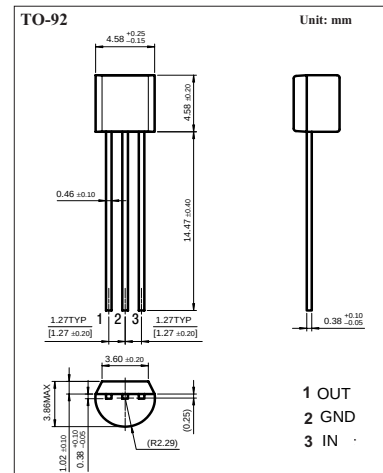


Three-terminal positive Voltage regulator

78L09

■ Features

- Maximum Output current: $I_{OM}=0.1\text{ A}$
- Output voltage : $V_O=9\text{ V}$
- Continuous total dissipation : $P_D=0.625\text{ W}$



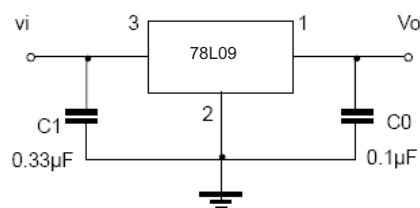
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

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

Parameter	Symbol	Testconditons	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			4.1	6.0	mA
Quiescent Current Change	ΔI_q	$13\text{V}\leq V_I\leq 24\text{V}$			1.5	mA
	ΔI_q	$1\text{mA}\leq I_O\leq 40\text{mA}$			0.1	mA
Output Noise Voltage	V_N	$10\text{Hz}\leq f\leq 100\text{KHz}$		58		μV
Ripple Rejection	R_R	$15\text{V}\leq V_I\leq 25\text{V}, f=120\text{Hz}, T_J=25^\circ\text{C}$		45		dB
Dropout Voltage	V_d	$T_J=25^\circ\text{C}$		1.7		V

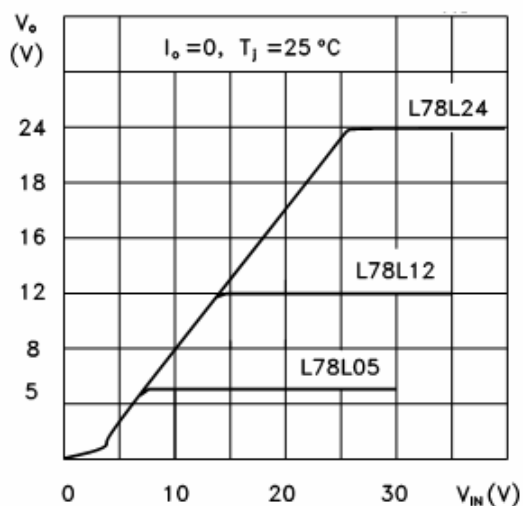
■ Typical Application



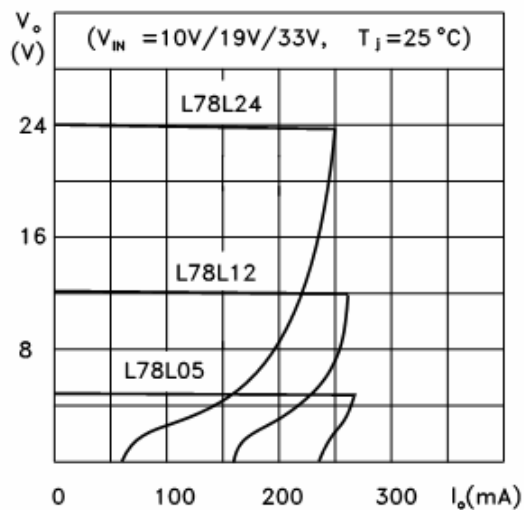
78L09

Typical Characteristics

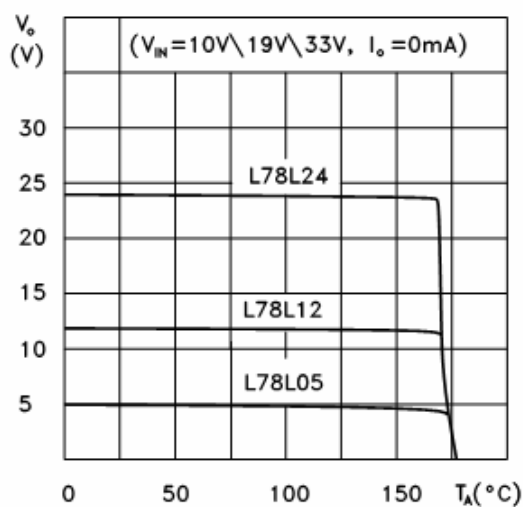
L78L05/12/24 Output Characteristics



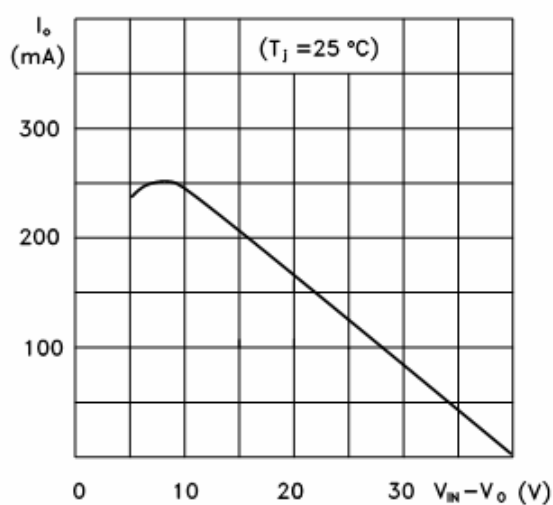
L78L05/12/24 Load Characteristics



L78L05/12/24 Thermal Shutdown



L78L00 Series Short Circuit Output Current



L78L05 Quiescent Current vs Input Voltage

