

Features

- Input Voltage up to 36V
- output current up to 300mA
- 2 μ A Current at no Load
- $\pm 2\%$ Output Accuracy
- Compact package: SOT-223

Applications

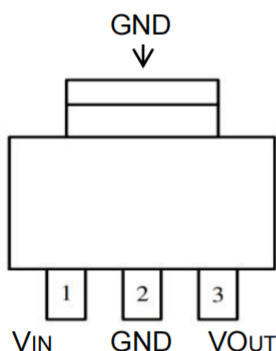
- Hand-Held Instruments
- Battery Powered Consumer Products
- Test and Measurement Equipment
- Industrial Power Supplies

Description

The TP422C series are micropower low dropout voltage regulators available in a wide variety of output voltages. These devices feature a very low quiescent current and thermal limiting protection are provided by the presence of a short circuit at the output and an internal thermal shutdown circuit.

Due to the low input-to-output voltage differential and bias current specifications, these devices are ideally suited for battery powered computer, consumer, and industrial equipment where an extension of useful battery life is desirable.

PIN CONFIGURATION



SOT-223
(TOP VIEW)

Pin Number	Pin Name	Pin Function
1	VIN	Input of Supply Voltage
2	GND	Ground
3	VOUT	Output of the Regulator

Ordering Information

TP422CXXXX

PACKAGE TYPE

Y3

OUTPUT VOLTAGE

25 : 2.5V

33 : 3.3V

50 : 5.0V

Example: TP422C33Y3

→ 3.3V Version, in SOT223 Package
& Tape & Reel Packing Type

Absolute Maximum Ratings

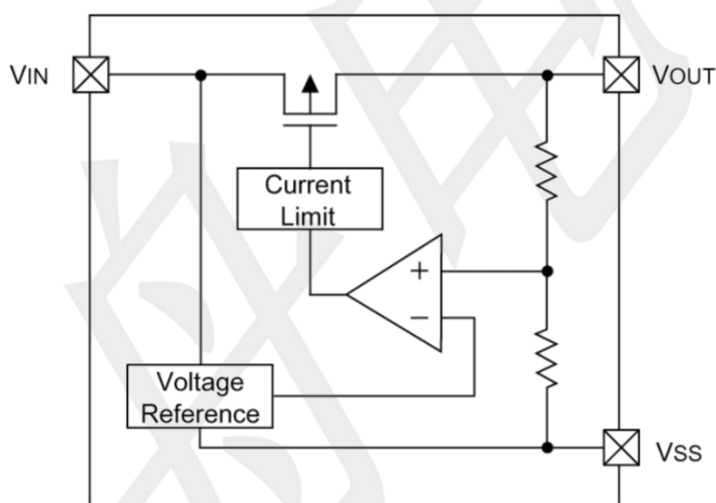
over operating free-air temperature range (unless otherwise noted)

SYMBOL	PARAMETER	RATINGS	UNIT
V _{IN}	Continuous input voltage range	-0.3 ~ +40	V
Current	Maximum output current	Internally limited	mA
T _J	Operating Junction Temperature Range	-40 ~ +85	°C
T _{stg}	Storage temperature range	-55 ~ 150	°C

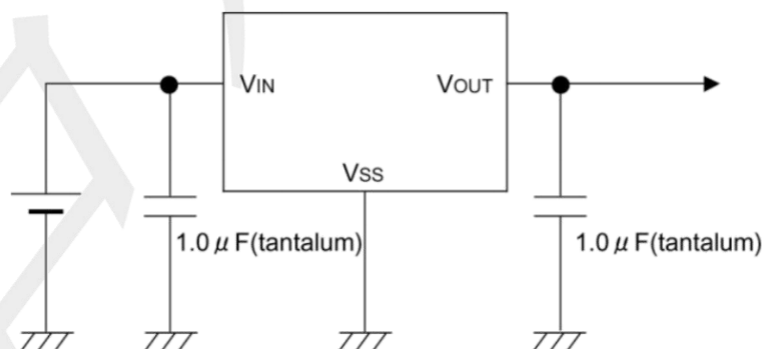
THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	245	°C/W
Junction to Case	θ_{JC}	15	°C/W

