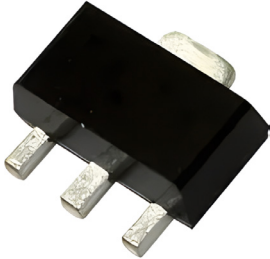


RoHS  
Compliant



## Description

This series is a high accuracy, high input voltage low quiescent current, high speed, and low dropout Linear regulator with high ripple rejection. The device is manufactured with Bi-CMOS process.

This offers over-current limit and over temperature protection to ensure the device working in well conditions.

## Specification

Supply Voltage	: 4.75V to 40V
Output Range	: 1.8V to 10V
Output Accuracy	: <+/-2%
Output Current	: 250mA (Up to 500mA Typ.)
PSRR	: 50dB @ 100Hz
Dropout Voltage	: 850mV @ I <sub>OUT</sub> =250mA
Quiescent Current	: 6μA@V <sub>IN</sub> =7V(Typ.)
Recommend Capacitor	: 10μF

## Absolute Maximum Ratings Ta = 25°C

Parameter	Rating
Power Dissipation	Internal limited (mW)
V <sub>IN</sub> Range	-0.3V to 45V
V <sub>OUT</sub> Range	-0.3V to 10V
Lead Temperature Range	260
Storage Temperature Range	-55°C to 150°C
Operating Junction Temperature Range	125°C
ESD MM	400V
ESD HBM	4K

## Recommended Operating Conditions Ta = 25°C

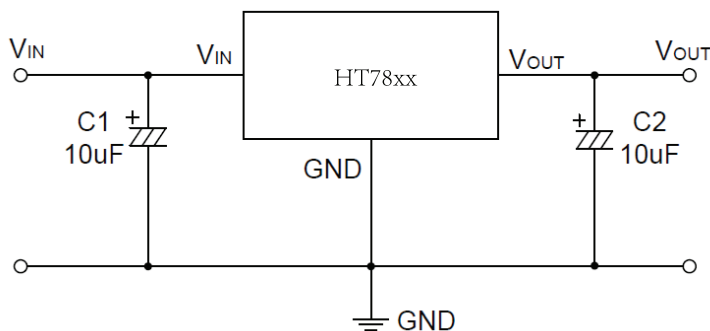
Parameter	Rating
Operating Supply Voltage	4.75V to 40V
Operating Temperature Range	-40°C to 85°C
Thermal Resistance(On PCB),R JA	43.5°C/W
Power Dissipation	1000mW

# Low Quiescent Current LDO multicomp<sup>PRO</sup>

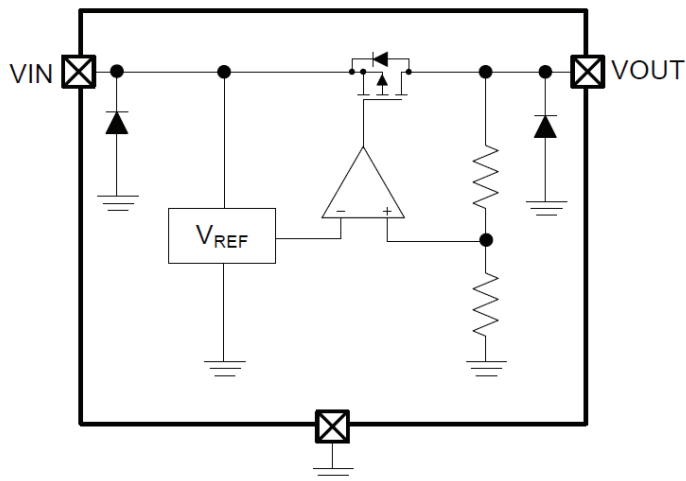
## Electrical Characteristics (Ta=25 C, VIN=12V, CIN=COUT=10uF, unless otherwise noted)

