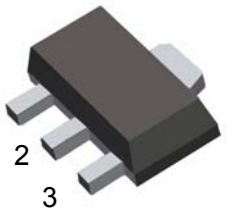
3-Terminal Positive Voltage Regulator

SOT-89

FEATURE

- Maximum output current of 200mA
- Output voltage of 3.3V
- Thermal overload protection
- Short circuit current limiting

1. OUT
2. GND
3. IN



ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

CHARACTERISTICS	SYMBOL	VALUE	UNITS
Input voltage	VIN	30	V
Output Current	IOUT	200	mA
Junction Temperature	TJ	+125	℃
Operating Temperature	TOPR	-20~+120	℃
Storage Temperature Range	TSTG	-40~+150	℃

ELECTRICAL CHARACTERISTICS

(VI=8.3V, Io=80mA, 0<Tj<125°C, C1=0.33μF, Co=0.1μF, unless otherwise specified)(Note 1)

Characteristic	Symbol	Test conditions	MIN	TYP	MAX	UNI
Output Voltage	VO	Tj=25°C	3.168	3.3	3.432	V
		5.3V≤VI≤20V,IO=1mA~80mA	3.135		3.465	V
		IO=1mA~140mA	3.135		3.465	V (note 2)
Load Regulation	ΔVo	Tj=25°C,IO=1mA~200mA		10	60	mV
		Tj=25°C,IO=1mA~80mA		7	30	mV
Line regulation	ΔVo	5.3V≤VI≤20V,Tj=25°C		7	150	mV
		6.3V≤VI≤20V,Tj=25°C		4	100	mV
Quiescent Current	Iq	Tj=25°C		2.0	5.5	mA
Quiescent Current Change	ΔIq	6.3V≤VI≤20V			1.5	mA
	ΔIq	1mA≤IO≤80mA			0.1	mA
Output Noise Voltage	VN	10Hz≤f≤100kHz, Tj=25°C		40		μV
Temperature coefficient of Vo	ΔVo/ΔT	Io=5mA		0.45		mV/°C
Ripple Rejection	RR	6.3V≤VI≤16.3V,f=120Hz,Tj=25°C	40	49		dB
Dropout Voltage	Vd			1.7		V

