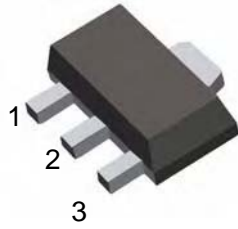


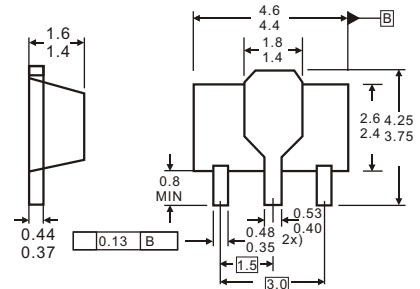
78L05

Three-terminal positive voltage regulator



- 1. OUT
- 2. GND
- 3. IN

SOT-89



Dimensions in inches and (millimeters)

Features

- ✧ Maximum Output current I_O : 0.1 A
- ✧ Output voltage V_O : 5 V
- ✧ Continuous total dissipation P_D : 0.5 W ($T_a = 25^\circ\text{C}$)

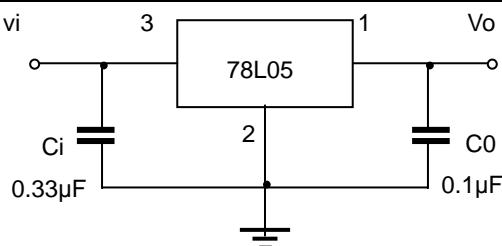
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

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 ($V_I=10\text{V}, I_O=40\text{mA}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	V_o	25°C	4.8	5.0	5.2	V
		$7\text{V} \leq V_i \leq 20\text{V}, I_o=1\text{mA} \sim 40\text{mA}$	4.75	5.0	5.25	V
		$I_o=1\text{mA} \sim 70\text{mA}$	4.75	5.0	5.25	V
Load Regulation	ΔV_o	$I_o=1\text{mA} \sim 100\text{mA}$		15	60	mV
		$I_o=1\text{mA} \sim 40\text{mA}$	25°C	8	30	mV
Line regulation	ΔV_o	$7\text{V} \leq V_i \leq 20\text{V}$		32	150	mV
		$8\text{V} \leq V_i \leq 20\text{V}$	25°C	26	100	mV
Quiescent Current	I_q	25°C		3.8	6	mA
Quiescent Current Change	ΔI_q	$8\text{V} \leq V_i \leq 20\text{V}$	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	10Hz $\leq f \leq$ 100KHz	25°C	42		μV
Ripple Rejection	RR	$8\text{V} \leq V_i \leq 20\text{V}, f=120\text{Hz}$	0-125 $^\circ\text{C}$	41	49	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.

