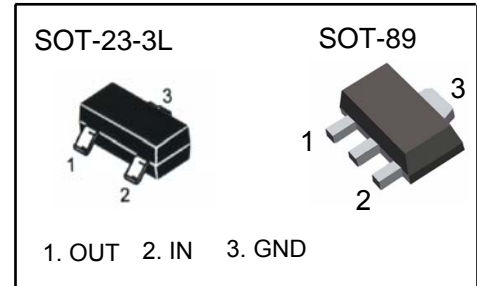


Three-terminal positive voltage regulator

Maximum output current I_o : 0.1 A
 Output voltage V_o : 9 V
 Continuous total dissipation
 P_D : SOT-23-3L 0.35 W ($T_a = 25^\circ\text{C}$)
 SOT-89 0.5 W ($T_a = 25^\circ\text{C}$)



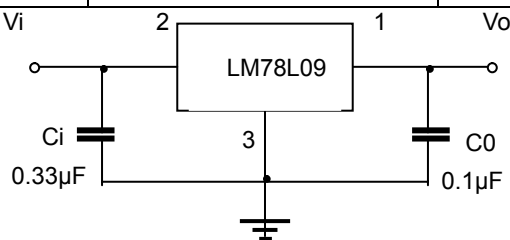
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	V_i	30	V
Operating Junction Temperature Range	T_{OPR}	0-+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55-+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=16\text{V}$, $I_o=40\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

