

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 _{OUT} =250mA
Quiescent Current	: 6μA@V _{IN} =7V(Typ.)
Recommend Capacitor	: 10μF

Absolute Maximum Ratings Ta = 25°C

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

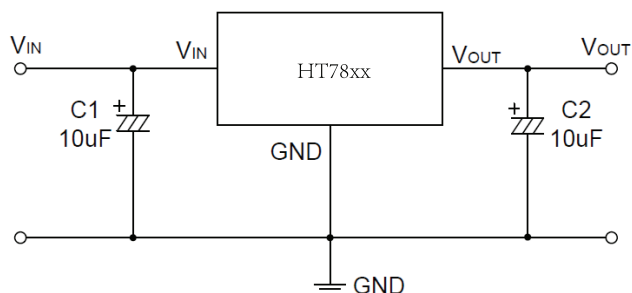
Recommended Operating Conditions Ta = 25°C

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

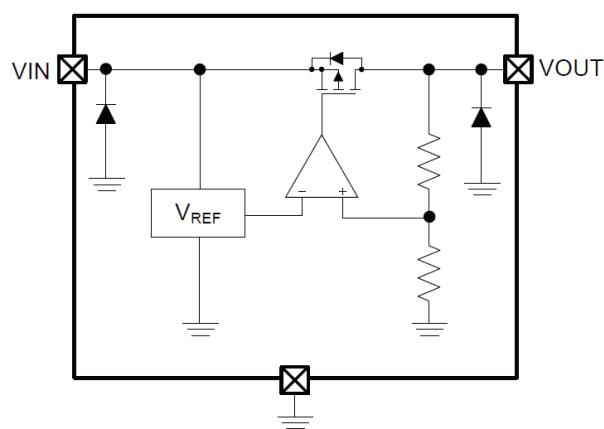
Electrical Characteristics (Ta=25 C, VIN=12V, CIN=COUT=10uF, unless otherwise noted)

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

Typical Application

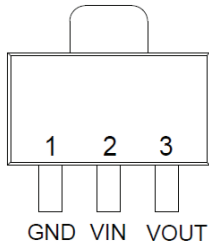


Functional Block Diagram



Low Quiescent Current LDO multicomp^{PRO}

Pin Configuration



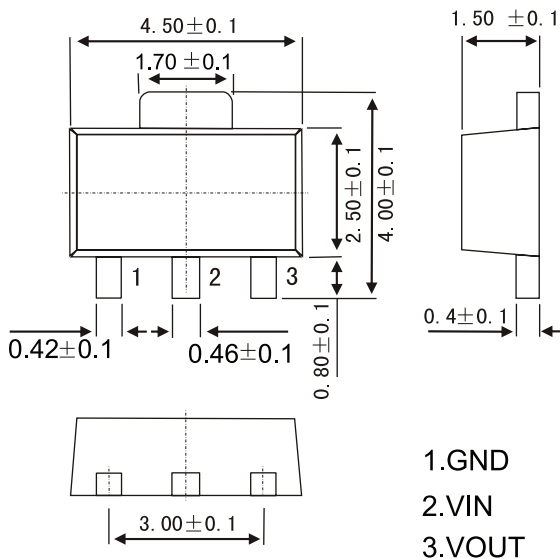
Pin Description

Pin Number	Pin Name	Function Description
1	GND	Ground
2	V _{IN}	Voltage Input
3	V _{OUT}	Voltage Output

Marking

HT7830	H4VR
HT7833	H4YR
HT7850	H4PR

Diagram



Part Number Table

Description	Part Number
Low Quiescent Current LDO, 3V, SOT-89	HT7830
Low Quiescent Current LDO, 3.3V, SOT-89	HT7833
Low Quiescent Current LDO, 5V, SOT-89	HT7850

Dimensions : Millimetres

Important Notice : This data sheet and its contents (the "Information") belong to the members of the AVNET group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp Pro is the registered trademark of Premier Farnell Limited 2019.

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
sg.element14.com/b/multicomp-pro

multicomp^{PRO}