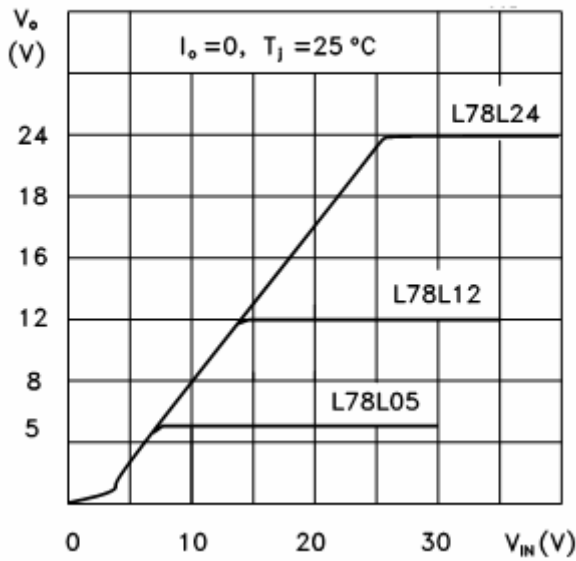
78L05

Three-terminal positive voltage regulator

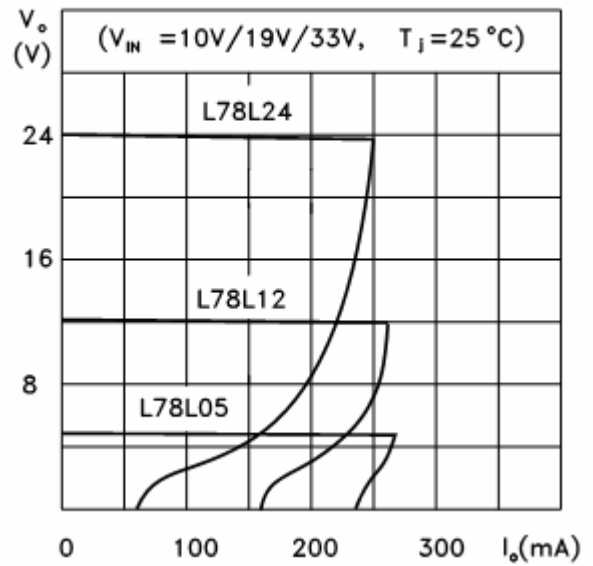


Typical Characteristics

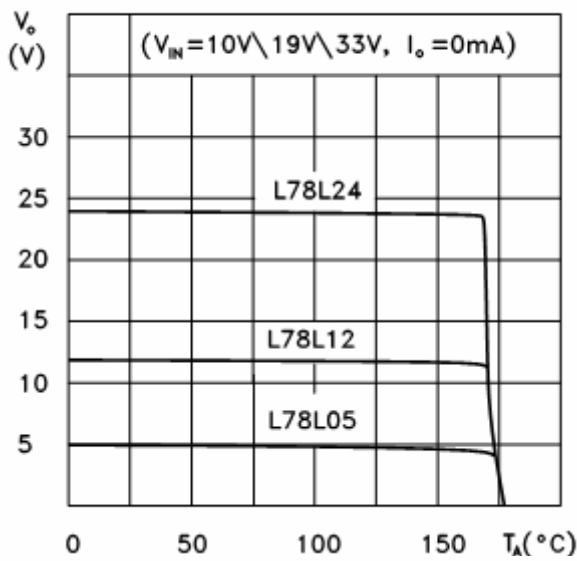
L78L05/12/24 Output Characteristics



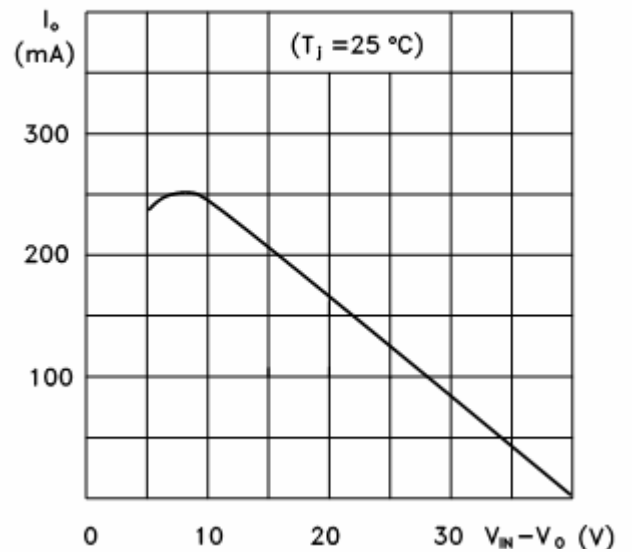
L78L05/12/24 Load Characteristics



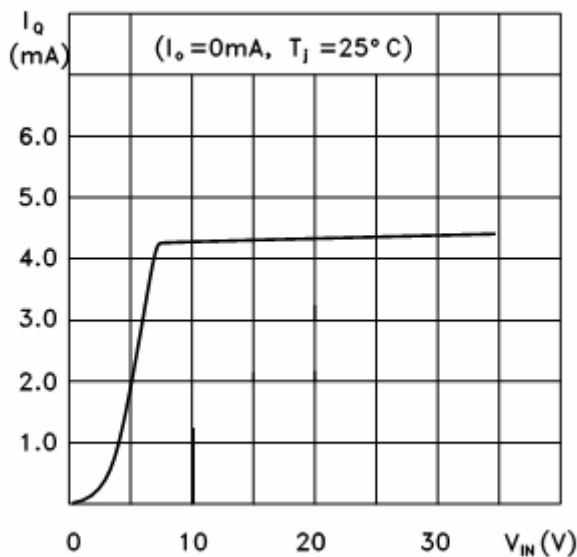
L78L05/12/24 Thermal Shutdown



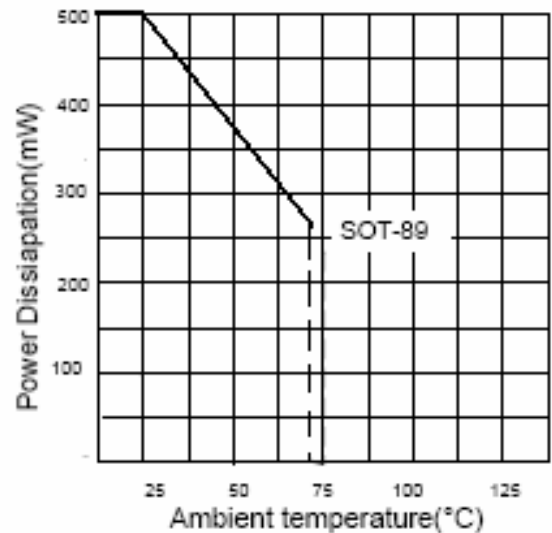
L78L00 Series Short Circuit Output Current



L78L05 Quiescent Current vs Input Voltage



Power dissipation vs. ambient temperature



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