BLOCK DIAGRAM



Typical Application Circuit



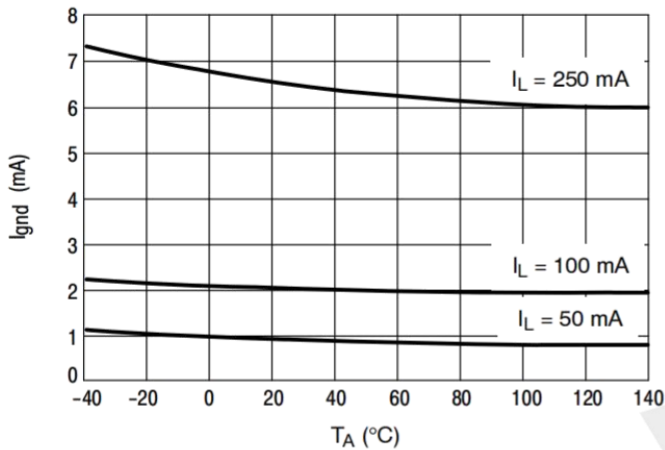
Electrical Characteristics (TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST Conditions	MIN	TYP	MAX	UNIT
Supply Voltage	VIN	IOUT = 100mA	3.0	--	36	V
Output current	IOUT		0	--	300	mA
DC Output Voltage Accuracy		IOUT = 0.1mA	-2	--	+2	%
Dropout Voltage (VIN-VOUT)	IOUT = 100mA	VOUT = 3.3V	--	600	--	mV
		VOUT = 5.0V	--	450	--	
	IOUT = 300mA	VOUT = 3.3V	--	1100	--	
		VOUT = 5.0V	--	860	--	
Ground Current (IOUT = 0mA)	Iq		--	1.5	2.0	uA
Line Regulation	ΔLINE	IOUT = 1mA, 10≤VIN≤18V	--	0.3	--	%
Load Regulation	ΔLOAD	10mA≤ IOUT ≤ 100mA	--	0.3	--	
Output Current Limit	ILIM	VOUT=0.9× VOUT(NOM)	350	--	--	mA
Power Supply Rejection Ratio	PSRR	VOUT = 5V, IOUT = 30mA, VIN = 12V, f = 1kHz	--	70	--	dB
Thermal Shutdown Temperature	TSD	IOUT = 10mA	--	160	--	°C
Thermal Shutdown Hysteresis	ΔTSD		--	15	--	

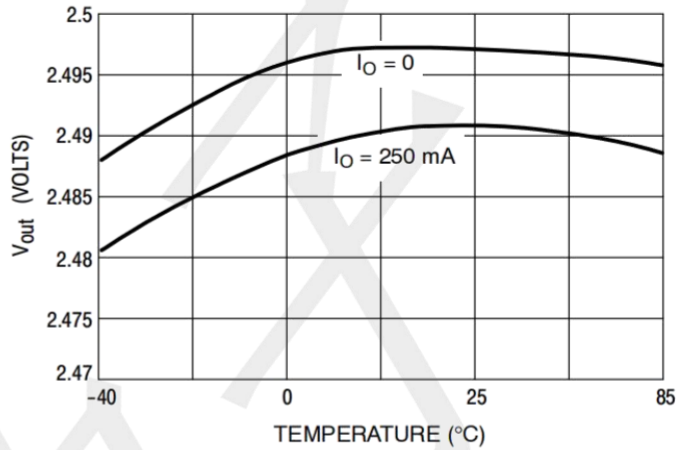
Note:

1. Test condition: the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.
2. Vdif : The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of VOUT .

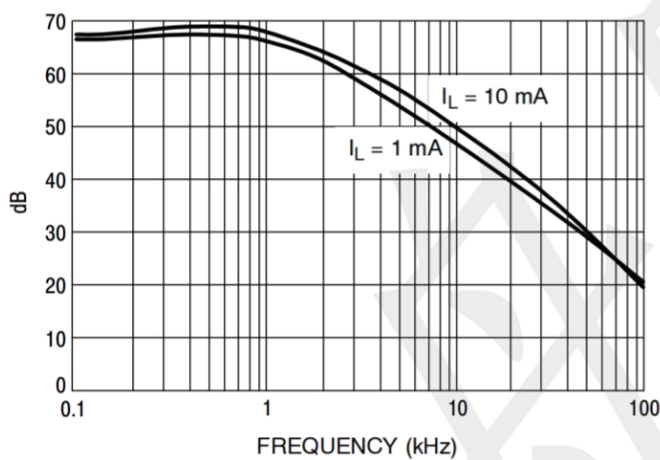
Typical Application Circuit



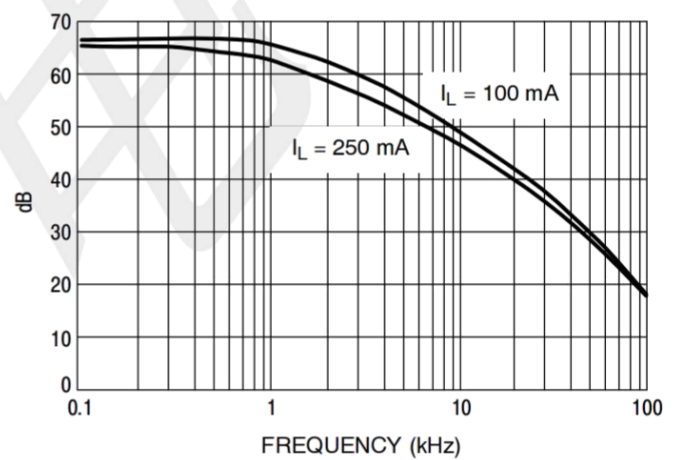
Ground Pin Current versus Ambient Temperature



