Bay Linear

Linear Excellence

100mA Negative Voltage Regulator

LM79LXX

Description

The Bay Linear LM79LXX is integrated linear negative regulator with three terminals. The LM79LXX offer several fixed output voltages making them useful in wide range of applications. These applications include on-card regulation for elimination of noise and distribution problems associated with single-point regulation. In addition they can be used with power pass elements to make high-current voltage regulators. Each of these regulators can deliver up to 100mA of output current.

When used in replacement for a Zener diode-resistor combination, an effective improvement in output impedance can be obtained together with lower-bias current.

The LM79LXX is available in the plastic TO-92 (Z) package.

Features

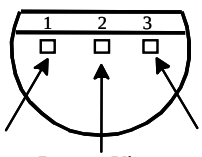
- **Output Current of 100mA**
- **Output Voltage Tolerance of 5%**
- **Internal thermal overload protection**
- **Internal Short-Circuit Limited**
- **No External Component**
- **Output Voltage- 5.0V, -12V, -15V, -18V, -24V**
- **Offer in plastic TO-92**
- **Direct Replacement for MC79L00**

Applications

- **Post regulator for switching DC/DC converter**
- **Bias supply for analog circuits**

Packaging Information

TO-92 (N)



Bottom View

1. Common
2. Input
3. Output

Ordering Information

Device	Operating Voltage	Temp.	Package
LM79l05	7 to 20	0 to 125 °C	TO-92
LM79L12	14.5 to 27	0 to 125 °C	TO-92
LM79L15	17.5 to 30	0 to 125 °C	TO-92
LM79L18	20.5 to 33	0 to 125 °C	TO-92
LM79L24	27 to 38	0 to 125 °C	TO-92

Absolute Maximum Rating

Parameter	LM79L05	LM78L12…LM78L18	LM78L24	Unit
Input Voltage	-30	-35	-40	V
Operating Free-Air, Case, Virtual Junction Temp.	0 to 150	0 to 150	0 to 150	°C
Storage Temperature Range	-65 to 150	-65 to 150	-65 to 150	
Lead temperature 1.6 mm from case for sec.	260	260	260	

Electrical Characteristics (LM79L05)

(V_I=10V, I_O=40mA, 0°C ≤T_J≤125 °C, C_I = 0.33µF, C_O = 0.1µF, unless otherwise specified. (Note 1)

Parameter	Symbol	Conditions	MIN	TYP	MAX	UNIT
Output Voltage	V_O	T_J = 25 °C	-4.8	-5.0	-5.2	V
Line Regulation	ΔV_O	V_I = -7V to -20V T_J = 25 °C		15	150	mV
		V_I = -7V to -20V T_J = 25 °C			100	
Load Regulation	ΔV_O	I_O = 1mA to 100mA, 25 °C		20	60	mV
		I_O = 1mA to 40mA, 25 °C		10	30	
Ripple Rejection	RR	V_I = -8V to -18V, f=120Hz	41	49		dB
Output Noise Voltage	V_N	F= 10Hz to 100Hz T_J = 25 °C		46		µV
Dropout Voltage	V_D	T_J = 25 °C		1.7		V
Quiescent Current		T_J = 25 °C			6mA	mA
Quiescent Current Change	ΔI_Q	V_I = -8V to -20V, T_J = 25 °C			1.5	mA
		I_O = 1mA to 40mA, T_J = 25 °C			0.1	

Electrical Characteristics (LM79L12)

(V_I=10V, I_O=40mA, 0°C ≤T_J≤125 °C, C_I = 0.33µF, C_O = 0.1µF, unless otherwise specified. (Note 1)

Parameter	Symbol	Conditions	MIN	TYP	MAX	UNIT
Output Voltage	V_O	T_J = 25 °C	-11.50	-12	-12.5	V
Line Regulation	ΔV_O	V_I =-14.5V to -27V T_J = 25 °C		50	250	mV
		V_I =- 14.5V to -27V T_J = 25 °C		40	200	
Load Regulation	ΔV_O	I_O = 1mA to 100mA, 25 °C		24	100	mV
		I_O = 1mA to 40mA, 25 °C		15	50	
Ripple Rejection	RR	V_I = -16V to -27V, f=120Hz	37	42		dB
Output Noise Voltage	V_N	F= 10Hz to 100Hz TJ = 25 °C		80		µV
Dropout Voltage	V_D	T_J = 25 °C		1.7		V
Quiescent Current		T_J = 25 °C			6.5mA	mA
Quiescent Current Change	ΔI_Q	V_I = -16V to -27V, T_J = 25 °C			1.5	mA
		I_O = 1mA to 40mA, T_J = 25 °C			0.1	

