
Output Voltage Temperature Coefficient	(Note 1)		50	150	ppm/°C
Line Regulation (Note 2)	13V ≤ V _{in} ≤ 26V (Note3)		0.1	0.4	%
Load Regulation (Note 2)	1mA ≤ I _L ≤ 400mA		0.1	0.3	%
Dropout Voltage (Note 4)	I _L = 150mA, I _L = 400mA		200 420	400 700	mV
Ground Current (Note 5)	I _L = 100μA I _L = 150mA I _L = 400mA		100 12 30	200 20 50	μA mA
Dropout Ground Current (Note5)	V _{in} = V _{out} - 0.5V, I _L = 100μA		110	220	μA
Current Limit	V _{out} = 0		350	500	mA
Thermal Regulation (Note 6)			0.05	0.2	%/W
Output Noise, 10Hz to 100KHz I _L = 100mA	C _F = 2.2μF C _L = 3.3μF C _μ = 33μF		500 350 120		μV RMS
Ripple Rejection Ratio	I _O = 350mA, f = 120Hz, C _O = 100μF, V _{in} = V _O + 3V + 2Vpp-	60			dB
Adjust Model					
Reference Voltage		1.21	1.235	1.26	V
Reference Voltage	Over Temperature (Note7)	1.185		1.285	
Feedback Pin Bias Current			20	40	nA
Reference Voltage Temperature Coefficient	(Note 1)		50		Ppm/%C
Feedback Pin Bias Current Temperature Coefficient			0.1		NA/°C
Shutdown Input					
Input Logic Voltage	Low (Regulator ON) High (Regulator OFF)	2	1.3	0.7	V
Shutdown Pin Input Current	V _S = 2.4V V _S = 26V		30 450	50 600	μA
Regular Output Current in Shutdown	(Note 8) 5.0V ≤ V _{out} < 15.0V 3.3V ≤ V _{out} < 5.0V 2.0V ≤ V _{out} < 3.3V			10 20 30	

Advance Information- These data sheets contain descriptions of products that are in development. The specifications are based on the engineering calculations, computer simulations and/ or initial prototype evaluation.

Preliminary Information- These data sheets contain minimum and maximum specifications that are based on the initial device characterizations. These limits are subject to change upon the completion of the full characterization over the specified temperature and supply voltage ranges.

The application circuit examples are only to explain the representative applications of the devices and are not intended to guarantee any circuit design or permit any industrial property right to other rights to execute. Bay Linear takes no responsibility for any problems related to any industrial property right resulting from the use of the contents shown in the data book. Typical parameters can and do vary in different applications. Customer's technical experts must validate all operating parameters including "Typical" for each customer application.

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