



## TO-92 Encapsulate Three-terminal Voltage Regulator

**LM78L15** Three-terminal positive voltage regulator

**FEATURES**

**Maximum Output current**

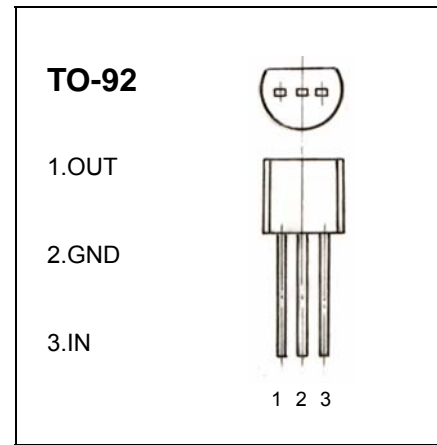
$I_{OM}$ : 0.1 A

**Output voltage**

$V_O$ : 15 V

**Continuous total dissipation**

$P_D$ : 0.625 W



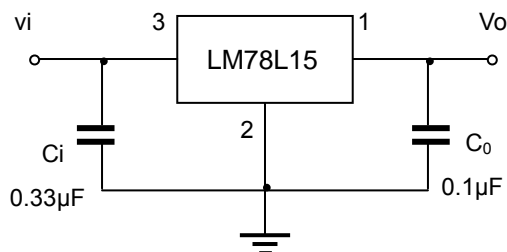
**ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)**

Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	35	V
Operating Junction Temperature Range	$T_{OPR}$	0-+125	°C
Storage Temperature Range	$T_{STG}$	-55-+150	°C

**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i=23V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$ , unless otherwise specified)**

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	$V_o$	$25^\circ C$	14.4	15	15.6	V
		$17.5V \leq V_i \leq 30V, I_o=1mA-40mA$	14.25	15	15.75	V
		$V_i=23V, I_o=1mA-70mA$	14.25	15	15.75	V
Load Regulation	$\Delta V_o$	$I_o=1mA-100mA, V_i=23V$	$25^\circ C$	25	150	mV
		$I_o=1mA-40mA, V_i=23V$	$25^\circ C$	15	75	mV
Line regulation	$\Delta V_o$	$17.5V \leq V_i \leq 30V, I_o=40mA$	$25^\circ C$	65	300	mV
		$19V \leq V_i \leq 30V, I_o=40mA$	$25^\circ C$	58	250	mV
Quiescent Current	$I_q$		$25^\circ C$	4.6	6.5	mA
Quiescent Current Change	$\Delta I_q$	$19V \leq V_i \leq 30V, I_o=40mA$	$0-125^\circ C$		1.5	mA
	$\Delta I_q$	$1mA \leq I_o \leq 40mA, V_i=23V$	$0-125^\circ C$		0.1	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100KHz$	$25^\circ C$	82		$\mu V$
Ripple Rejection	RR	$18.5V \leq V_i \leq 28.5V, f=120Hz$	$0-125^\circ C$	34	39	dB
Dropout Voltage	$V_d$		$25^\circ C$	1.7		V

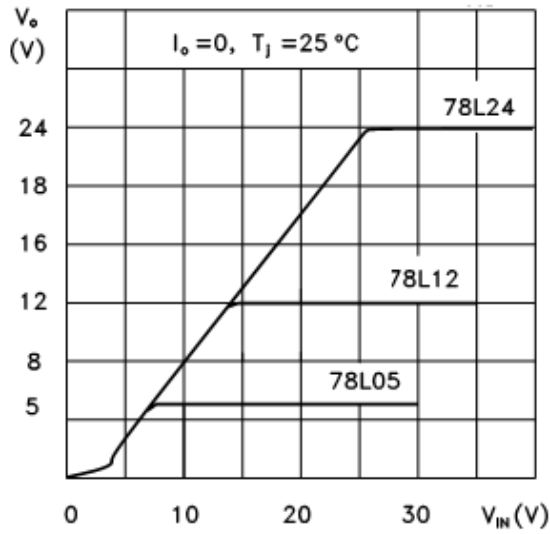
**TYPICAL APPLICATION**



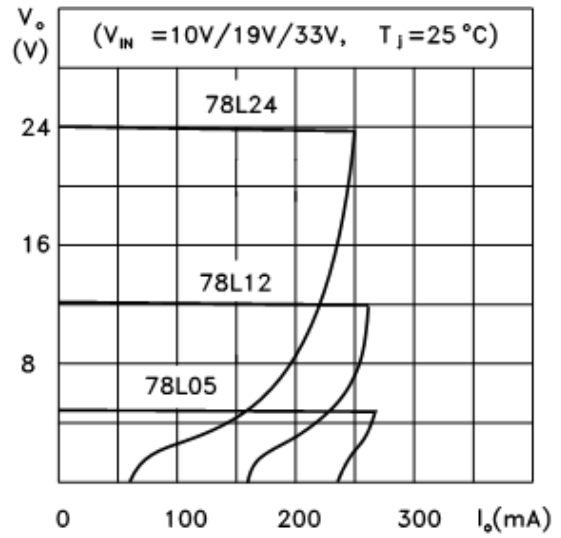
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

## Typical Characteristics

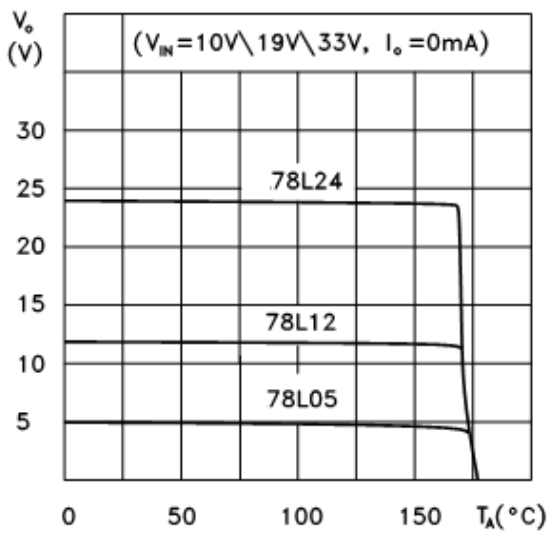
78L05/12/24 Output Characteristics



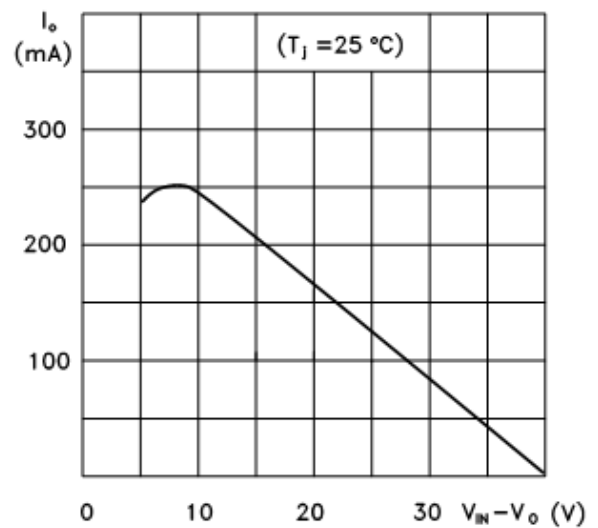
78L05/12/24 Load Characteristics



78L05/12/24 Thermal Shutdown



78L00 Series Short Circuit Output Current



78L05 Quiescent Current vs Input Voltage

