

HT1015-1 1.5V Low Power LDO

Features

- Low power consumption
- · Low voltage drop
- Low temperature coefficient

Applications

- Battery-powered equipment
- Communication equipment

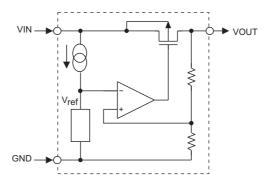
General Description

The HT1015-1 is a three-terminal low power voltage regulator implemented in CMOS technology. It is available with a fixed output voltage at 1.5V. CMOS technology ensures low voltage drop and low quiescent current.

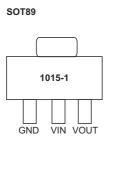
- Wide operating voltage (12V max.)
- 3-pin SOT89 and 5-pin SOT23 package
- Audio/Video equipment

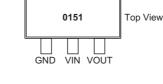
Although designed primarily as a fixed voltage regulator, this device can be used with external components to obtain variable voltages and currents.

Block Diagram

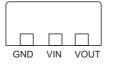


Pin Assignment





SOT23-5 NC





NC





Ta=25°C

Absolute Maximum Ratings

Supply VoltageV_SS-0.3V to V_SS+13V	Storage Temperature50°C to 125°C
Operating Temperature40°C to 85°C	Maximum Junction Temperature150°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.

Thermal Information

Symbol	Parameter	Package	Max.	Unit
Thermal Resistance (Junction to Ambient)	SOT23-5	500	°C/W	
ALA	θ _{JA} (Assume no ambient airflow, no heat sink)	SOT89	200	°C/W
P _D I	Power Dissipation	SOT23-5	0.20	W
		SOT89	0.50	W

Note: P_D is measured at Ta= $25^\circ C$

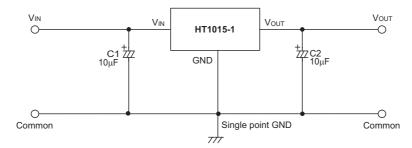
Electrical Characteristics

Symbol	Test Conditions Min. VIN Conditions	Test Conditions		Min	T		Unit
Symbol		win.	Тур.	Max.	Unit		
V _{OUT}	Output Voltage Tolerance	3.5V	I _{OUT} =0.5mA	1.455	1.5	1.545	V
I _{OUT}	Output Current	3.5V		7.0	18		mA
ΔV _{OUT}	Load Regulation	3.5V	1mA≤I _{OUT} ≤7mA	_	15	_	mV
V _{DIF}	Voltage Drop		I _{OUT} =0.5mA		250		mV
I _{SS}	Current Consumption	3.5V	No load		2.2	5.0	μA
$\frac{\Delta Vout}{\Delta Vin \times Vout}$	Line Regulation		2.5V≤V _{IN} ≤12V I _{OUT} =0.5mA		0.1		%/V
V _{IN}	Input Voltage					12	V
$\Delta VOUT$ ΔTa	Temperature Coefficient	3.5V	I _{OUT} =0.5mA –40°C~85°C	_	-0.75		mV/°C

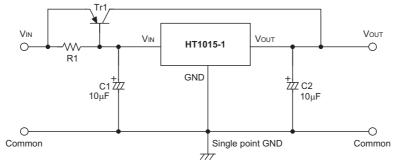


Application Circuits

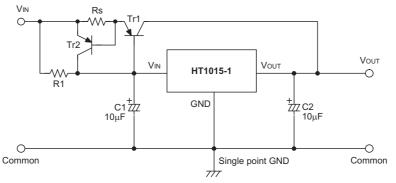
Basic Circuit



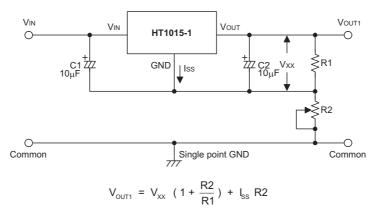
High Output Current Positive Voltage Regulator



