



TIGER ELECTRONIC CO.,LTD

TO-92 Encapsulate Three-terminal Voltage Regulator

LM78L05 Three-terminal positive voltage regulator

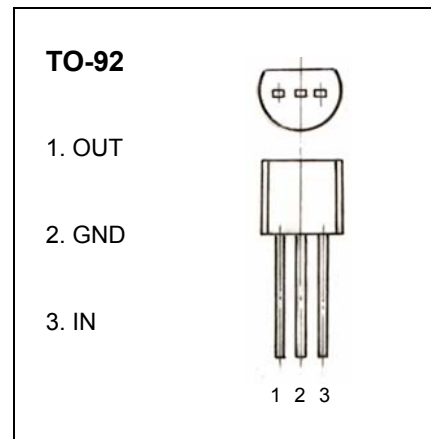
FEATURES

Maximum Output current I_o : 0.1 A

Output voltage V_o : 5 V

Continuous total dissipation

P_D : 0.625W ($T_a=25^\circ\text{C}$)



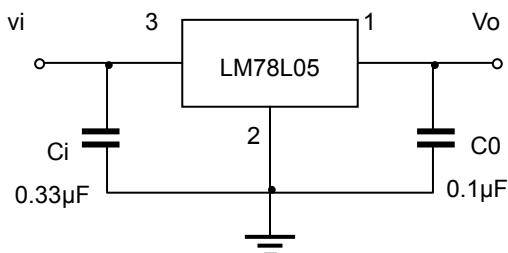
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

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

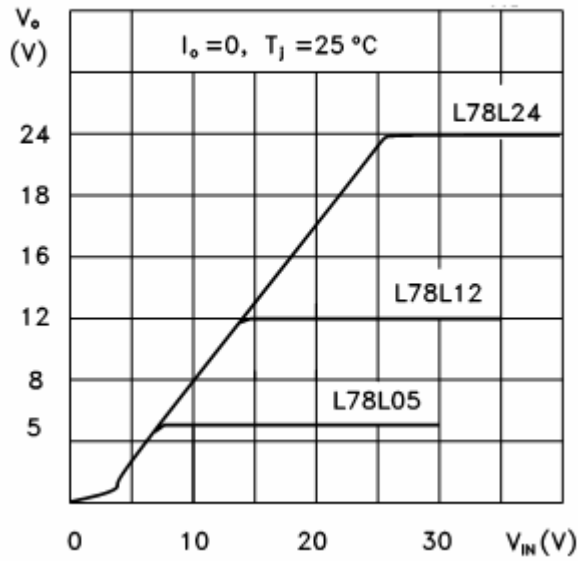


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

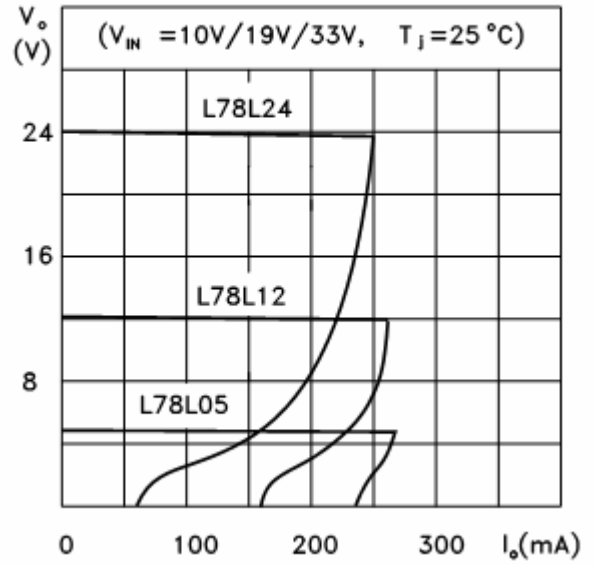
Typical Characteristics

LM78LXX

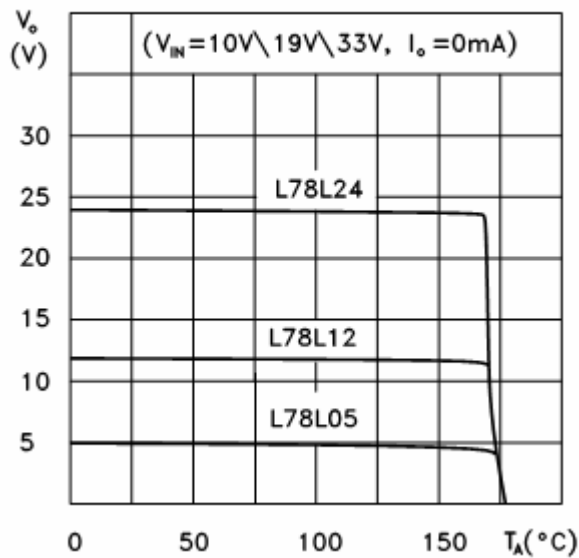
L78L05/12/24 Output Characteristics



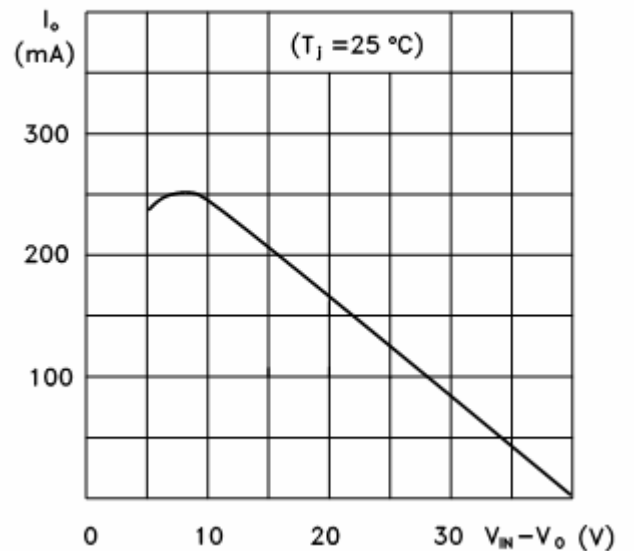
L78L05/12/24 Load Characteristics



L78L05/12/24 Thermal Shutdown



L78L00 Series Short Circuit Output Current



L78L05 Quiescent Current vs Input Voltage

