

Three-Terminal Negative Voltage Regulator

LM79L09

■ Features

- Maximum output current I_{OM} : 0.1A.
- Output voltage V_O : -9V.
- Continuous total dissipation P_D : 0.5W

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Input Voltage	V_I	-30	V
Operating junction temperature range	T_{OPR}	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics ($V_I = -16\text{V}$, $I_O = 40\text{mA}$, $0^\circ\text{C} < T_j < 125^\circ\text{C}$, $C_1 = 0.33\ \mu\text{F}$, $C_O = 0.1\ \mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	V_O	$T_j = 25^\circ\text{C}$	-8.64	-9.0	-9.36	V
		$-12\text{V} \leq V_I \leq -24\text{V}$, $I_O = 1\text{mA} - 40\text{mA}$	-8.55	-9.0	-9.45	V
		$I_O = 1\text{mA} - 70\text{mA}$	-8.55	-9.0	-9.45	V
Load regulation	ΔV_O	$T_j = 25^\circ\text{C}$, $I_O = 1\text{mA} - 100\text{mA}$		19	90	mV
		$T_j = 25^\circ\text{C}$, $I_O = 1\text{mA} - 40\text{mA}$		11	40	mV
Line regulation	ΔV_O	$-12\text{V} \leq V_I \leq -24\text{V}$, $T_j = 25^\circ\text{C}$		45	175	mV
		$-13\text{V} \leq V_I \leq -24\text{V}$, $T_j = 25^\circ\text{C}$		40	125	mV
Quiescent current	I_q	25°C		4.1	6.0	mA
Quiescent current change	ΔI_q	$0^\circ\text{C} < T_j < 125^\circ\text{C}$, $-13\text{V} \leq V_I \leq -24\text{V}$			1.5	mA
	ΔI_q	$0^\circ\text{C} < T_j < 125^\circ\text{C}$, $1\text{mA} \leq I_O \leq 40\text{mA}$			0.1	mA
Output noise voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$, $T_j = 25^\circ\text{C}$		58		μV
Ripple rejection	RR	$-15\text{V} \leq V_I \leq -24\text{V}$, $f = 120\text{Hz}$		45		dB
Dropout voltage	V_d	$T_j = 25^\circ\text{C}$		1.7		V

■ Typical Application

