

Descriptions

CTCO7333HT is low dropout linear regulator in a SOT-89 plastic package

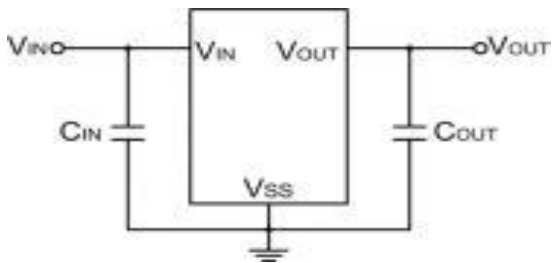
Features

- Low static operating current: 2uA
- Output current: 300mA
- Low pressure difference: 200mV@100mA(VOUT=3.3V)
- High precision: $\pm 2\%$
- High power rejection ratio: 70dB@1kHz
- Low output noise: 90uVRMS (10Hz~100kHz)
- Excellent input linear and output load transient response
- Built-in current limit, short circuit protection
- Overheat protection
- Halogen-free product

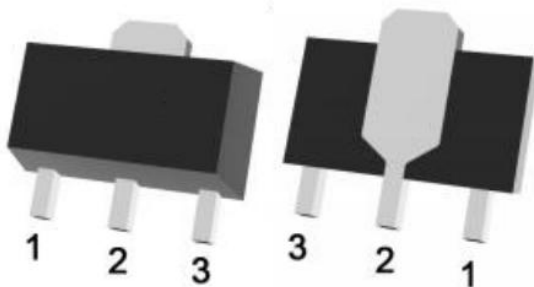
Applications

- Regulated power supply for battery-powered devices
- Regulated power supply for communication equipment
- Stabilized power supply for home appliance toys
- Regulated power supply for mobile phones
- Stabilized power supply for portable medical instruments

Equivalent Circuit



Pinning



PIN1: GND PIN 2: VIN PIN 3: VOUT

Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit
Working Voltage	V _{IN}	-0.3 to 33	V
Output current	I _{OUT}	600	mA
Dissipated power	P _D	0.4	W
Storage temperature	T _{stg}	-40 to +125	°C
Operating temperature	T _A	-40 to +125	°C
Pin welding temperature (10s)	T _{sold}	260	°C
Antistatic class	HBM	2	kV
	MM	200	V

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input voltage	V _{IN}				30	V
Output voltage(1)	V _{OUT(E)}	I _{OUT} =10mA	3.234	3.3	3.366	V
Input/output pressure difference(2)	V _{dif}	I _{OUT} =100mA V _{OUT} =3.3V		200		mV
Static working current	I _{SS}	I _{OUT} =0mA		2	5	uA
Load adjustment rate	ΔV _{load}	V _{IN} =V _{OUT (S)} +1V 1mA≤I _{OUT} ≤300mA		15	50	mV
Linear adjustment rate	ΔV _{OUT} / (ΔV _{IN} *V _{OUT})	I _{OUT} =10mA V _{OUT (S)} +1V≤V _{IN} ≤30V		0.01	0.1	%/V
Output voltage temperature coefficient	ΔV _{OUT} / (ΔT _A *V _{OUT})	I _{OUT} =10mA-40°C≤T _A ≤125°C		50		ppm/°C
Output current	I _{LIM}	V _{OUT} = 0.5 x V _{OUT(Normal)} , V _{IN} = 5V	350			mA
Output short-circuit current	I _{SHORT}	V _{OUT} =V _{SS}		100		mA
Power ripple rejection ratio	PSRR	I _{OUT} =50mA, f=100Hz		75		dB
		I _{OUT} =50mA, f=1kHz		70		
		I _{OUT} =50mA, f=10kHz		55		
		I _{OUT} =50mA, f=100kHz		40		

