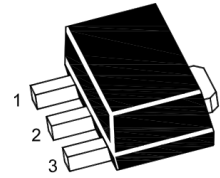
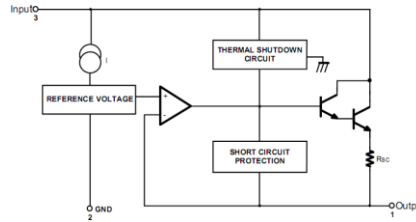


78L33-100mA

3-terminal 5V 0.1A positive voltage regulator

FEATURES

- 1. Maximum output current of 100mA
- 2. Output voltage of 3.3V
- 3. Thermal overload protection
- 4. Short circuit current limiting
- 5. Output Voltage Offered in $\pm 5\%$ Tolerance



1. Output 2.Gnd 3. Input

Absolute Maximum Ratings (Operating temperature range applies unless otherwise specified, $T_{amb}=25\text{ }^{\circ}\text{C}$)

CHARACTERISTICS	SYMBOL	Value	UNITS
Input Voltage	V_{IN}	20	V
Operating Temperature Range	T_{opr}	0~125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55~150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($V_i=8.3\text{V}$, $I_o=40\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, $0^{\circ}\text{C}<T_j<125^{\circ}\text{C}$ Unless otherwise specified)

Parameter Name	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_j=25^{\circ}\text{C}$	3.168	3.3	3.432	V
		$5.3\text{V}\leq V_i\leq 20\text{V}$, $I_o=1\text{mA}\sim 100\text{mA}$	3.135		3.465	V
Load Regulation	ΔV_o	$T_j=25^{\circ}\text{C}$; $I_o=1\text{mA}\sim 100\text{mA}$			60	mV
		$T_j=25^{\circ}\text{C}$; $I_o=1\text{mA}\sim 40\text{mA}$			30	mV
Line Regulation	ΔV_o	$T_j=25^{\circ}\text{C}$; $5.3\text{V}\leq V_i\leq 20\text{V}$			150	mV
		$T_j=25^{\circ}\text{C}$; $6.3\text{V}\leq V_i\leq 20\text{V}$			100	mV
Quiescent Current	I_q	$T_j=25^{\circ}\text{C}$; $I_o=0\text{mA}$			6	mA
Quiescent Current Change	ΔI_q	$6.3\text{V}\leq V_i\leq 20\text{V}$, $I_o=40\text{mA}$			1.5	mA
		$1\text{mA}\leq I_o\leq 40\text{mA}$			0.1	mA
Output Noise Voltage	V_N	$f=10\text{Hz to } 100\text{kHz}$, $T_a=25^{\circ}\text{C}$		40		μV
Temperature Coefficient of Output Voltage	$\Delta V_o/\Delta T$	$I_o=5\text{mA}$		0.45		$\text{mV}/^{\circ}\text{C}$
Ripple Rejection Ratio	RR	$6.3\text{V}\leq V_i\leq 16\text{V}$; $f=120\text{Hz}$; $T_j=25^{\circ}\text{C}$	40	49		dB
Dropout Voltage	V_d			1.7		V

