

SOT-23 Plastic-Encapsulate Voltage Regulators

78L12 Three-terminal positive voltage regulator

FEATURES

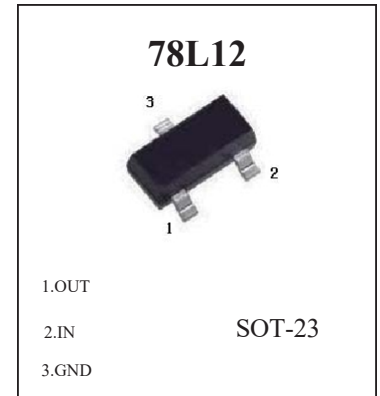
Maximum Output current I_O : 0.1 A

Output voltage V_O : 12 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	$^\circ\text{C}$

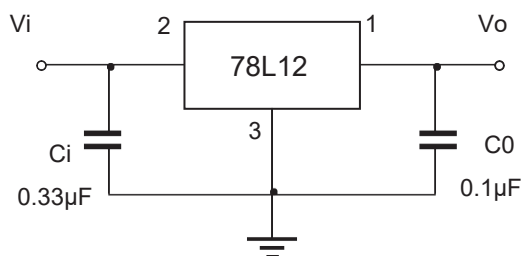


ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=19\text{V}$, $I_o=40\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output voltage	V_o	25°C	11.5	12	12.5	V	
		0-125 $^\circ\text{C}$	$14\text{V} \leq V_i \leq 27\text{V}$, $I_o=1\text{mA}-40\text{mA}$	1.4	12	12.6	V
			$I_o=1\text{mA}-70\text{mA}$	1.4	12	12.6	V
Load Regulation	ξV_o	$I_o=1\text{mA}-100\text{mA}$, 25°C		22	1	mV	
		$I_o=1\text{mA}-40\text{mA}$, 25°C		13	50	mV	
Line regulation	ξV_o	$14.5\text{V} \leq V_i \leq 27\text{V}$, 25°C		55	2	mV	
		$16\text{V} \leq V_i \leq 27\text{V}$, 25°C		49	200	mV	
Quiescent Current	I_q	25°C		4.3	.5	mA	
Quiescent Current Change	ξI_q	$16\text{V} \leq V_i \leq 27\text{V}$, 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		70		$\mu\text{V}/V_o$	
Ripple Rejection	RR	$15\text{V} \leq V_i \leq 25\text{V}$, $f=120\text{Hz}$, 0-125 $^\circ\text{C}$	37	42		dB	
Dropout Voltage	V_d	25°C		1.7		V	

