

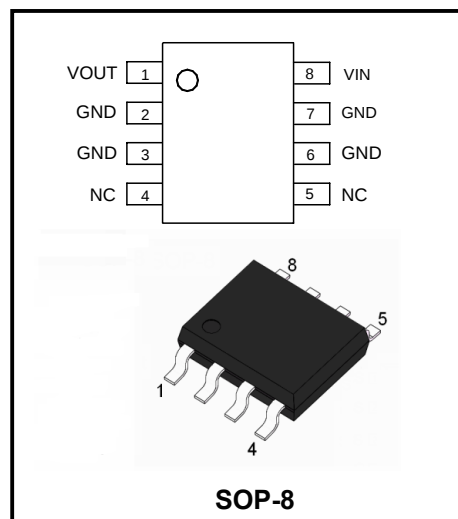
3-terminal 3.3V 0.1A positive voltage regulator

Description

The 78L33S of fixed voltage monolithic integrated circuit voltage regulators are suitable for application that required supply current up to 100mA.

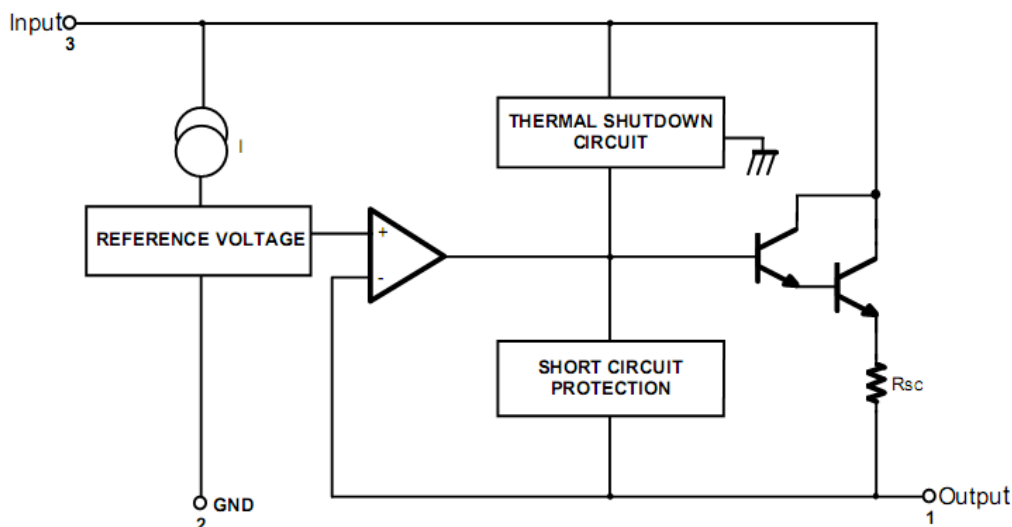
Features

- ◆ Maximum Output Current of 100mA
- ◆ Output Voltage of 3.3V
- ◆ Thermal Overload Protection
- ◆ Short Circuit Current Limiting
- ◆ Output Voltage Offered in $\pm 5\%$ Tolerance



Marking Code	
78L33S	YFW 78L33S

Internal Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input voltage	V_{IN}	20	V
Output current	I_{OUT}	100	mA
Power dissipation	P_D	350	mW
Operating temperature range	T_{OPR}	0 ~ +125	$^{\circ}C$
Storage temperature range	T_{STG}	-55 ~ +150	$^{\circ}C$

Electrical Characteristics

($V_I = 8.3V$, $I_O = 40mA$, $0^\circ C \leq T_j \leq 125^\circ C$, $C_I = 0.33\mu F$, $C_O = 0.1\mu F$, unless otherwise specified. (Note)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage	V_O	$T_j = 25^\circ C$	3.168	3.3	3.432	V
		$V_I = 5.3 \sim 20V$ $I_O = 1 \sim 100mA$	3.135	3.3	3.465	
Line regulation(Note)	ΔV_O	$V_I = 5.3 \sim 20V$, $T_j = 25^\circ C$			150	mV
		$V_I = 6.3 \sim 20V$, $T_j = 25^\circ C$			100	
Load regulation(Note)	ΔV_O	$I_O = 1 \sim 100mA$, $T_j = 25^\circ C$			60	mV
		$I_O = 1 \sim 40mA$, $T_j = 25^\circ C$			30	
Quiescent current	I_Q	$T_j = 25^\circ C$			6	mA
Quiescent current change	ΔI_Q	$I_O = 1 \sim 40mA$			0.1	mA
		$I_O = 40mA$, $V_I = 6.3 \sim 20V$			1.5	
Output voltage drift	$\Delta V / \Delta T$	$I_O = 5mA$, $T_j = 0$ to $+125$		0.45		mV/ $^\circ C$
Output noise voltage	V_N	$10Hz \leq f \leq 100KHz$		40		μV
Ripple rejection	RR	$f = 120Hz$, $V_I = 6.3 - 1V$, $= 25^\circ C$	40			dB
Dropout voltage	V_d			1.7		V

Notes: The maximum steady state usable output current and input voltage are very dependent on the heat Sinking and/or lead length of the package. The data above represent pulse test conditions with junction temperature as indicated at the initiation of tests.

