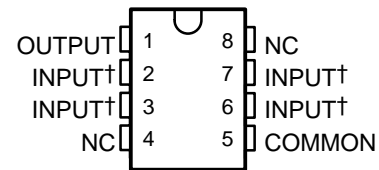


MC79L00 SERIES NEGATIVE-VOLTAGE REGULATORS

SLVS011C – OCTOBER 1982 – REVISED APRIL 2001

- 3-Terminal Regulators
- Output Current up to 100 mA
- No External Components Required
- Internal Thermal-Overload Protection
- Internal Short-Circuit Current Limiting
- Direct Replacement for Motorola MC79L00 Series
- Available in 5% or 10% Selections

**D PACKAGE
(TOP VIEW)**



† Internally connected
NC – No internal connection

description

This series of fixed negative-voltage integrated-circuit voltage regulators is designed for a wide range of applications. These include on-card regulation for elimination of noise and distribution problems associated with single-point regulation. In addition, they can be used to control series pass elements to make high-current voltage-regulator circuits. One of these regulators can deliver up to 100 mA of output current. The internal current-limiting and thermal-shutdown features essentially make the regulators immune to overload. When used as a replacement for a zener-diode and resistor combination, these devices can provide an effective improvement in output impedance of two orders of magnitude, with lower bias current.

The MC79L00C series is characterized for operation over the virtual junction temperature range of 0°C to 125°C.

**LP PACKAGE
(TOP VIEW)**



AVAILABLE OPTIONS

T _J	NOMINAL OUTPUT VOLTAGE (V)	PACKAGED DEVICES			
		OUTPUT VOLTAGE TOLERANCE			
		SMALL OUTLINE (D)		PLASTIC CYLINDRICAL (LP)	
		5%	10%	5%	10%
0°C to 125°C	-5	MC79L05ACD	–	MC79L05ACL	–
	-12	MC79L12ACD	MC79L12CD	MC79L12ACL	MC79L12CL
	-15	MC79L15ACD	MC79L15CD	MC79L15ACL	–

The D package is available taped and reeled. Add the suffix R to the device type (e.g., MC79L05ACDR). The LP package is available taped and reeled or in ammo pack. Add the suffix M to the device type for ammo pack (e.g., MC79L15ACLPM).



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

**TEXAS
INSTRUMENTS**

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MC79L00 SERIES NEGATIVE-VOLTAGE REGULATORS

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electrical characteristics at specified virtual junction temperature, $V_I = -10$ V, $I_O = 40$ mA (unless otherwise noted)

PARAMETER	TEST CONDITION [†]	T _J	MC79L05C			MC79L05AC			UNIT
			MIN	TYP	MAX	MIN	TYP	MAX	
Output voltage [‡]		25°C	-4.6	-5	-5.4	-4.8	-5	-5.2	V
	$V_I = -7$ V to -20 V, $I_O = 1$ mA to 40 mA	0°C to 125°C	-4.5		-5.5	-4.75		-5.25	
	$V_I = -10$ V, $I_O = 1$ mA to 70 mA	0°C to 125°C	-4.5		-5.5	-4.75		-5.25	
Input regulation	$V_I = -7$ V to -20 V	25°C				200			mV
	$V_I = -8$ V to -20 V					150			
Ripple rejection	$V_I = -8$ V to -18 V, $f = 120$ Hz	25°C	40	49		41	49		dB
Output regulation	$I_O = 1$ mA to 100 mA	25°C				60			mV
	$I_O = 1$ mA to 40 mA					30			
Output noise voltage	$f = 10$ Hz to 100 kHz	25°C	40			40			μV
Dropout voltage	$I_O = 40$ mA	25°C	1.7			1.7			V
Bias current		25°C				6			mA
		125°C				5.5			
Bias current change	$V_I = -8$ V to -20 V	0°C to 125°C				1.5			mA
	$I_O = 1$ mA to 40 mA					0.1			

[†] All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately.

[‡] This specification applies only for dc power dissipation permitted by absolute maximum ratings.

electrical characteristics at specified virtual junction temperature, $V_I = -19$ V, $I_O = 40$ mA (unless otherwise noted)

PARAMETER	TEST CONDITION [†]	T _J	MC79L12C			MC79L12AC			UNIT
			MIN	TYP	MAX	MIN	TYP	MAX	
Output voltage [‡]		25°C	-11.1	-12	-12.9	-11.5	-12	-12.5	V
	$V_I = -14.5$ V to -27 V, $I_O = 1$ mA to 40 mA	0°C to 125°C	-10.8		-13.2	-11.4		-12.6	
	$V_I = -19$ V, $I_O = 1$ mA to 70 mA	0°C to 125°C	-10.8		-13.2	-11.4		-12.6	
Input regulation	$V_I = -14.5$ V to -27 V	25°C				250			mV
	$V_I = -16$ V to -27 V					200			
Ripple rejection	$V_I = -15$ V to -25 V, $f = 120$ Hz	25°C	36	42		37	42		dB
Output regulation	$I_O = 1$ mA to 100 mA	25°C				100			mV
	$I_O = 1$ mA to 40 mA					50			
Output noise voltage	$f = 10$ Hz to 100 kHz	25°C	80			80			μV
Dropout voltage	$I_O = 40$ mA	25°C	1.7			1.7			V
Bias current		25°C				6.5			mA
		125°C				6			
Bias current change	$V_I = -16$ V to -27 V	0°C to 125°C				1.5			mA
	$I_O = 1$ mA to 40 mA					0.1			

[†] All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately.

[‡] This specification applies only for dc power dissipation permitted by absolute maximum ratings.



MC79L00 SERIES NEGATIVE-VOLTAGE REGULATORS

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electrical characteristics at specified virtual junction temperature, $V_I = -23\text{ V}$, $I_O = 40\text{ mA}$ (unless otherwise noted)

PARAMETER	TEST CONDITION [†]	T _J	MC79L15C			MC79L15AC			UNIT
			MIN	TYP	MAX	MIN	TYP	MAX	
Output voltage [‡]		25°C	-13.8	-15	-16.2	-14.4	-15	-15.6	V
	$V_I = -17.5\text{ V to }-30\text{ V}$, $I_O = 1\text{ mA to }40\text{ mA}$	0°C to 125°C	-13.5		-16.5	-14.25		-15.75	
	$V_I = -23\text{ V}$, $I_O = 1\text{ mA to }70\text{ mA}$	0°C to 125°C	-13.5		-16.5	-14.25		-15.75	
Input regulation	$V_I = -17.5\text{ V to }-30\text{ V}$	25°C	300			300			mV
	$V_I = -17.5\text{ V to }-30\text{ V}$		250			250			
Ripple rejection	$V_I = -18.5\text{ V to }-28.5\text{ V}$, $f = 120\text{ Hz}$	25°C	33	39		34	39		dB
Output regulation	$I_O = 1\text{ mA to }100\text{ mA}$	25°C	150			150			mV
	$I_O = 1\text{ mA to }40\text{ mA}$		75			75			
Output noise voltage	$f = 10\text{ Hz to }100\text{ kHz}$	25°C	90			90			μV
Dropout voltage	$I_O = 40\text{ mA}$	25°C	1.7			1.7			V
Bias current		25°C	6.5			6.5			mA
		125°C	6			6			
Bias current change	$V_I = -20\text{ V to }-30\text{ V}$	0°C to 125°C	1.5			1.5			mA
	$I_O = 1\text{ mA to }40\text{ mA}$		0.2			0.1			

[†] All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately.

[‡] This specification applies only for dc power dissipation permitted by absolute maximum ratings.



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