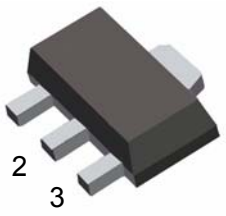
78L09 Three-terminal positive voltage regulator

SOT-89



FEATURES

Maximum Output current

$I_{OM:}$ 0.1 A

Output voltage

V_o: 9 V

Continuous total dissipation

P_D: 0.5 W

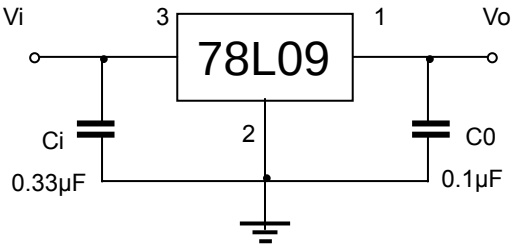
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	V_I	30	V
Operating Junction Temperature Range	T_{OPR}	0-+125	℃
Storage Temperature Range	T_{STG}	-55-+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE (Vi=16V,Io=40mA,Ci=0.33μF,Co=0.1μF, unless otherwise specified)

Parameter	Symbol	Test conditions		MIN	TYP	MAX	UNIT
Output voltage	Vo		25℃	8.64	9.0	9.36	V
		12V≤V_I≤24V, Io=1mA-40mA	0-125℃	8.55	9.0	9.45	V
		Io=1mA-70mA		8.55	9.0	9.45	V
Load Regulation	△Vo	Io=1mA-100mA	25℃		19	90	mV
		Io=1mA-40mA	25℃		11	40	mV
Line regulation	△Vo	12V≤V_I≤24V	25℃		45	175	mV
		13V≤V_I≤24V	25℃		40	125	mV
Quiescent Current	Iq		25℃		4.1	6.0	mA
Quiescent Current Change	△Iq	13V≤V_I≤24V	0-125℃			1.5	mA
	△Iq	1mA≤I_O≤40mA	0-125℃			0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz	25℃		58		uV
Ripple Rejection	RR	15V≤V_I≤25V,f=120Hz	0-125℃		45		dB
Dropout Voltage	Vd		25℃		1.7		V

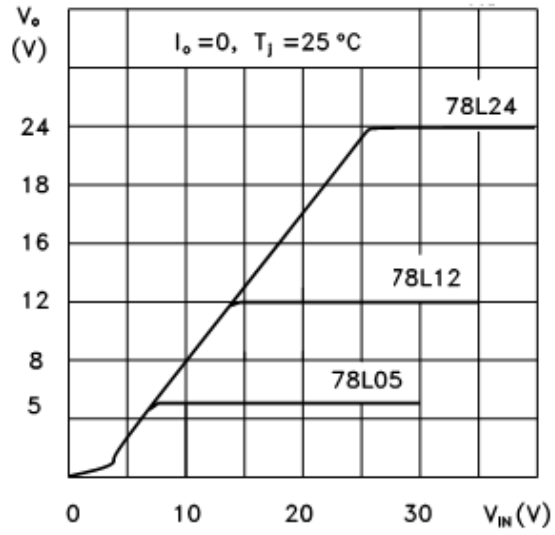
TYPICAL APPLICATION



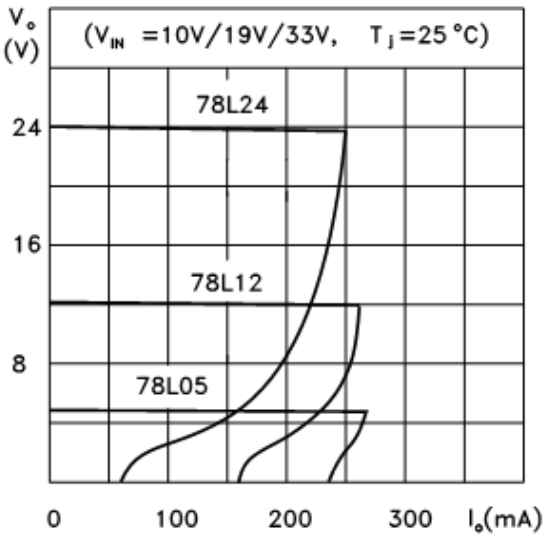
Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

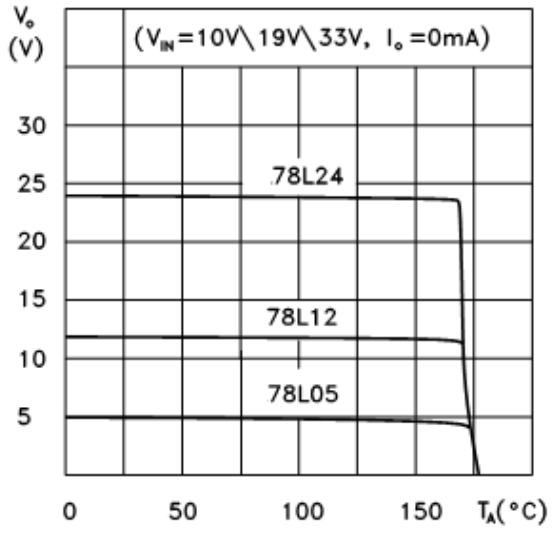
78L05/12/24 Output Characteristics



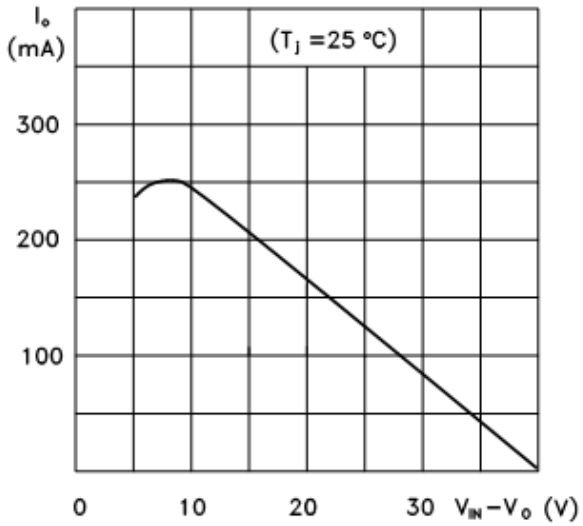
78L05/12/24 Load Characteristics



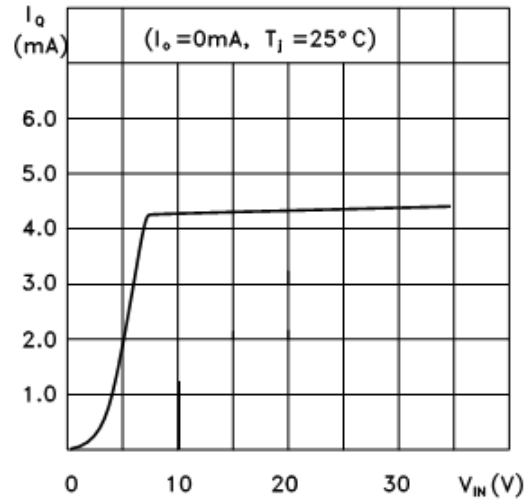
78L05/12/24 Thermal Shutdown



78L00 Series Short Circuit Output Current



78L05 Quiescent Current vs Input Voltage



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