Electrical Characteristics (LM79L15)

(V_I=10V, I_O=40mA, 0°C ≤T_J≤125 °C, C_I = 0.33µF, C_O = 0.1µF, unless otherwise specified. (Note 1)

Parameter	Symbol	Conditions	MIN	TYP	MAX	UNIT
Output Voltage	V_O	T_J = 25 °C	-14.40	-15	-15.60	V
Line Regulation	ΔV_O	V_I = -17.5V to -30V T_J = 25 °C		65	250	mV
		V_I = -17.5V to -30V T_J = 25 °C		50	300	
Load Regulation	ΔV_O	I_O = 1mA to 100mA, 25 °C		25	150	mV
		I_O = 1mA to 40mA, 25 °C		15	75	
Ripple Rejection	RR	V_I = -18.5V to -28.5V, f=120Hz	34	39		dB
Output Noise Voltage	V_N	F= 10Hz to 100Hz TJ = 25 °C		90		µV
Dropout Voltage	V_D	T_J = 25 °C		1.7		V
Quiescent Current		T_J = 25 °C			6.5	mA
Quiescent Current Change	ΔI_Q	V_I = -20V to -30V, T_J = 25 °C			1.5	mA
		I_O = 1mA to 40mA, T_J = 25 °C			0.1	

Electrical Characteristics (LM79L18)

(V_I=10V, I_O=40mA, 0°C ≤T_J≤125 °C, C_I = 0.33µF, C_O = 0.1µF, unless otherwise specified. (Note 1)

Parameter	Symbol	Conditions	MIN	TYP	MAX	UNIT
Output Voltage	V_O	T_J = 25 °C	-17.30	-18	-18.7	V
Line Regulation	ΔV_O	V_I = -20.5V to -33V T_J = 25 °C		70	325	mV
		V_I = -20.5V to -33V T_J = 25 °C		60	375	
Load Regulation	ΔV_O	I_O = 1mA to 100mA, 25 °C		27	170	mV
		I_O = 1mA to 40mA, 25 °C		19	85	
Ripple Rejection	RR	V_I = -23V to -33V, f=120Hz	33	48		dB
Output Noise Voltage	V_N	F= 10Hz to 100Hz TJ = 25 °C		150		µV
Dropout Voltage	V_D	T_J = 25 °C		1.7		V
Quiescent Current		T_J = 25 °C		4.7	6.5mA	mA
Quiescent Current Change	ΔI_Q	V_I = -21V to -33V, T_J = 25 °C			1.5	mA
		I_O = 1mA to 40mA, T_J = 25 °C			0.1	

Electrical Characteristics (LM79L24)

(V_I=10V, I_O=40mA, 0°C ≤T_J≤125 °C, C_I = 0.33µF, C_O = 0.1µF, unless otherwise specified. (Note 1)

Parameter	Symbol	Conditions	MIN	TYP	MAX	UNIT
Output Voltage	V_O	T_J = 25 °C	-23	-24	-25	V
Line Regulation	ΔV_O	V_I = -27V to -38V T_J = 25 °C		90	350	mV
		V_I = -27V to -38V T_J = 25 °C		75	300	
Load Regulation	ΔV_O	I_O = 1mA to 100mA, 25 °C		40	200	mV
		I_O = 1mA to 40mA, 25 °C		25	100	
Ripple Rejection	RR	V_I =- 29V to -35V, f=120Hz	30	33		dB
Output Noise Voltage	V_N	F= 10Hz to 100Hz TJ = 25 °C		200		µV
Dropout Voltage	V_D	T_J = 25 °C		1.7		V
Quiescent Current		T_J = 25 °C		4	6.5	mA
Quiescent Current Change	ΔI_Q	V_I = -28V to -38V, T_J = 25 °C			1.5	mA
		I_O = 1mA to 40mA, T_J = 25 °C			0.1	

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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