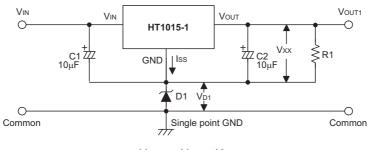
Short-Circuit Protection Using External Transistors



Increased Output Voltage Circuits

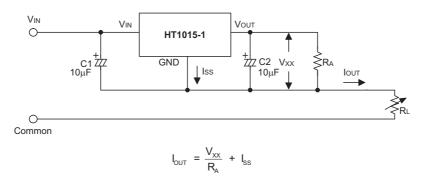




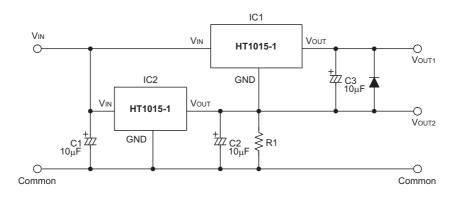


$$V_{OUT1} = V_{XX} + V_{D1}$$

Constant Current Regulator



Dual Supply





Package Information

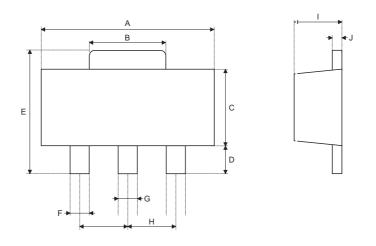
Note that the package information provided here is for consultation purposes only. As this information may be updated at regular intervals users are reminded to consult the <u>Holtek website</u> for the latest version of the <u>package information</u>.

Additional supplementary information with regard to packaging is listed below. Click on the relevant section to be transferred to the relevant website page.

- Further Package Information (include Outline Dimensions, Product Tape and Reel Specifications)
- Packing Meterials Information
- Carton Information



3-pin SOT89 Outline Dimensions

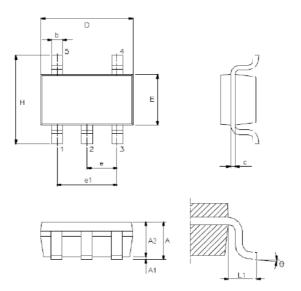


Symbol	Dimensions in inch				
Symbol	Min.	Nom.	Max.		
A	0.173	—	0.181		
В	0.053	—	0.072		
С	0.090		0.102		
D	0.035		0.047		
E	0.155	_	0.167		
F	0.014		0.019		
G	0.017		0.022		
Н	_	0.059 BSC	—		
I	0.055		0.063		
J	0.014		0.017		

Sumbol	Dimensions in mm				
Symbol	Min.	Nom.	Max.		
A	4.40	_	4.60		
В	1.35		1.83		
С	2.29		2.60		
D	0.89		1.20		
E	3.94		4.25		
F	0.36	_	0.48		
G	0.44	_	0.56		
Н		1.50 BSC			
I	1.40	_	1.60		
J	0.35		0.44		



5-pin SOT23 Outline Dimensions



Symbol	Dimensions in inch				
Symbol	Min.	Nom.	Max.		
А	_	_	0.057		
A1			0.006		
A2	0.035	0.045	0.051		
b	0.012		0.020		
С	0.003		0.009		
D	_	0.114 BSC	_		
E		0.063 BSC			
е	_	0.037 BSC	_		
Н		0.075 BSC	_		
L		0.110 BSC			
L1	_	0.024 BSC	_		
θ	0°		8°		

Sympol	Dimensions in mm				
Symbol	Min.	Nom.	Max.		
A	_	_	1.45		
A1	_	_	0.15		
A2	0.90	1.15	1.30		
b	0.30	_	0.50		
С	0.08		0.22		
D		2.90 BSC	_		
E		1.60 BSC	_		
е		0.95 BSC	_		
Н		1.90 BSC	_		
L	_	2.80 BSC	_		
L1		0.60 BSC	_		
θ	0°	_	8°		



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