

## SOT-23 Plastic-Encapsulate Voltage Regulators

### 78L15 Three-terminal positive voltage regulator

#### FEATURES

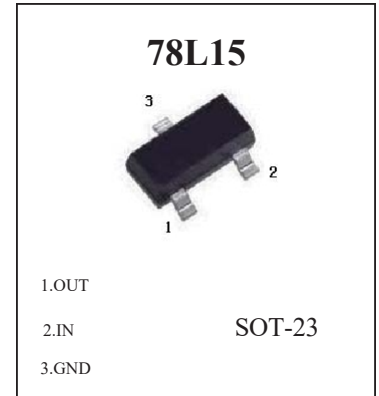
Maximum Output current  $I_O$ : 0.1 A

Output voltage  $V_O$ : 15 V

Continuous total dissipation  $P_D$ : 0.35 W ( $T_a = 25^\circ\text{C}$ )

#### ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies)

Parameter	Symbol	Value	Unit
Input Voltage	$V_I$	30	V
Operating Junction Temperature Range	$T_{OPR}$	0-150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65-150	$^\circ\text{C}$

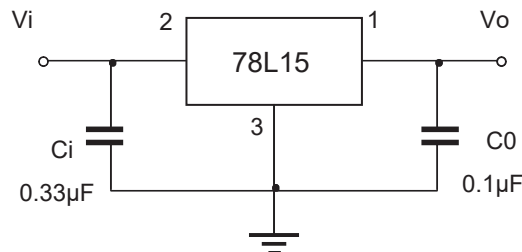


#### ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i=23\text{V}, I_o=40\text{mA}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$ , unless otherwise specified)

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

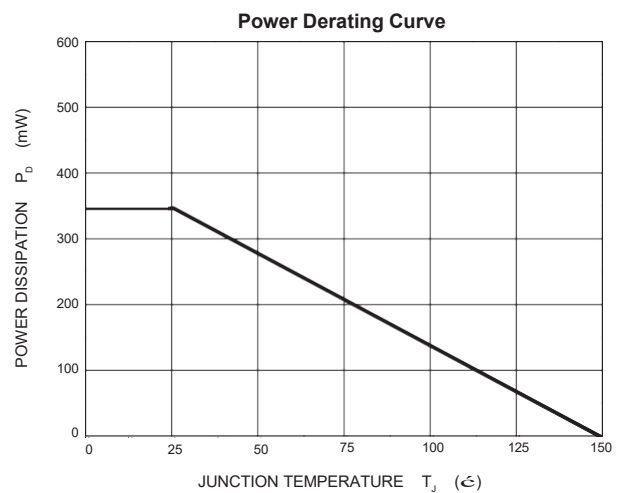
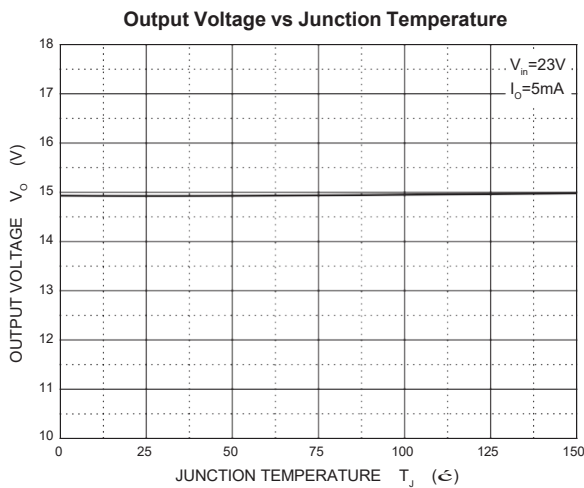
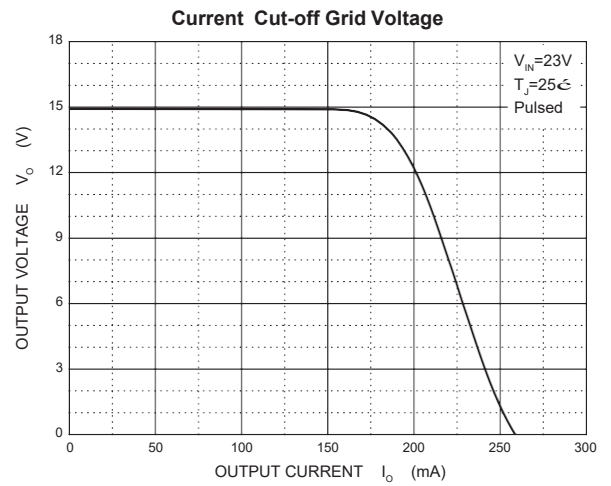
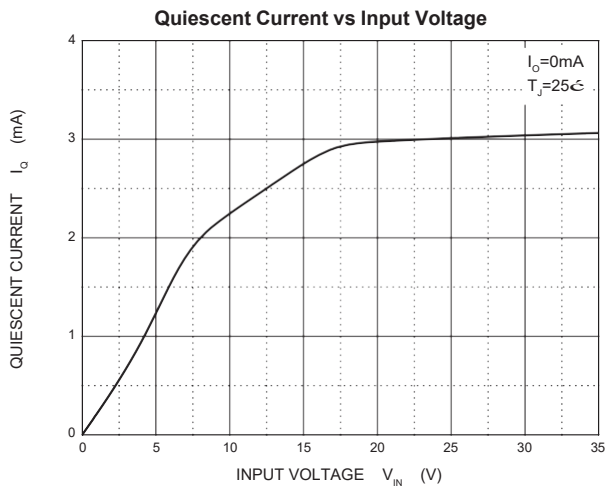
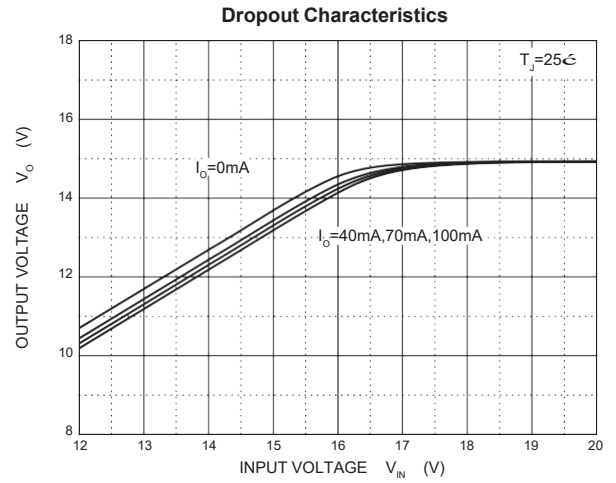
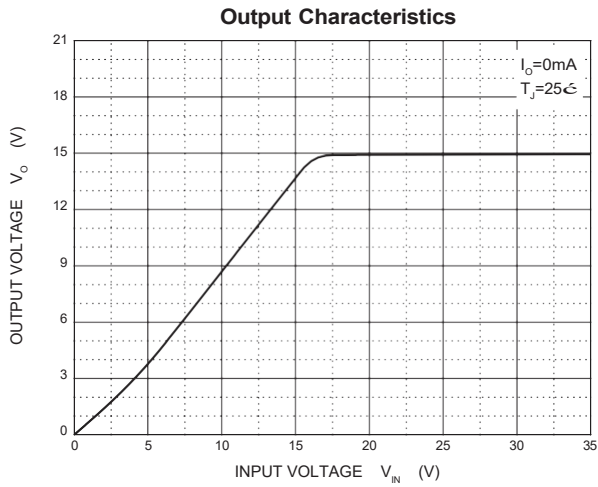
\* Pulse test.

