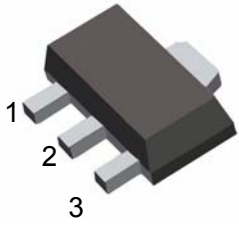


Three-terminal positive voltage regulator	SOT-89 Encapsulate Three Terminal Voltage Regulator
<p style="text-align: center;"><u>SOT-89</u></p>  <p>1. OUT 2. GND 3. IN</p>	<h3>Features</h3> <p>Maximum Output current I_O: 0.1 A Output voltage V_O: 5 V Continuous total dissipation P_D: 0.5 W ($T_a = 25^\circ\text{C}$)</p>

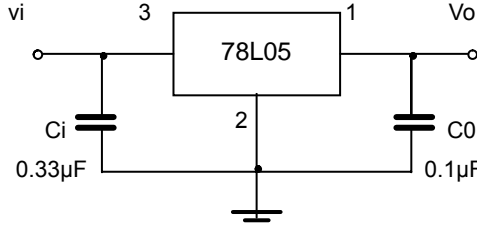
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

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}	-40~+125	$^\circ\text{C}$

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	
		0-125 $^\circ\text{C}$	$7V \leq V_i \leq 20V, I_o=1mA \sim 40mA$	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	
	ΔI_q	$1mA \leq V_i \leq 40mA$	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	

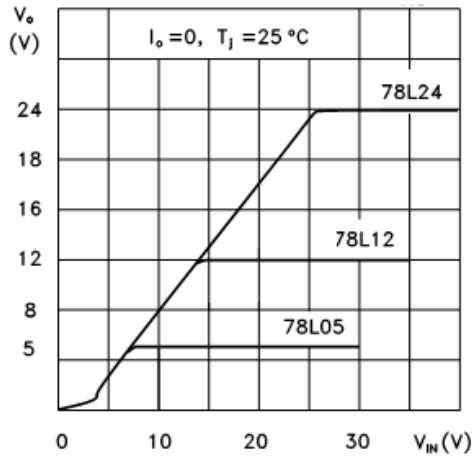
TYPICAL APPLICATION



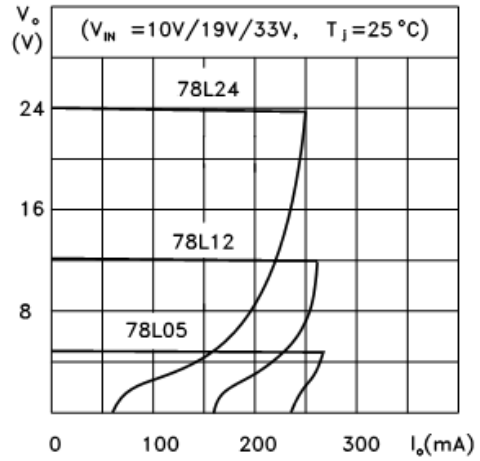
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

Typical Characteristics

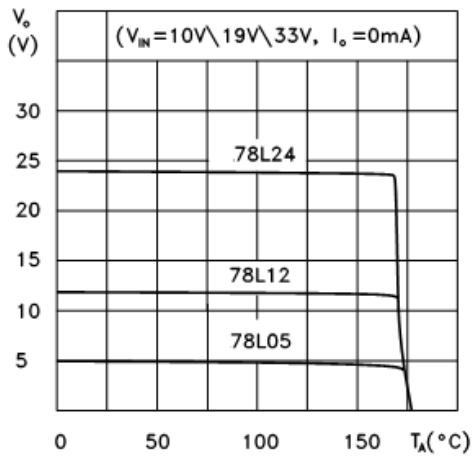
78L05/12/24 Output Characteristics



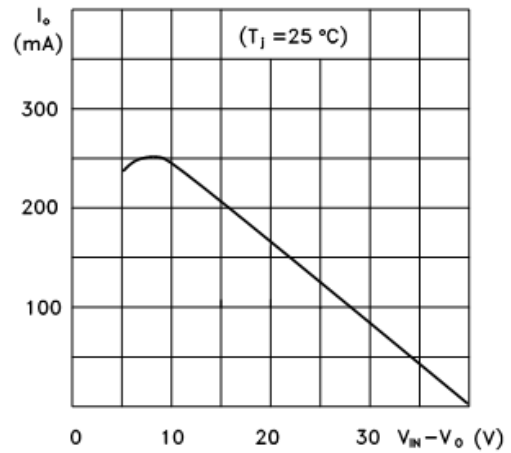
78L05/12/24 Load Characteristics



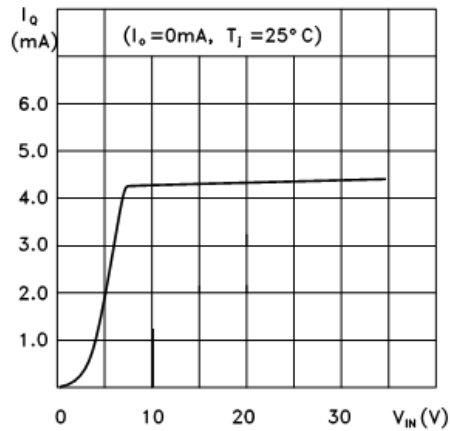
78L05/12/24 Thermal Shutdown



78L00 Series Short Circuit Output Current



78L05 Quiescent Current vs Input Voltage



PD-TA