Typical Characteristics

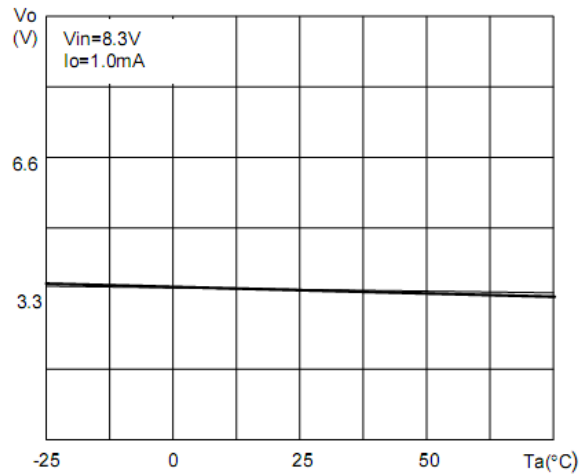


Fig1 .Output Voltage vs AmbientTemperature

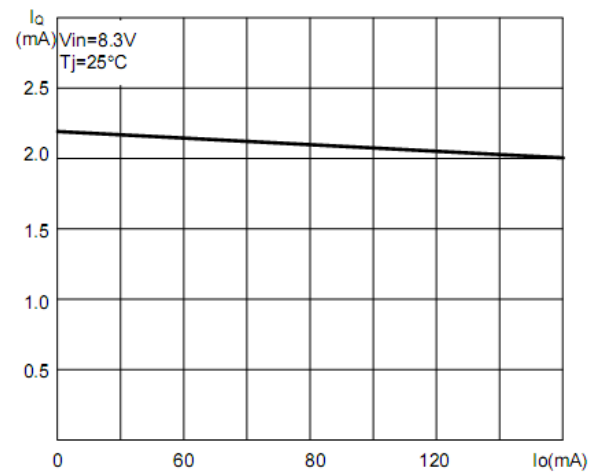


Figure 2. Quiescent Current vs Output Current

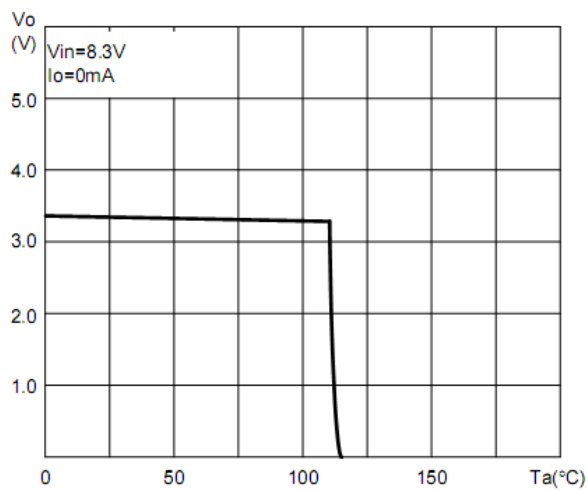


Figure 3 : Load Characteristics

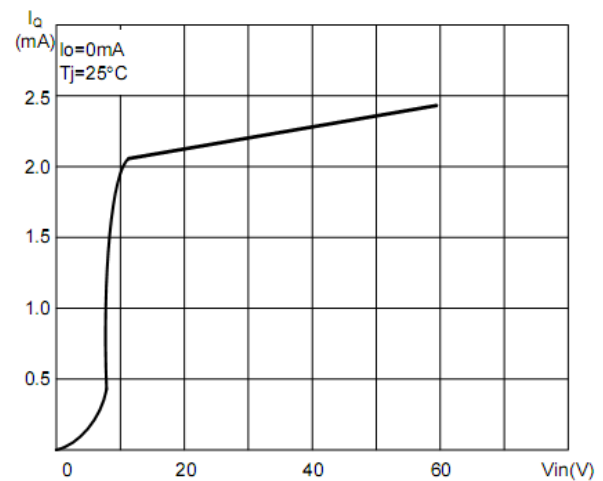


Figure 4 : Quiescent Current vs Input Voltage

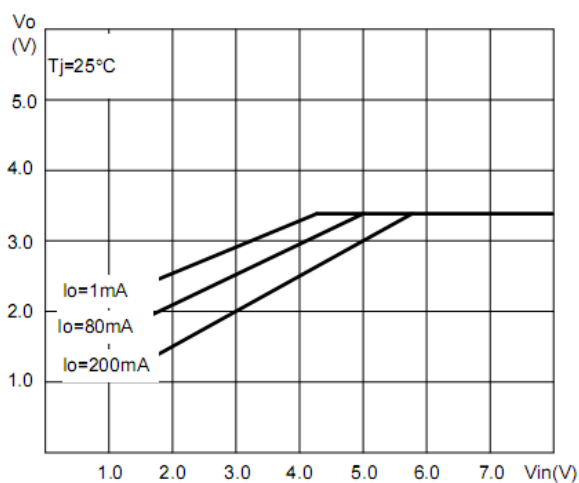


Figure5 : Thermal Shutdown

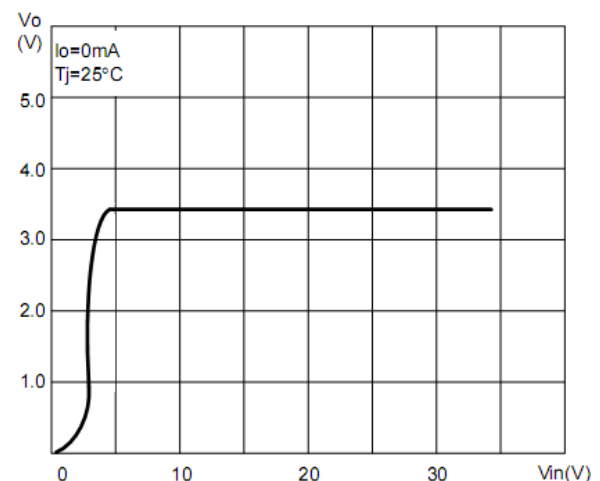
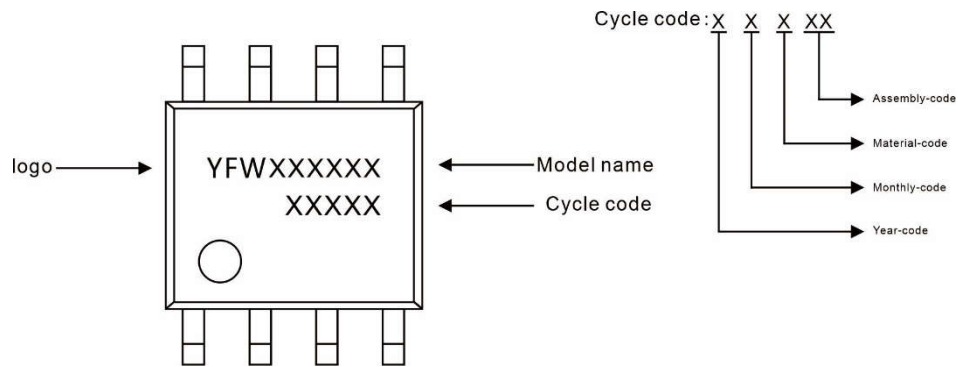


Figure 6 : Output Characteristics

Marking Diagram



Ordering information