#### TYPICAL APPLICATION



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

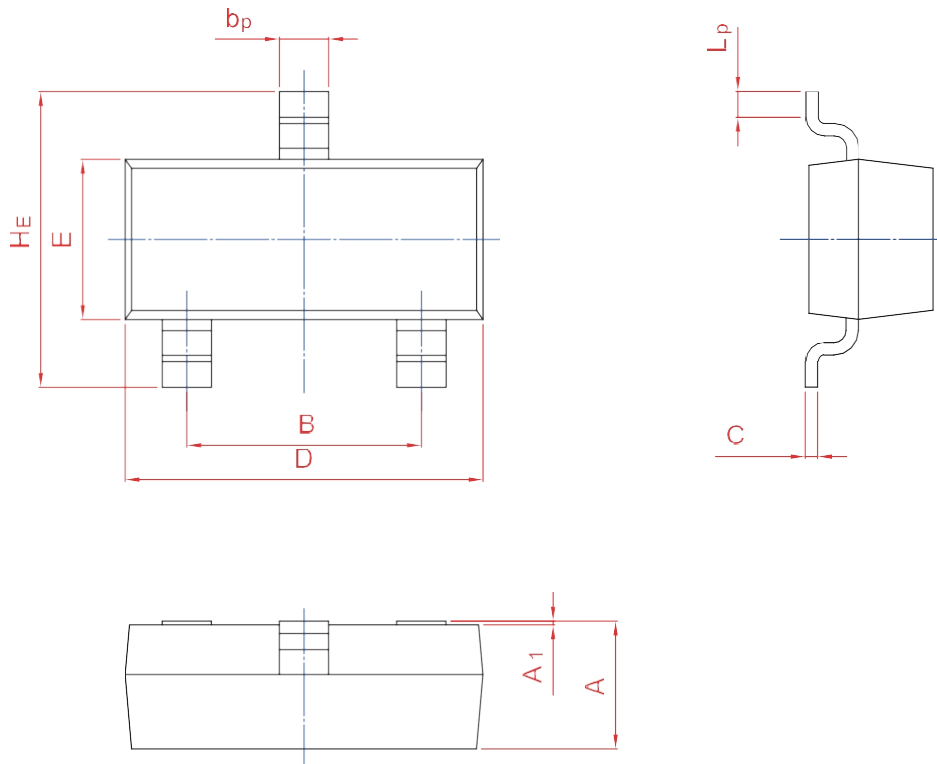
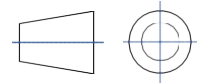
# Typical Characteristics



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b <sub>p</sub>	C	D	E	H <sub>E</sub>	A <sub>1</sub>	L <sub>p</sub>
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20