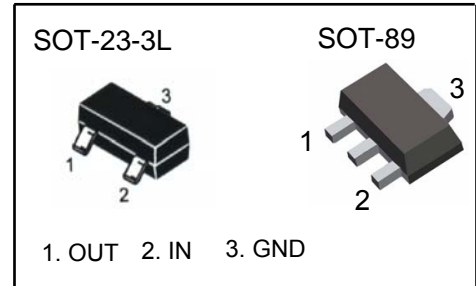


Three-terminal positive voltage regulator

Maximum output current I_O : 0.1 A
 Output voltage V_O : 5 V
 Continuous total dissipation
 P_D : SOT-23-3L 0.35 W ($T_a=25^\circ\text{C}$)
 SOT-89 0.5 W ($T_a=25^\circ\text{C}$)



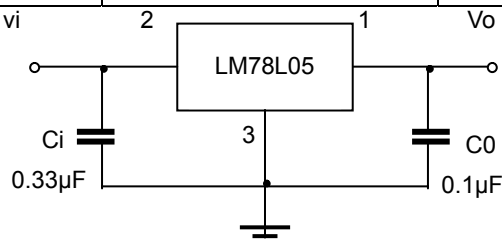
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT	
Output voltage	V_O	25°C	4.8	5.0	5.2	V	
		0-125 $^\circ\text{C}$	$7\text{V} \leq V_I \leq 20\text{V}, I_O=1\text{mA} \sim 40\text{mA}$	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	$I_O=1\text{mA} \sim 100\text{mA}$	25°C	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	
		$1\text{mA} \leq I_O \leq 40\text{mA}$	0-125 $^\circ\text{C}$		0.1	mA	
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{kHz}$	25°C	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	

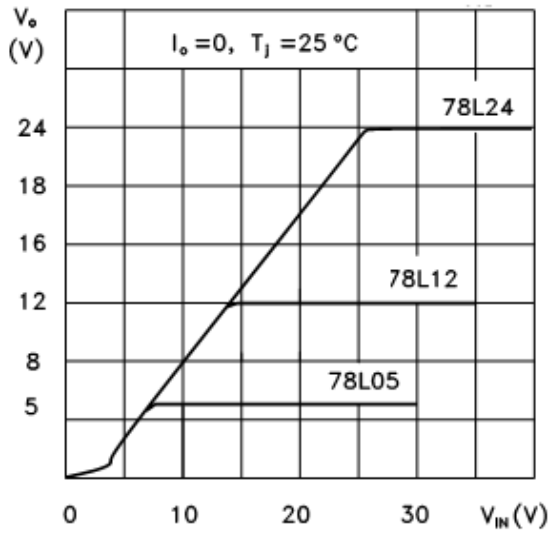
TYPICAL APPLICATION



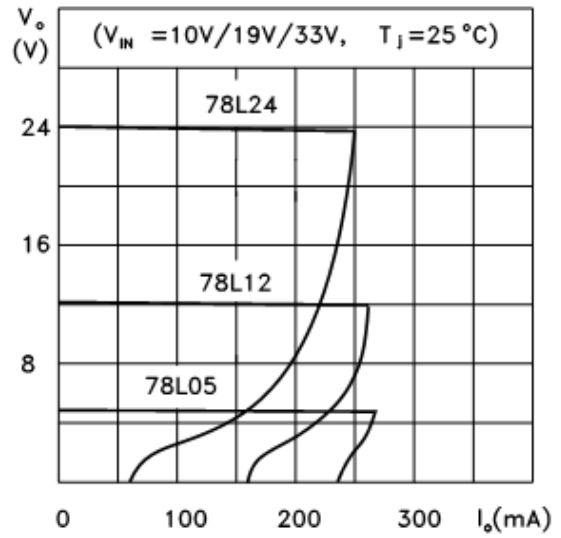
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

Typical Characteristics

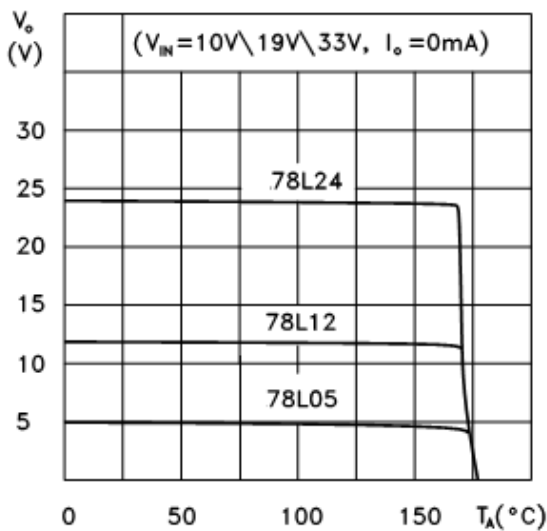
78L05/12/24 Output Characteristics



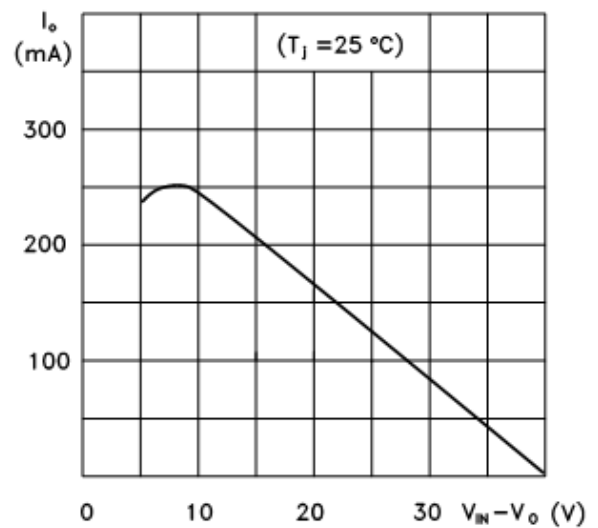
78L05/12/24 Load Characteristics



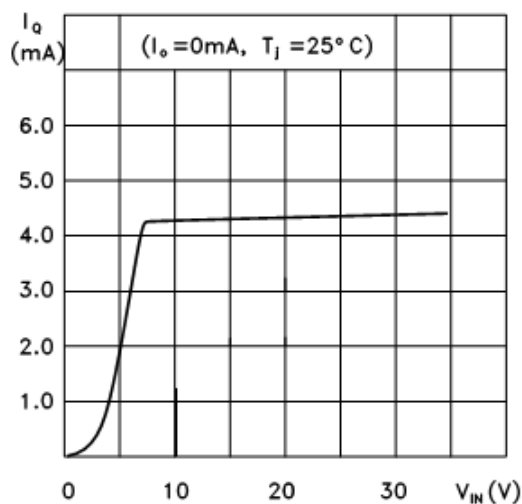
78L05/12/24 Thermal Shutdown



78L00 Series Short Circuit Output Current



78L05 Quiescent Current vs Input Voltage



PD-TA