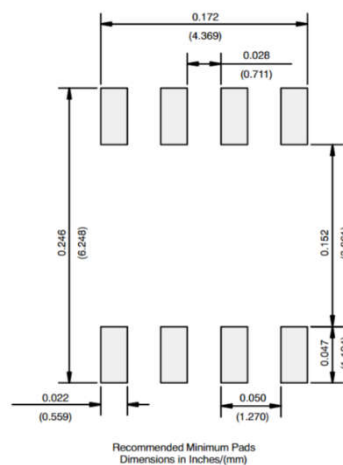
Package	Packing Description	Packing Quantity
SOP-8	Tape/Reel, 13" reel	2500PCS/Reel 25000PCS/Carton

Package Dimensions

SOP-8

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.35	1.75	0.053	0.069
A1	0.10	0.25	0.004	0.010
A2	1.35	1.50	0.053	0.059
b	0.35	0.55	0.014	0.022
c	0.15	0.25	0.006	0.010
D	4.80	5.00	0.189	0.197
D1	3.10	3.50	0.122	0.138
E	5.80	6.20	0.228	0.244
E1	3.80	4.00	0.150	0.157
E2	2.20	2.60	0.087	0.102
e	1.27 (BSC)		0.050 (BSC)	
L	0.40	1.27	0.016	0.050
θ	0°	8°	0°	8°

The recommended mounting pad size



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