Low Dropout Voltage Regulator

multicomp PRO

RoHS Compliant

Description

The HT73xxS series is a set of three-terminal, low power, high voltage regulators implemented in CMOS technology. The series features extremely low quiescent current which is typically 1.5μA. They allow input voltages as high as 20V. The device provides large current with a significantly small dropout voltage.

The HT73xxS consists of a high-precision voltage reference, an error correction circuit, and a current limited output driver. They are available with several fixed output voltages ranging from 1.8V to 5.0V.CMOS technology ensures low dropout voltage and low current consumption. Although designedprimarily as fixed voltage regulators, these devices can be used with external components to generate variable voltages and currents.

Features

- Ultra low quiescent current: 1.5μA (typ.)
- High input voltage (up to 20V)
- Output voltage: 1.8V, 2.5V, 2.7V, 3.0V, 3.3V, 3.5V, 4.15V, 5.0V
- Output voltage accuracy: tolerance ±3%
- Maximum output current: 300mA
- Low dropout voltage
- Low temperature coefficient
- 3-pin SOT89 package

Applications

- Battery-powered equipment
- Voltage regulator for microprocessor
- Voltage regulator for LAN cards
- Wireless Communication equipment
- Audio/Video equipment

Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating
Supply Voltage	V_{SS}	0.3 to 20V
Power Consumption	P_c	300mW
Junction Temperature	T_J	150°C
Operating Temperature	T_{op}	40°C to 85°C
Storage Temperature range	T_{STG}	-50°C to 125°C

Note: These are stress ratings only. Stresses exceeding the range specified under "Absolute Maximum Ratings" may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

The guaranteed specifications apply only for the test conditiaons listed.

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Electrical Characteristic Ta = 25°C

HT7330S, +3.0V Output Type

Parameter	Symbol	Test conditons		Min	Typ	Max	Unit
		V_{IN}	Conditions				
Output Voltage	V_{OUT}	4V	I_{OUT}=40mA	2.91	3	3.09	V
Maximum Output Current	$I_{OUT(MAX)}$	4V	V_{OUT}≥2.7V	250	--	--	mA
Load Regulation	$\triangle V_{OUT}$*	4V	1mA≤ I_{OUT} ≤ 80mA	--	45	90	mV
Dropout Voltage	V_{DROP}**	--	I_{OUT}=40mA	--	95	--	mV
Quiescent Current	I_{SS}	4V	No load	--	1.5	3	µA
Line Regulation	$\triangle V_{OUT}$ $\triangle V_{IN}$ V_{OUT}	--	I_{OUT}=40mA 4V ≤ V_{IN} ≤ 12V	--	0.2	0.3	%/V
Input Voltage	V_{IN}	--	--	--	--	12	V
Temperature Coefficient	$\triangle V_{OUT}$ $\triangle Ta$	4V	I_{OUT}=40mA -40°C<Ta<85°C	--	±0.7	--	mV/°C

HT7333S, +3.3V Output Type

Parameter	Symbol	Test conditons		Min	Typ	Max	Unit
		V_{IN}	Conditions				
Output Voltage	V_{OUT}	4.3V	I_{OUT}=40mA	3.201	3.3	3.399	V
Maximum Output Current	$I_{OUT(MAX)}$	4.3V	V_{OUT}≥2.97V	250	--	--	mA
Load Regulation	$\triangle V_{OUT}$*	4.3V	1mA≤ I_{OUT} ≤ 80mA	--	45	90	mV
Dropout Voltage	V_{DROP}**	--	I_{OUT}=40mA	--	90	--	mV
Quiescent Current	I_{SS}	4.3V	No load	--	1.5	3	µA
Line Regulation	$\triangle V_{OUT}$ $\triangle V_{IN}$ V_{OUT}	--	I_{OUT}=40mA 4.3V ≤ V_{IN} ≤ 12V	--	0.2	0.3	%/V
Input Voltage	V_{IN}	--	--	--	--	12	V
Temperature Coefficient	$\triangle V_{OUT}$ $\triangle Ta$	4.3V	I_{OUT}=40mA -40°C<Ta<85°C	--	±0.7	--	mV/°C