Electrical Characteristic Curve

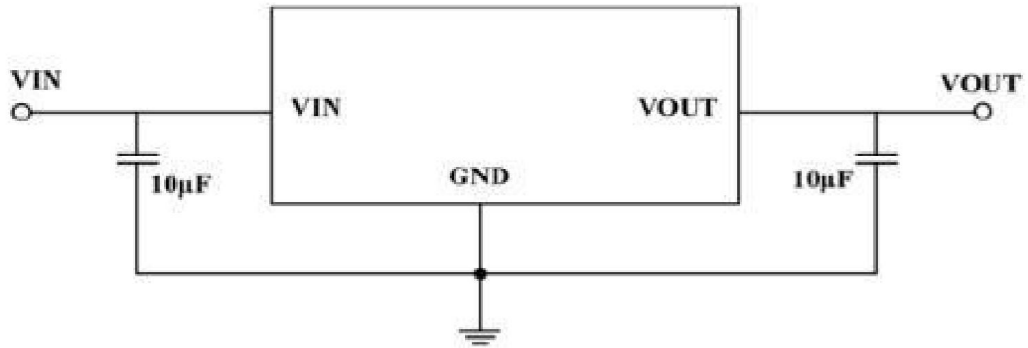
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output noise voltage	VON	BW=10Hz to 100kHz		90		μVRMS
Thermal turn-off temperature	TSD			160		°C
Thermal shutdown hysteresis temperature	ΔTSD			20		°C
Standby current	ISTBY	CE = VSS			0.5	μA
COOUT Self-discharge resistance	RDISCHRG	VIN=5V, VOUT=3.0V, VCE=VSS		150		Ω

(1) VOUT (E) Actual output voltage, VOUT (S) Set the nominal output voltage

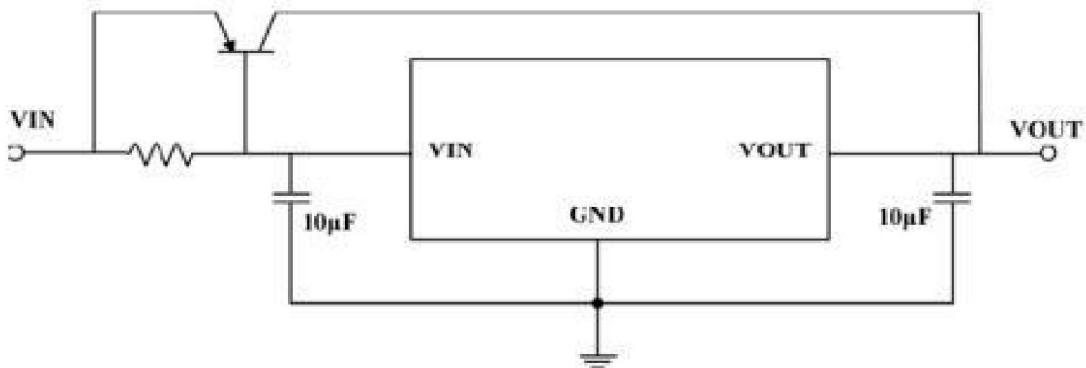
(2) Definition of input and output voltage difference: under fixed load conditions, the output voltage is VOUT, and the input voltage is slowly decreased until the output voltage is reduced to VOUT*98%, the difference between the input voltage and the output voltage.

