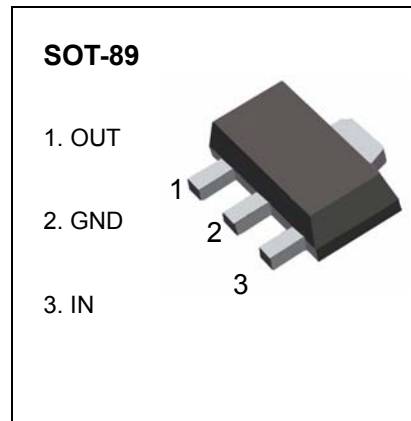


SOT-89 Encapsulate Three Terminal Voltage Regulator

78L05 Three-terminal positive voltage regulator

FEATURES

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



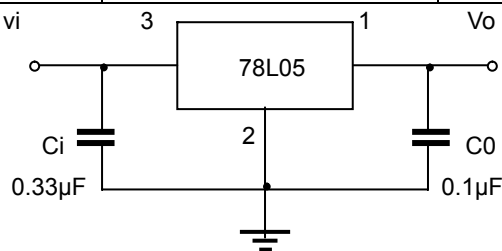
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

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 AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=10V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT	
Output voltage	V_o	25°C	4.8	5.0	5.2	V	
		$7V \leq V_i \leq 20V, I_o = 1mA \sim 40mA$	0-125 $^\circ\text{C}$	4.75	5.0	5.25	V
		$I_o = 1mA \sim 70mA$		4.75	5.0	5.25	V
Load Regulation	ΔV_o	$I_o = 1mA \sim 100mA$	25°C		15	60	mV
		$I_o = 1mA \sim 40mA$	25°C		8	30	mV
Line regulation	ΔV_o	$7V \leq V_i \leq 20V$			32	150	mV
		$8V \leq V_i \leq 20V$	25°C		26	100	mV
Quiescent Current	I_q		25°C		3.8	6	mA
Quiescent Current Change	ΔI_q	$8V \leq V_i \leq 20V$	0-125 $^\circ\text{C}$			1.5	mA
		$1mA \leq I_o \leq 40mA$	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	$8V \leq V_i \leq 20V, f = 120Hz$	0-125 $^\circ\text{C}$	41	49		dB
Dropout Voltage	V_d		25°C		1.7		V

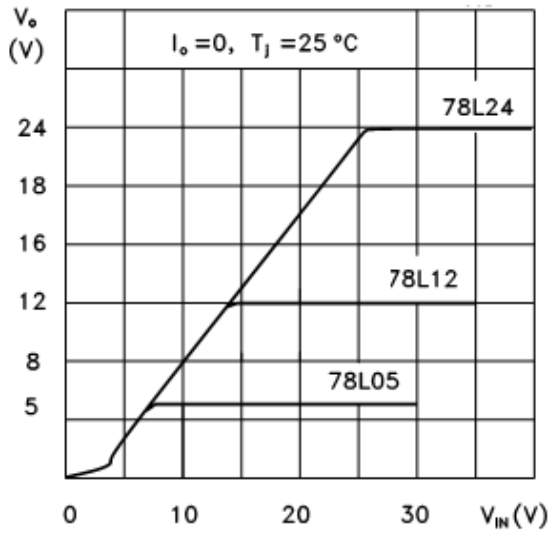
TYPICAL APPLICATION



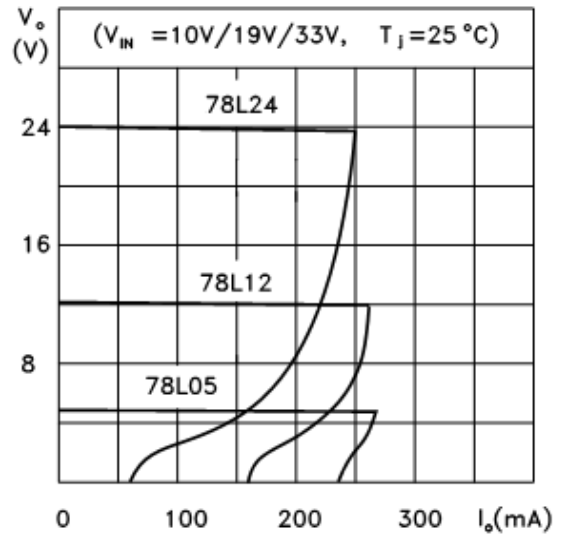
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

Typical Characteristics

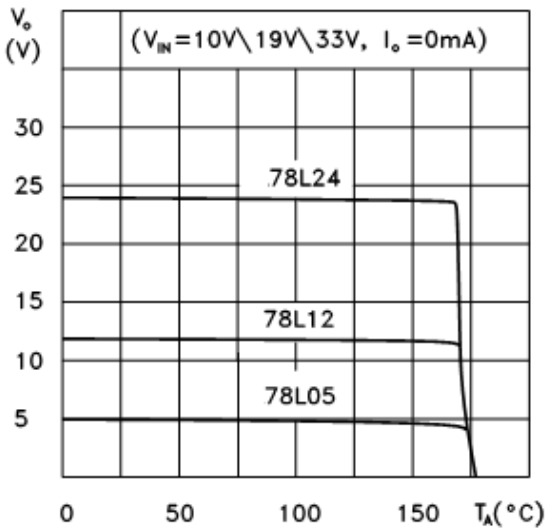
78L05/12/24 Output Characteristics



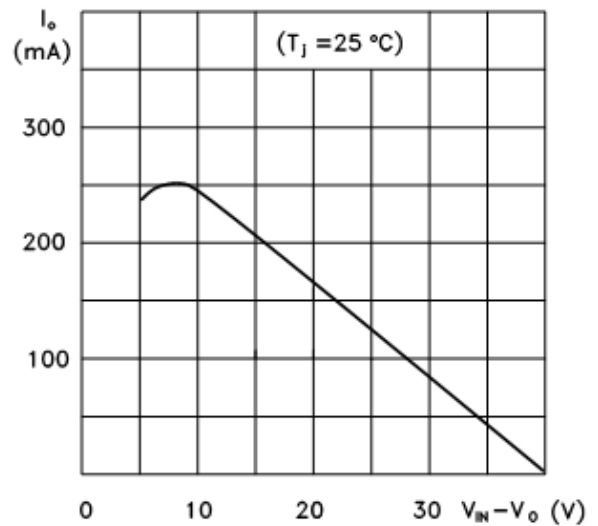
78L05/12/24 Load Characteristics



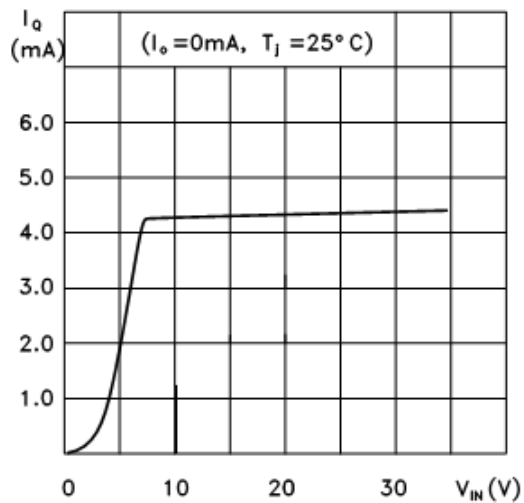
78L05/12/24 Thermal Shutdown



78L00 Series Short Circuit Output Current



78L05 Quiescent Current vs Input Voltage



PD-TA