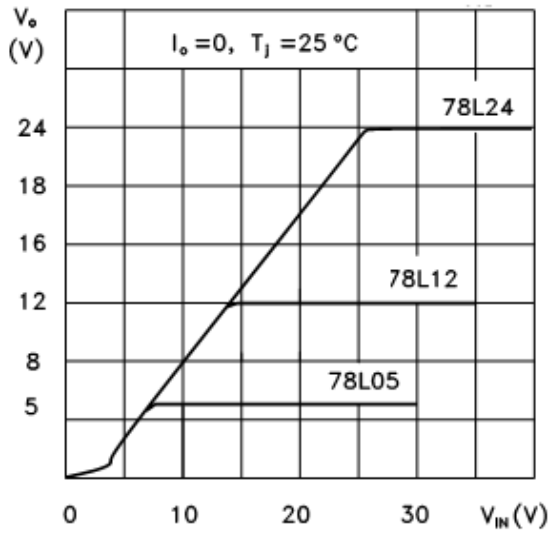
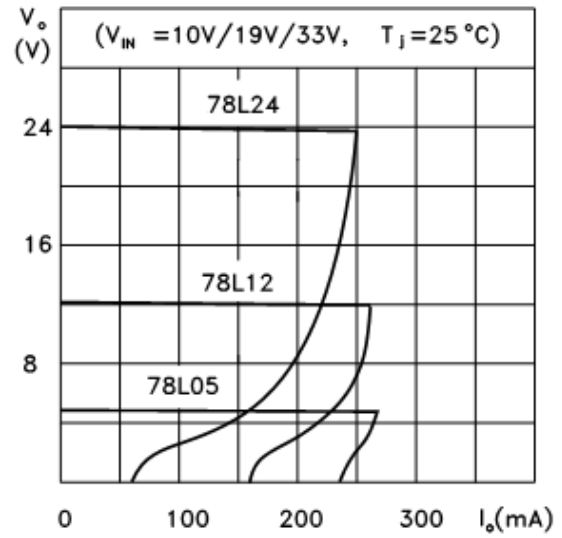
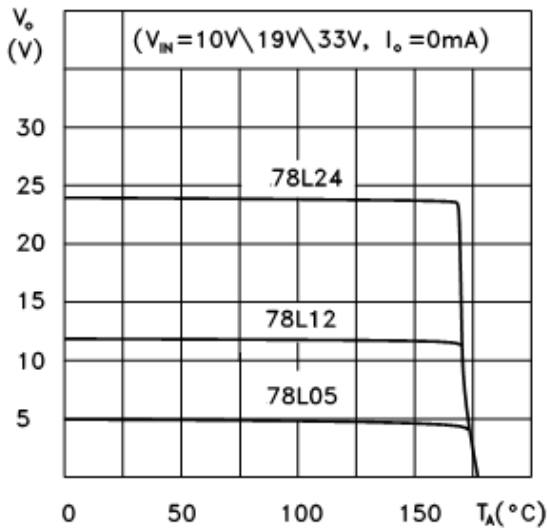
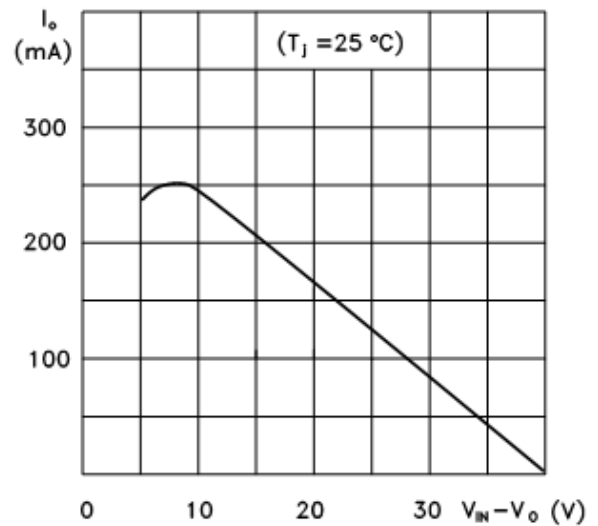
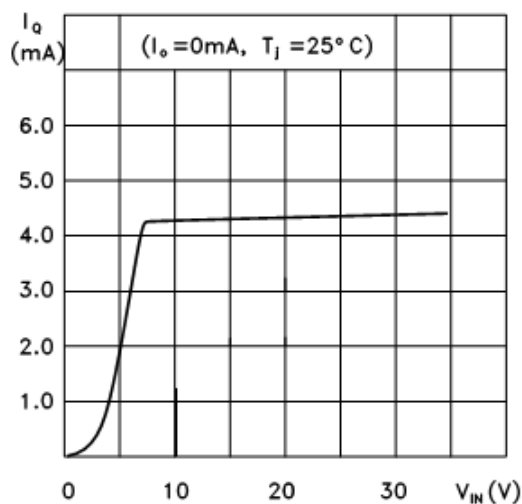
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT	
Output voltage	V_o	25°C	8.64	9.0	9.36	V	
		0-125 $^\circ\text{C}$	$12\text{V} \leq V_i \leq 24\text{V}$, $I_o=1\text{mA}-40\text{mA}$	8.55	9.0	9.45	V
			$I_o=1\text{mA}-70\text{mA}$	8.55	9.0	9.45	V
Load Regulation	ΔV_o	$I_o=1\text{mA}-100\text{mA}$, 25°C		19	90	mV	
		$I_o=1\text{mA}-40\text{mA}$, 25°C		11	40	mV	
Line regulation	ΔV_o	$12\text{V} \leq V_i \leq 24\text{V}$, 25°C		45	175	mV	
		$13\text{V} \leq V_i \leq 24\text{V}$, 25°C		40	125	mV	
Quiescent Current	I_q	25°C		4.1	6.0	mA	
Quiescent Current Change	ΔI_q	$13\text{V} \leq V_i \leq 24\text{V}$, 0-125 $^\circ\text{C}$			1.5	mA	
	ΔI_q	$1\text{mA} \leq I_o \leq 40\text{mA}$, 0-125 $^\circ\text{C}$			0.1	mA	
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{kHz}$, 25°C		58		μV	
Ripple Rejection	RR	$15\text{V} \leq V_i \leq 25\text{V}$, $f=120\text{Hz}$, 0-125 $^\circ\text{C}$		45		dB	
Dropout Voltage	V_d	25°C		1.7		V	

TYPICAL APPLICATION



Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

78L05/12/24 Output Characteristics

78L05/12/24 Load Characteristics

78L05/12/24 Thermal Shutdown

78L00 Series Short Circuit Output Current

78L05 Quiescent Current vs Input Voltage

PD-TA
