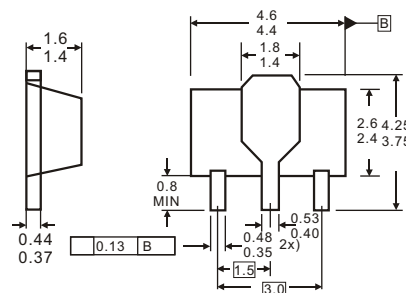


- 1.OUT
- 2.GND
- 3.IN

### SOT-89



Dimensions in inches and (millimeters)

## Features

- ◇ **Maximum Output current**  
 $I_{OM}: 0.1\text{ A}$
- ◇ **Output voltage**  
 $V_O: 15\text{ V}$
- ◇ **Continuous total dissipation**  
 $P_D: 0.50\text{ W}$

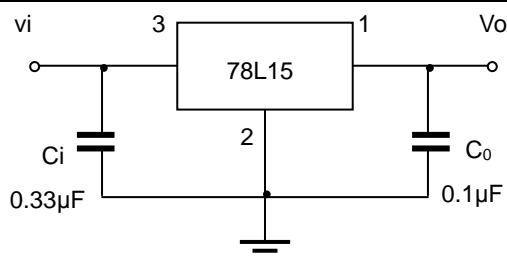
### ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

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 ( $V_i=23\text{V}, I_o=40\text{mA}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$ , unless otherwise specified)

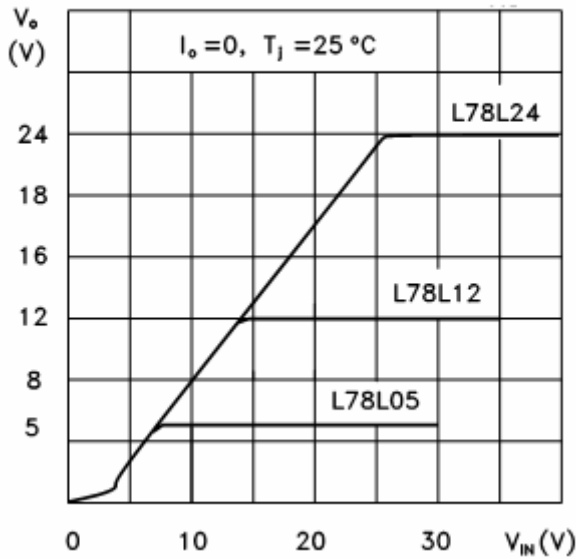
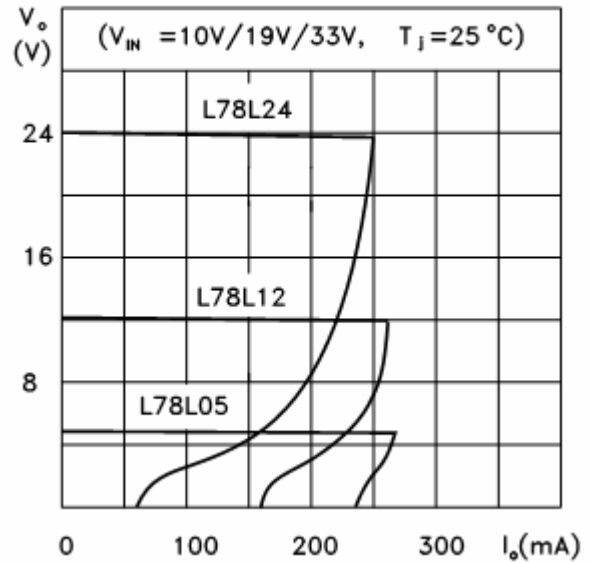
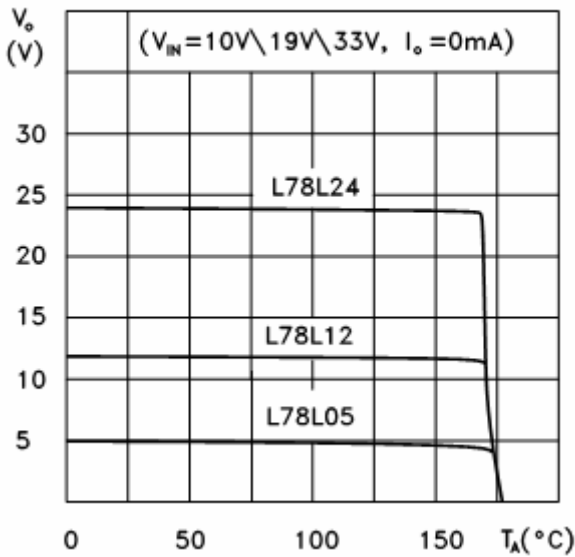
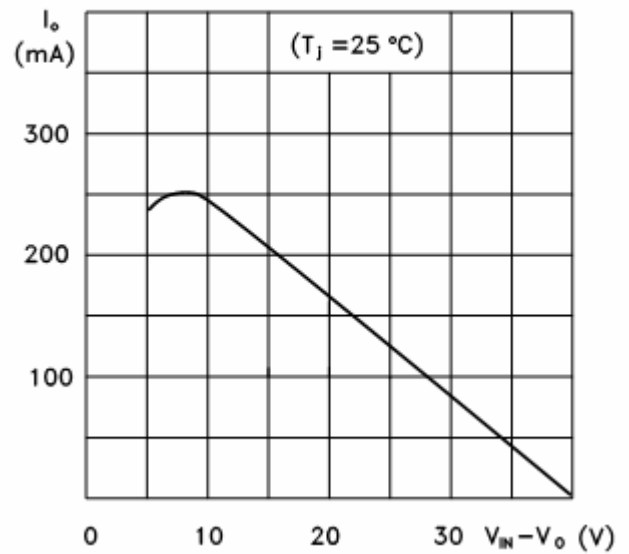
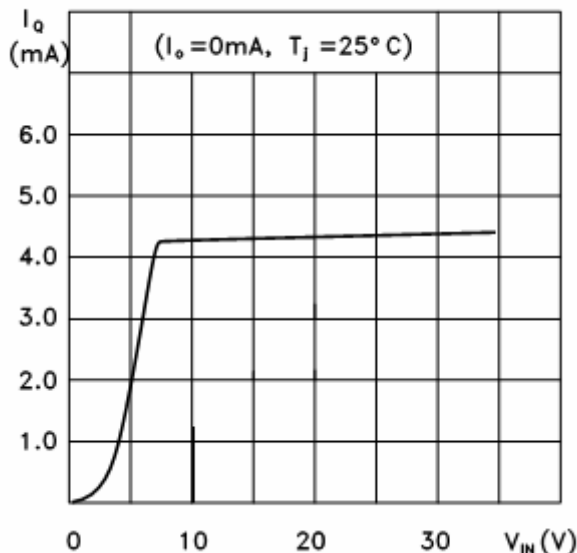
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT	
Output voltage	$V_o$	$25^\circ\text{C}$	14.4	15	15.6	V	
		$17.5\text{V} \leq V_i \leq 30\text{V}, I_o=1\text{mA}-40\text{mA}$	0-125°C	14.25	15	15.75	V
		$V_i=23\text{V}, I_o=1\text{mA}-70\text{mA}$		14.25	15	15.75	V
Load Regulation	$\Delta V_o$	$I_o=1\text{mA}-100\text{mA},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

**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**

**Power dissipation vs ambient temperature**