Typical Application Circuit

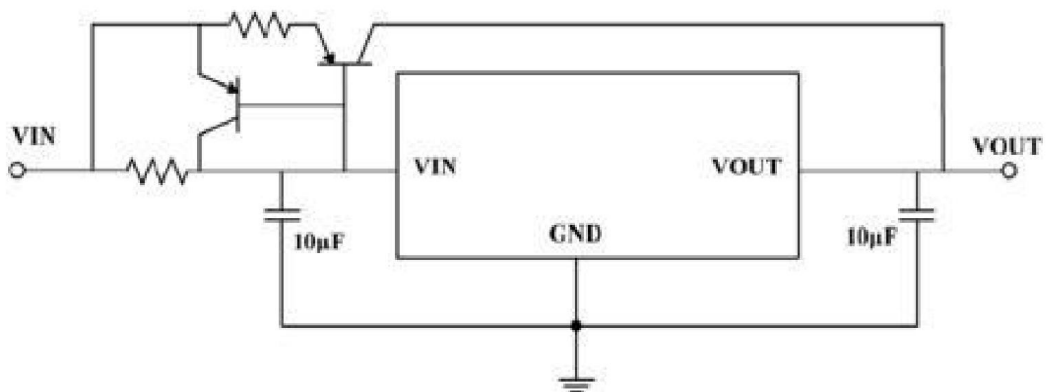
Basic Application



High Output Current Voltage Regulator

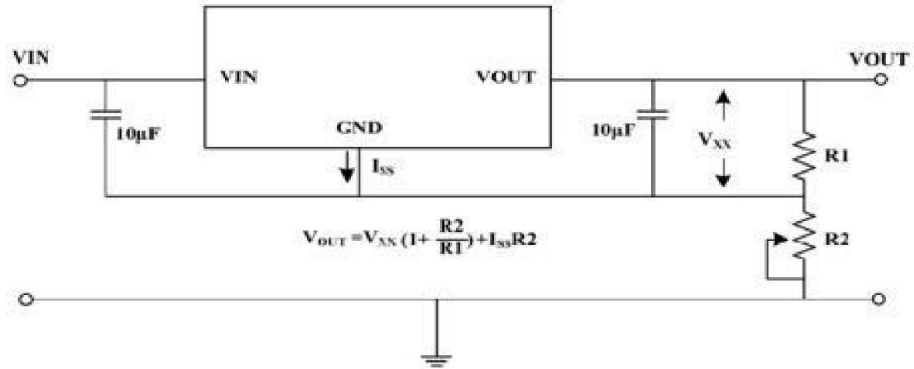


Short-Circuit Protection

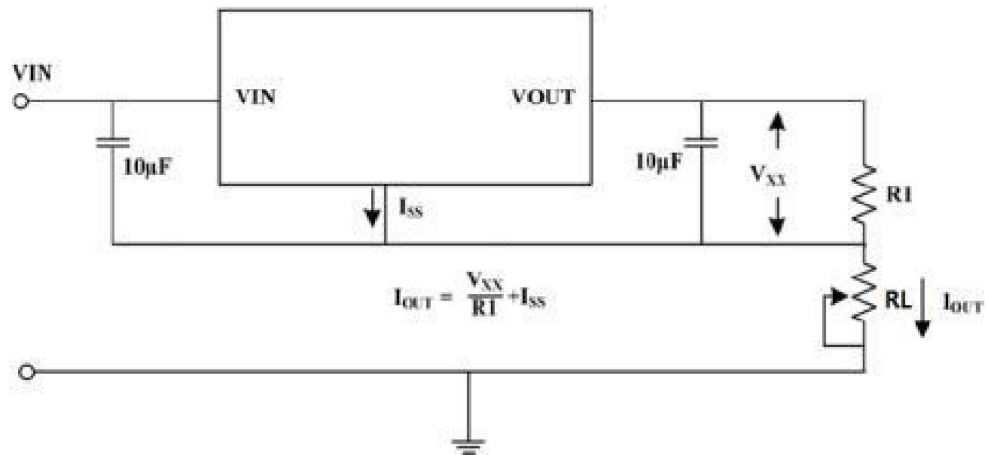


Typical Application Circuit

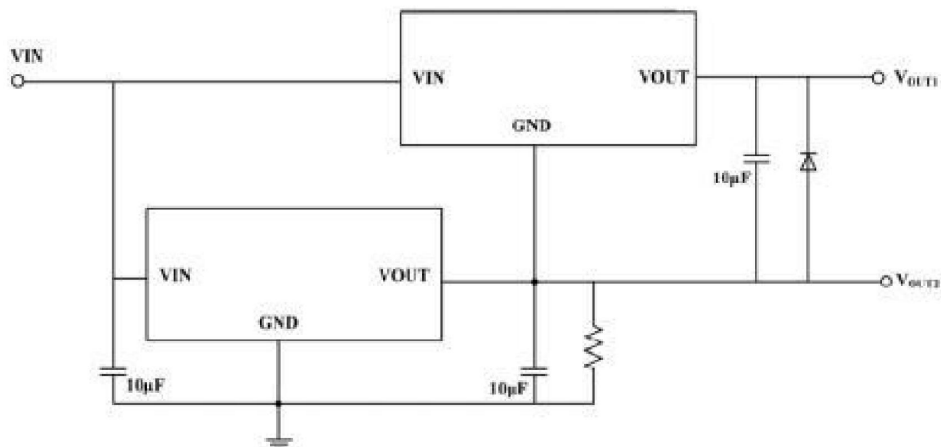
Circuit for Increasing Output Voltage:



