

Fixed Voltage Regulator

Primary Characteristics		
Parameter	Value	Unit
Output voltage	3.135 ~ 3.465	V
Maximum output current	1.5	mA

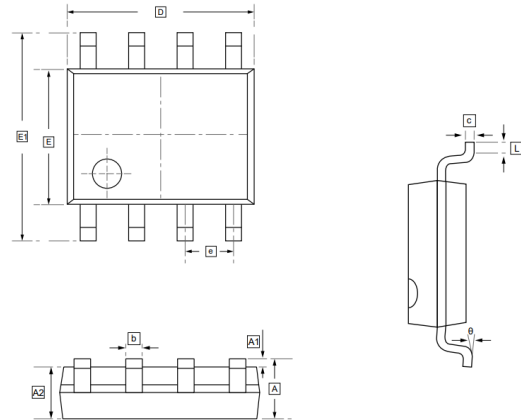
Description

The L78L33A fixed voltage monolithic integrated circuit voltage regulator is suitable for applications that require supply up to 100mA.

Features

- Maximum output current of 100mA
- Output voltage of 3.3V
- Thermal overload protection
- Short circuit current limiting

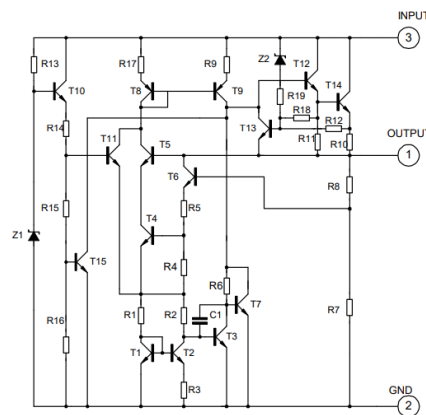
Case Dimensions



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Symbol	A	A1	A2	b	c	D	E	E1	e	L	θ
Min	1.350	0.000	1.350	0.330	0.170	4.700	3.800	5.800	1.270	0.400	0°
Max	1.750	0.100	1.550	0.510	0.250	5.100	4.000	6.200	BSC	1.270	8°

Block Diagram



Absolute Maximum Ratings

Characteristics	Symbol	Value	Units
Input Voltage	V_i	35	V
Power Dissipation	P_d	400	mW
Junction Temperature Range	T_{OPR}	-20 ~ +120	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics

($V_i=8.3V$, $I_o=80mA$, $0^{\circ}C<T_J<25^{\circ}C$, $C_1=0.33\mu F$, $C_o=1\mu F$, unless otherwise specified)¹⁾

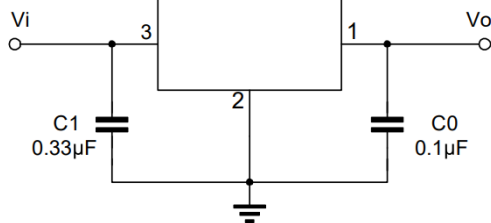
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V_o	$T_J=25^{\circ}C$	3.168	3.3	3.432	V
		$5.3V\leq V_i\leq 20V$, $I_o=1mA\sim 80mA$	3.135	-	3.465	
		$I_o=1mA\sim 140mA$	3.135	-	3.465	V ²⁾
Load Regulation	ΔV_o	$T_J=25^{\circ}C$, $I_o=1mA\sim 200mA$	-	10	60	mV
		$T_J=25^{\circ}C$, $I_o=1mA\sim 80mA$	-	7	30	
Line Regulation	ΔV_o	$5.3V\leq V_i\leq 20V$, $T_J=25^{\circ}C$	-	7	150	mV
		$6.3V\leq V_i\leq 20V$, $T_J=25^{\circ}C$	-	4	100	
Quiescent Current	I_q	$T_J=25^{\circ}C$	-	2	5.5	mA
Quiescent Current Change	ΔI_q	$6.3V\leq V_i\leq 20V$	-	-	1.5	mA
		$1mA\leq I_o\leq 80mA$	-	-	0.1	
Output Noise Voltage	V_N	$10Hz\leq f\leq 100kHz$, $T_J=25^{\circ}C$	-	40	-	μV
Temperature Coefficient of V_o	$\Delta V_o/\Delta T$	$I_o=5mA$	-	0.45	-	mV/ $^{\circ}C$
Ripple Rejection	RR	$6.3V\leq V_i\leq 16.3V$, $f=120Hz$, $T_J=25^{\circ}C$	40	49	-	dB
Dropout	V_d	-	-	1.7	-	

Notes:

¹⁾ The Maximum steady state usable output current and input voltage are very dependent on the heating sinking and/or lead temperature length of the package. The data above represent pulse test conditions with junction temperatures as indicated at the initiation of test.

²⁾ Power dissipation $<0.75W$.

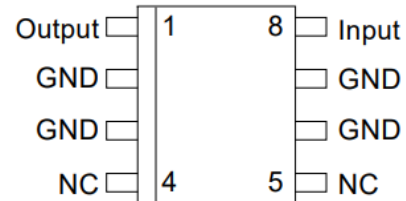
Application circuits



Notes:

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

Pinning Information



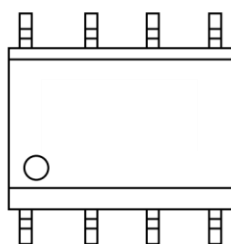
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Ordering information

Order Code	Marking	Package	Base QTY	Delivery Mode
UMW L78L33A	L78L33A	SOP-8	2500	Tape and reel

Package

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