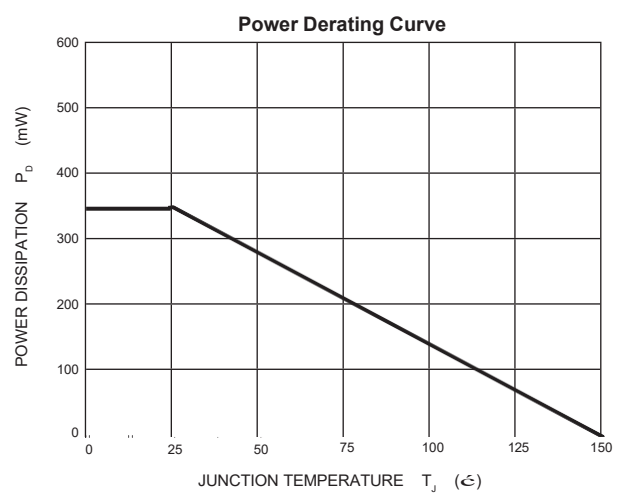
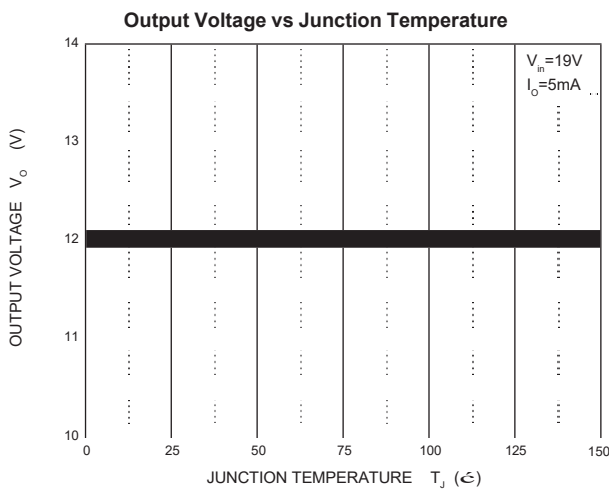
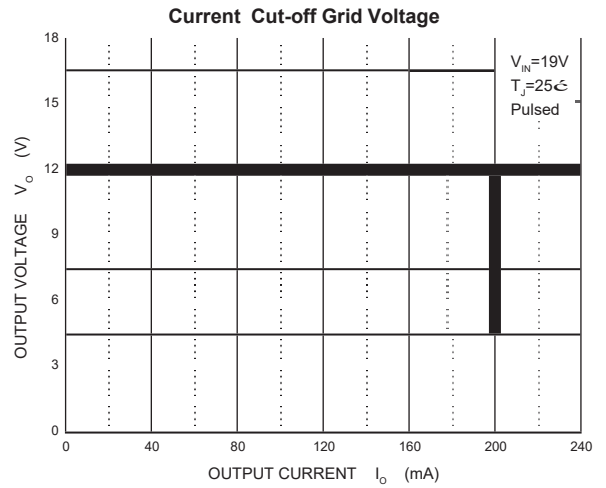
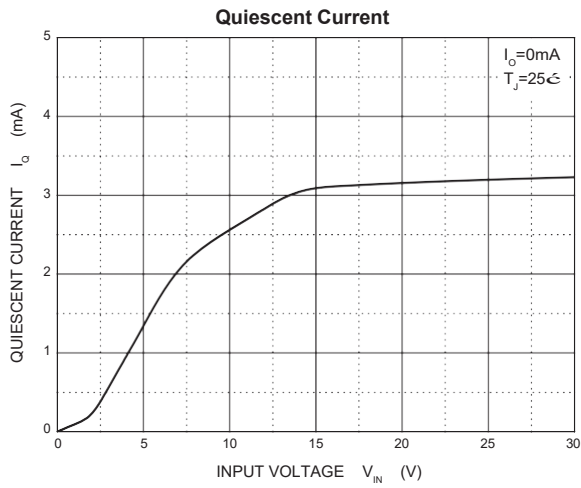
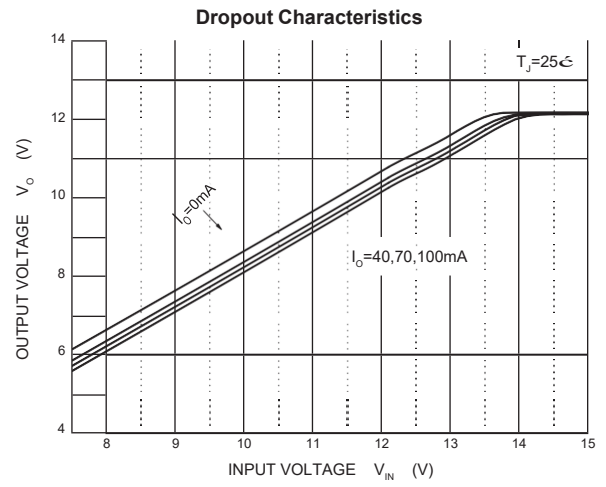
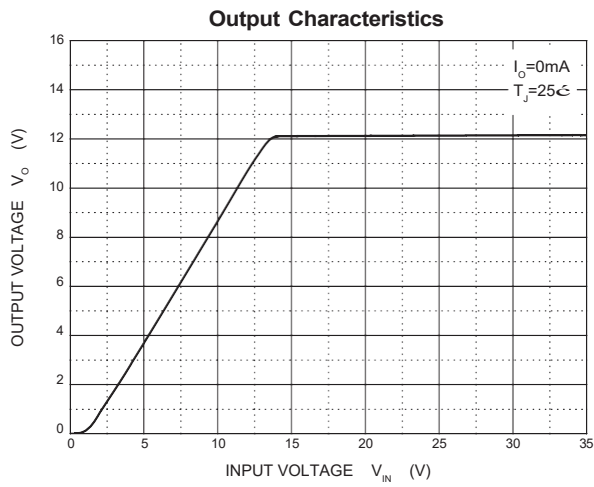
* Pulse test.

TYPICAL APPLICATION



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

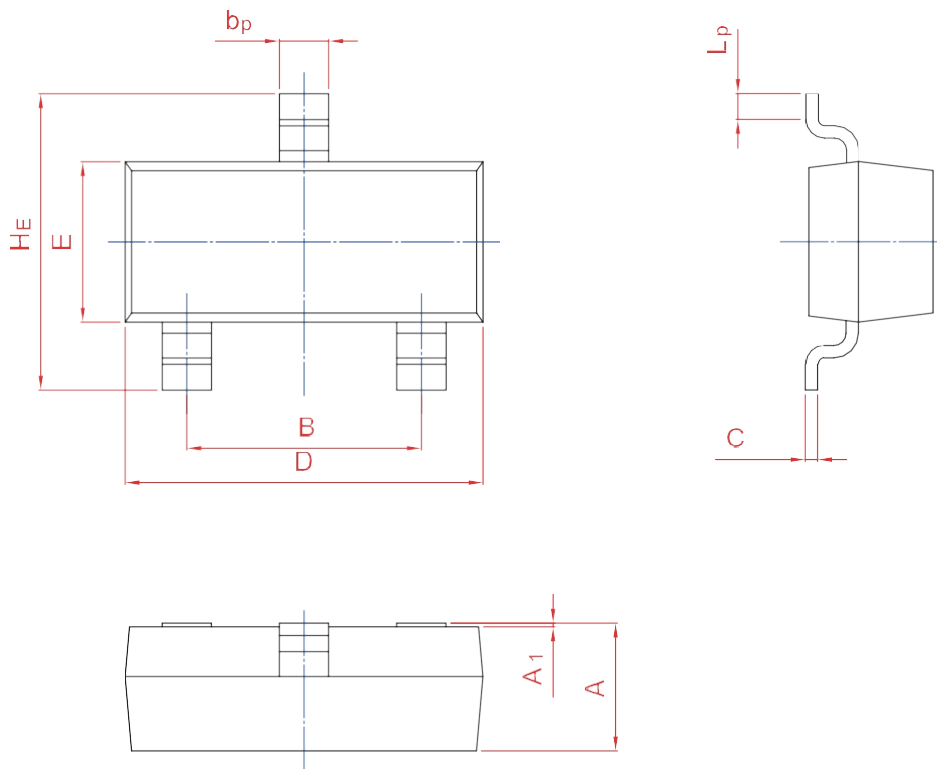
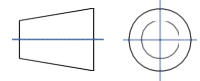
Typical Characteristics



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



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