TYPICAL PERFORMANCE CHARACTERISTICS

Fig.1 78L33 Output Voltage vs Ambient Temperature

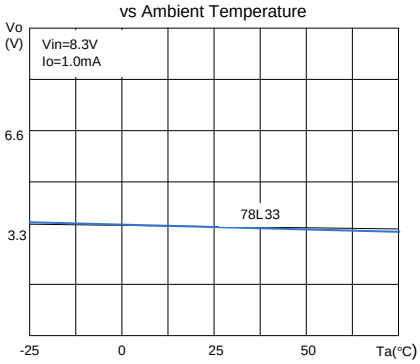


Fig.2 78L33 Quiescent Current vs Output Current

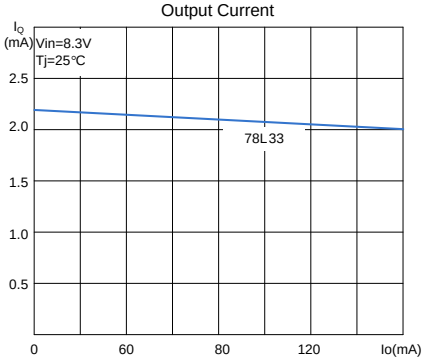


Fig.3 78L33 Quiescent Current vs Input

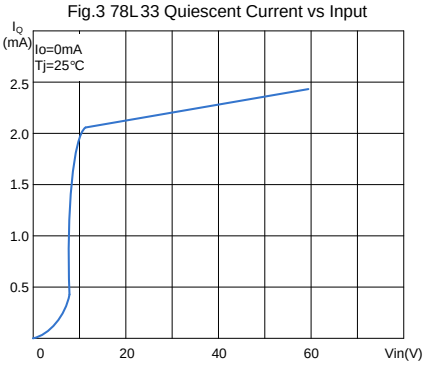


Fig.4 78L33 Thermal Shutdown

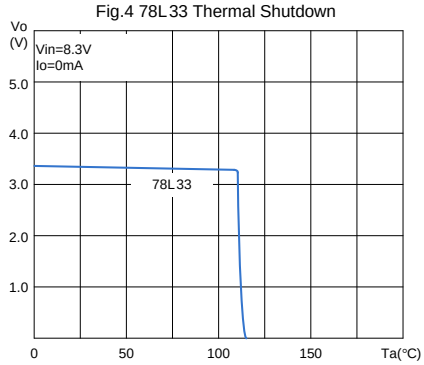


Fig.5 78L33 Output Characteristics

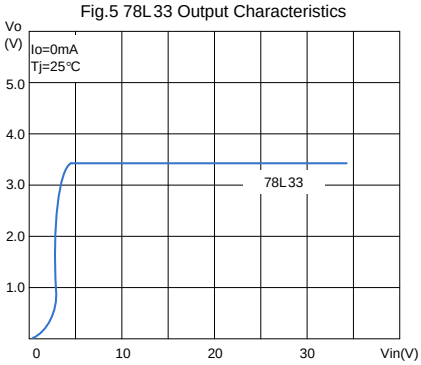
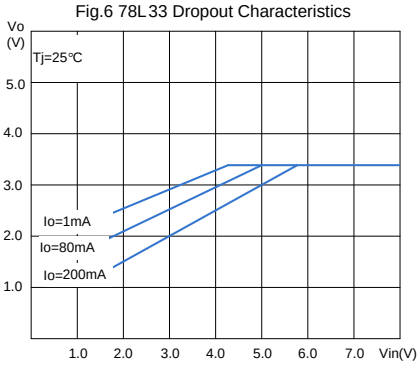
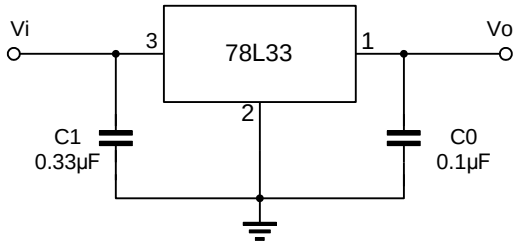


Fig.6 78L33 Dropout Characteristics



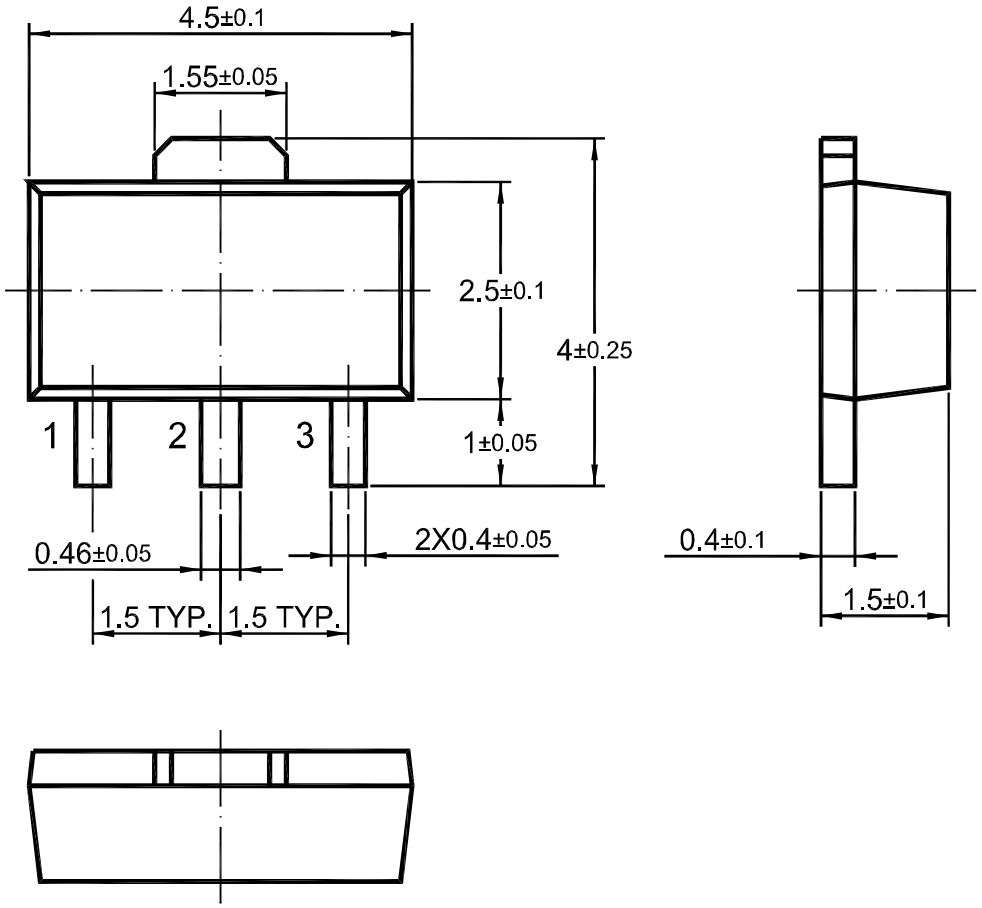
TYPICAL APPLICATION



Note 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 date above respresent pulse test conditions with junction temperatures as indicated at the initiation of test.

Note 2: Power dissipation<PD.

SOT-89 PACKAGE OUTLINE



Dimensions in mm