Typical Characteristics

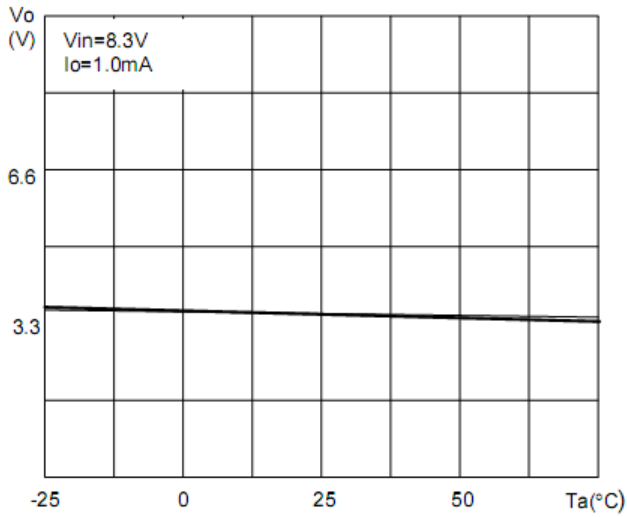


Fig1 .Output Voltage vs AmbientTemperature

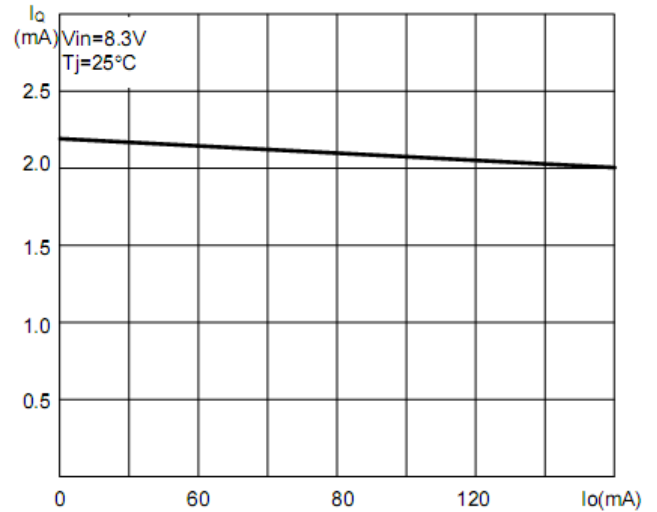


Figure 2. Quiescent Current vs Output Current

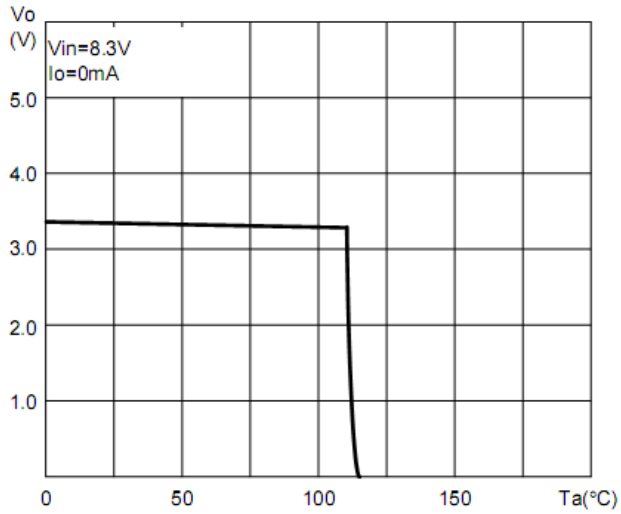


Figure 3 : Load Characteristics

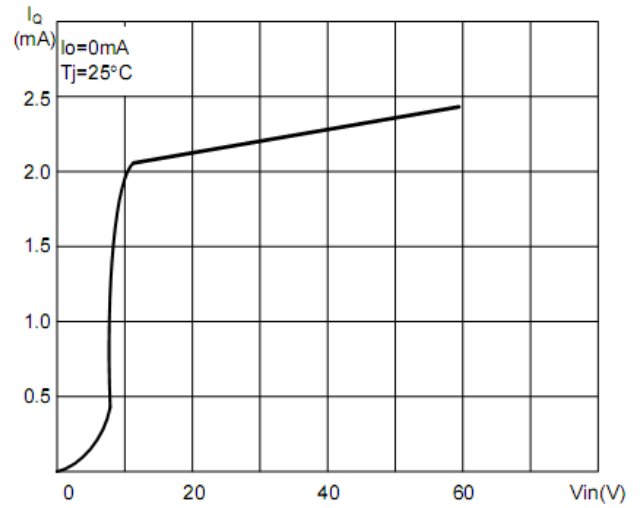


Figure 4 : Quiescent Current vs Input Voltage

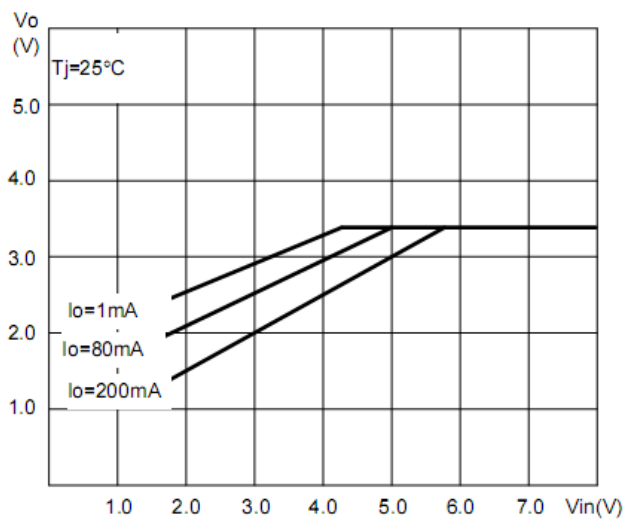


Figure5 : Thermal Shutdown

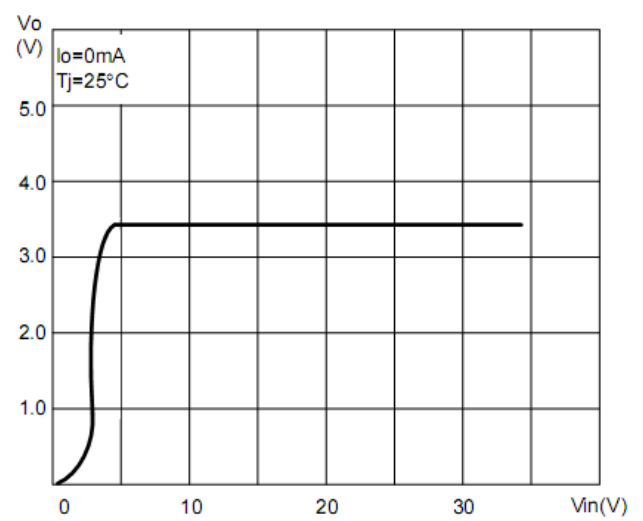


Figure 6 : Output Characteristics