Parameter Name	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Range	V <sub>IN</sub>	I <sub>OUT</sub> =10mA	4.75		40	V
Output Voltage	V <sub>OUT</sub>	VIN=12V, I <sub>OUT</sub> =10mA HT7830 HT7833 HT7850	2.94	3	3.06	
			3.234	3.3	3.366	
			4.9	5	5.1	
Maximum Output Current	I <sub>OUT_PK</sub>	V <sub>IN</sub> =12V, R <sub>L</sub> =1Ω		500		mA
Quiescent Current	I <sub>Q</sub>	V <sub>IN</sub> =7V, No load		6	8	μA
		V <sub>IN</sub> =24V, No load		7.5	10	
		V <sub>IN</sub> =40V, No load		10	15	
Dropout Voltage	V <sub>DROP</sub>	I <sub>OUT</sub> =100mA		2	12	mV
		I <sub>OUT</sub> =100mA		300	400	
		I <sub>V</sub> =250mA		850	1200	
Line Regulation	LNR	V <sub>I</sub> =7~24V, V <sub>OUT</sub> =5V, I <sub>OUT</sub> =1mA		0.02		%V
		V <sub>IN</sub> =7~45V, V <sub>OUT</sub> =5V, I <sub>OUT</sub> =1mA		0.1		
Load Regulation	LDR	V <sub>IN</sub> =12V, I <sub>OUT</sub> =1~100mA		0.6		%
		V <sub>IN</sub> =7V, I <sub>OUT</sub> =1~250mA		2		
Output Noise	e <sub>NO</sub>	I <sub>OUT</sub> =10mA	-100		100	μV
Ripple Rejection	PSRR	V <sub>IN</sub> =10V V <sub>PP</sub> =0.5V I <sub>OUT</sub> =1mA	f=100Hz		50	dB
			f=1KHz		40	
			f=10KHz		30	
Thermal Protection	T <sub>SD</sub>	V <sub>IN</sub> =12V, I <sub>OUT</sub> =1mA		155		°C
Thermal Protection Hys	T <sub>SD_HYS</sub>	V <sub>IN</sub> =12V, I <sub>OUT</sub> =1mA		30		
Temperature Coefficient	ΔV <sub>O</sub> /ΔT	V <sub>IN</sub> =12V, I <sub>OUT</sub> =1mA		±0.1		mV/°C

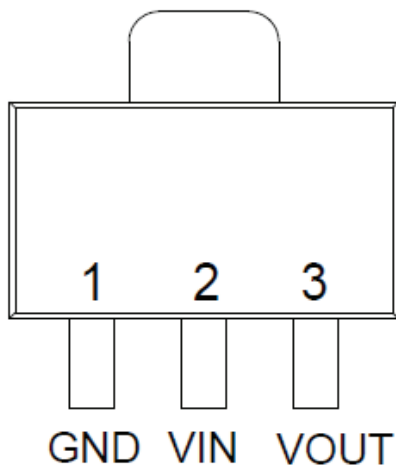
## Typical Application



## Functional Block Diagram



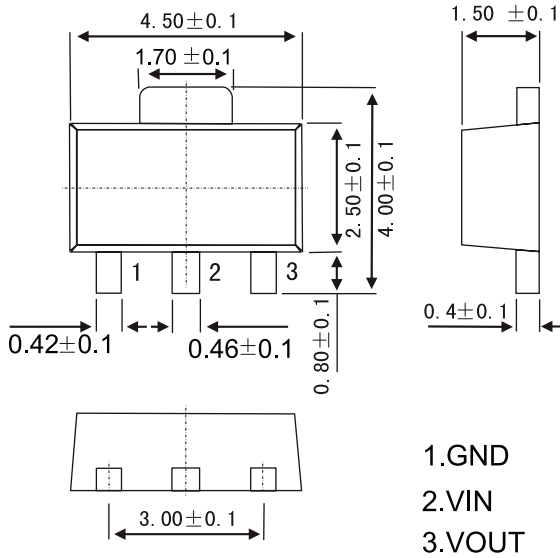
## Pin Configuration



## Pin Description

Pin Number	Pin Name	Function Description
1	GND	Ground
2	V <sub>IN</sub>	Voltage Input
3	V <sub>OUT</sub>	Voltage Output

## Diagram



## Part Number Table

Description	Part Number
Low Quiescent Current LDO, 3.0V, SOT-89	HT7830
Low Quiescent Current LDO, 3.3V, SOT-89	HT7833
Low Quiescent Current LDO, 5.0V, SOT-89	HT7850

Dimensions : Millimetres

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