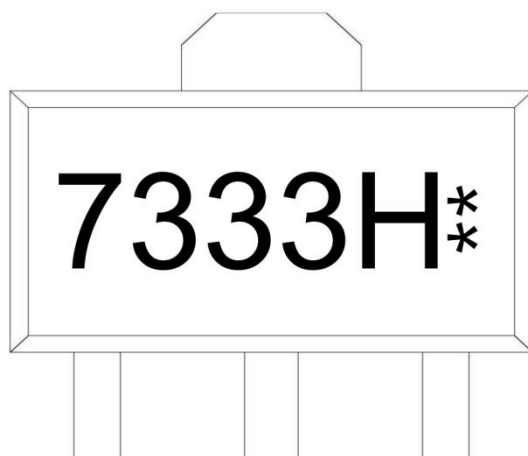
Constant Current Regulator:



Double Output Circuit:



Marking Instructions



Note:

7533H: Product Type

**: Lot No. Code, code change with Lot No

Packaging SPEC

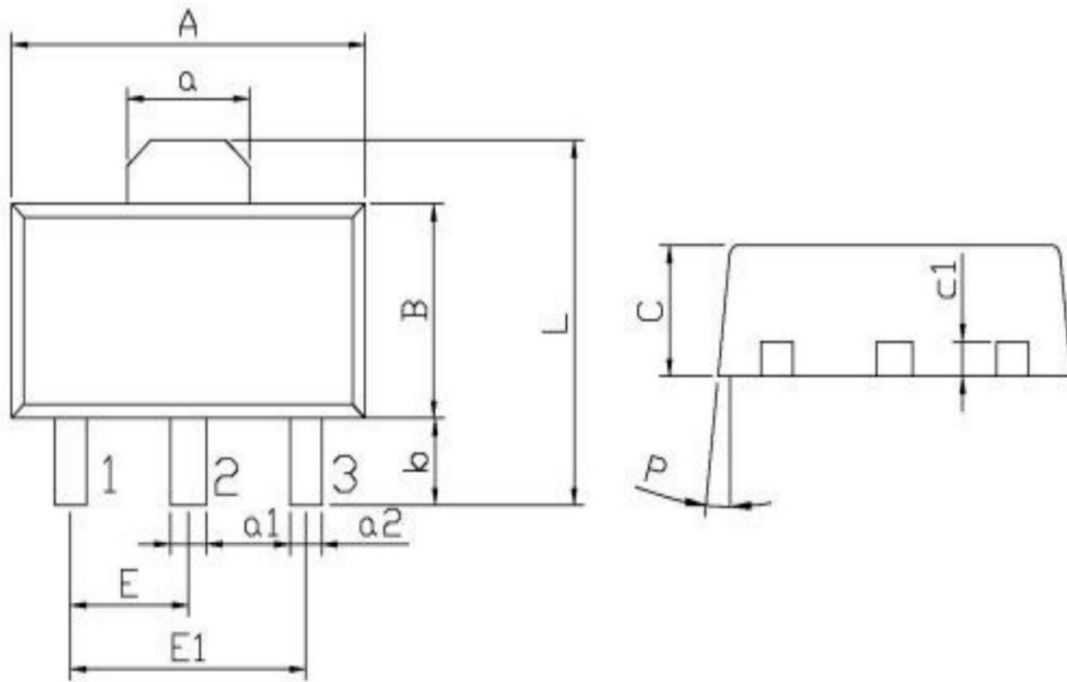
REEL

Package Type	Units					Dimension (unit: mm3)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-89	1,000	7	7,000	6	42,000	7" ×12	180×120×180	390×385×205

Package Dimensions

SOT-89

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.4	4.7	a1	0.36	0.56
B	2.35	2.65	a2	0.30	0.50
L	3.878	4.478	C	1.40	1.70
a	1.45	1.65	c1	0.35	0.50
E	1.40	1.60	P	6°	
E1	2.80	3.20			
b	0.80	1.20			