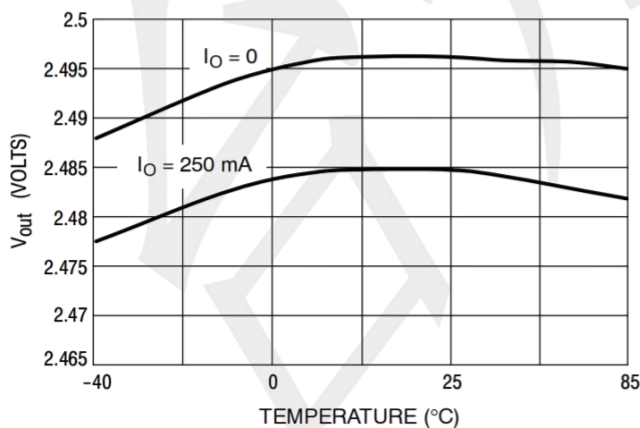
Output Voltage versus Ambient Temperature ($V_{in} = V_{out} + 1V$)



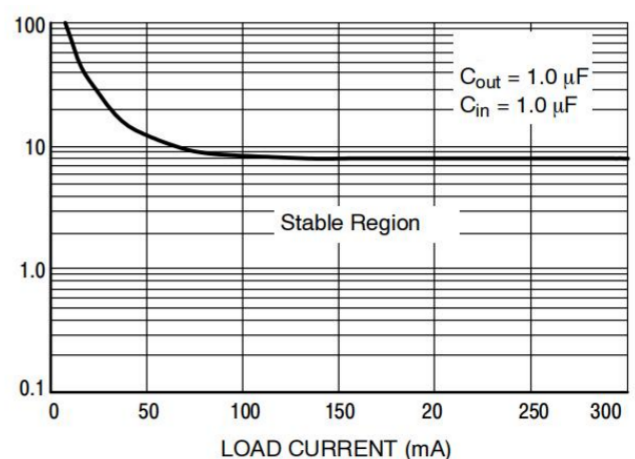
Ripple Rejection



Ripple Rejection



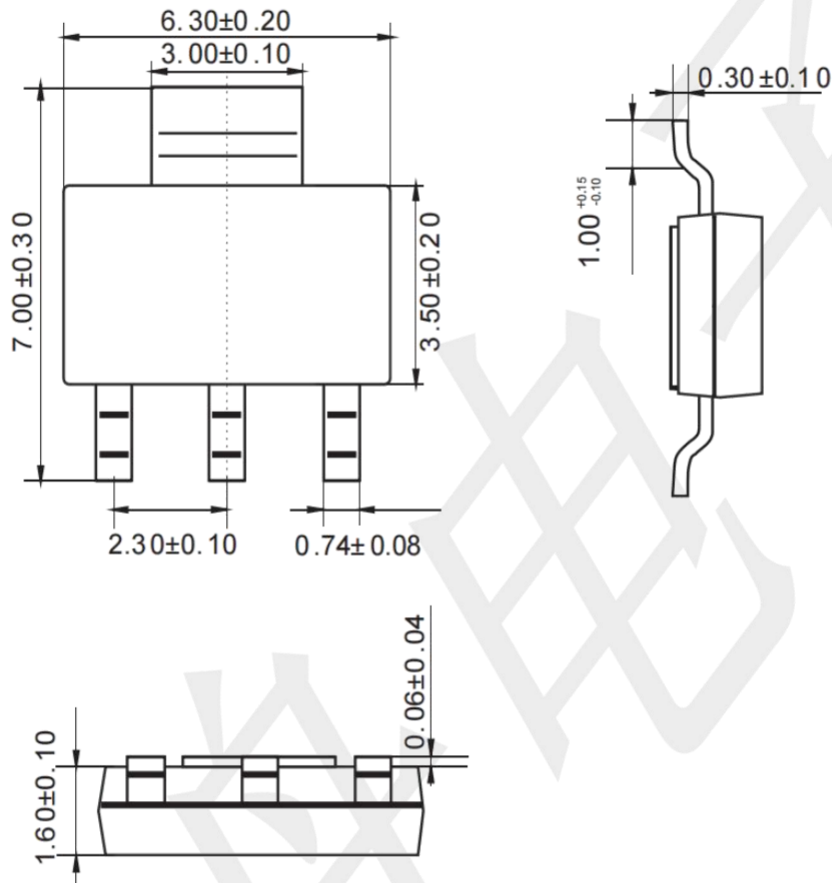
Output Voltage versus Ambient Temperature



LOAD CURRENT (mA)

Package Outline Dimensions (unit: mm)

SOT-223



Mounting Pad Layout (unit: mm)