HT7335S , +3.5V Output Type

Parameter	Symbol	Test conditons		Min	Typ	Max	Unit
		V_{IN}	Conditions				
Output Voltage	V_{OUT}	4.5V	I_{OUT}=40mA	3.395	3.5	3.605	V
Maximum Output Current	$I_{OUT(MAX)}$	4.5V	V_{OUT}≥3.15V	250	--	--	mA
Load Regulation	$\triangle V_{OUT}$*	4.5V	1mA≤ I_{OUT} ≤ 80mA	--	45	90	mV
Dropout Voltage	V_{DROP}**	--	I_{OUT}=40mA	--	80	--	mV
Quiescent Current	I_{SS}	4.5V	No load	--	1.5	3	µA
Line Regulation	$\triangle V_{OUT}$ $\triangle V_{IN}$ V_{OUT}	--	I_{OUT}=40mA 4.5V ≤ V_{IN} ≤ 12V	--	0.2	0.3	%/V
Input Voltage	V_{IN}	--	--	--	--	12	V
Temperature Coefficient	$\triangle V_{OUT}$ $\triangle Ta$	4.5V	I_{OUT}=80mA -40°C<Ta<85°C	--	±0.7	--	mV/°C

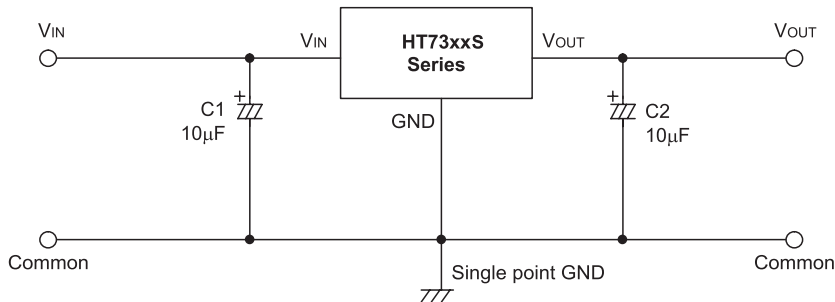Newark.com/multicomp-pro
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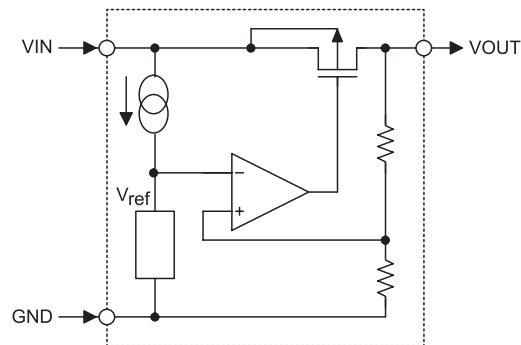
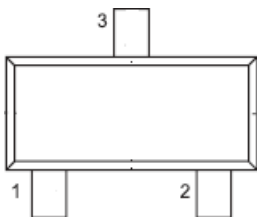# Low Dropout Voltage Regulator   multicomp PRO

Application Circuits

Basic circuits

Diagram

1.GND
2.VOUT
3.VIN
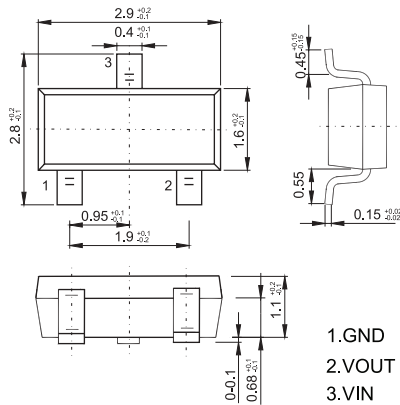
Dimensions : Millimetres

Pin Assignment

Block Diagram

Part Number Table

Description	Part Number
Low Dropout Voltage Regulator, 3.0V, 2%, SOT 23-3	HT7330S
Low Dropout Voltage Regulator, 3.3V, 2%, SOT 23-3	HT7333S
Low Dropout Voltage Regulator, 5V, 2%, SOT 23-3	HT7350S

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