

5V AND 8V VOLTAGE REGULATOR

PRODUCT PREVIEW

FEATURES

- Output Currents up to 1A
- Fixed Precision Output 1 Voltage 5V ± 2%
- Fixed Precision Output 2 Voltage 8V ± 2%
- Output 1 with Disable by TTL Input
- Output 2 with Disable by TTL Input
- Short Circuit Protection at both Outputs
- Thermal Protection
- Low Drop Output Voltage

DESCRIPTION

The STV8131 is a monolithic dual positive voltage regulator designed to provide fixed precision output voltages of 5V and 8V at currents up to 1A.

Each output can be disabled separately by a TTL input.

Short circuit and thermal protections are included.

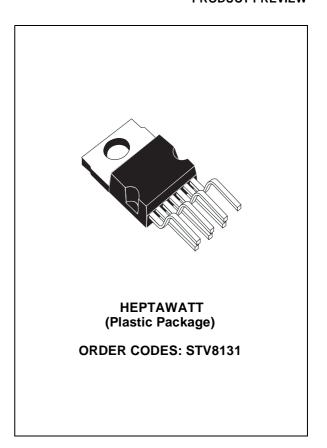
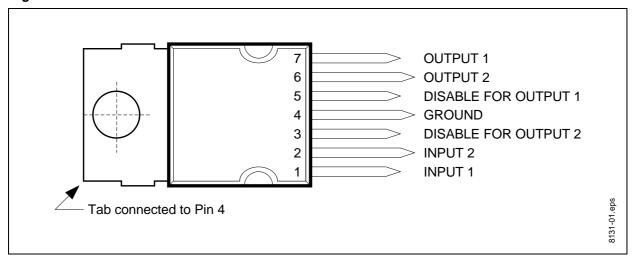
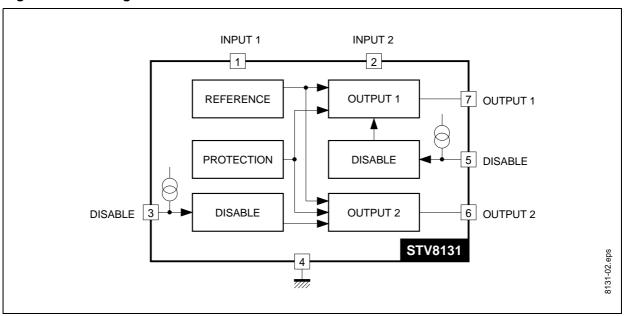


Figure 1. Pin Connections



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Figure 2. Block Diagram



CIRCUIT DESCRIPTION

The STV8131 is a dual voltage regulator with separate Disable for each output.

The two regulation parts are supplied from one voltage reference circuit trimmed by zener zap during EWS test.

Since the supply voltage of this last is connected at Pin 1 ($V_{\rm IN1}$), the regulator 2 will not work if Pin 1 is not supplied.

The outputs stage have been realized in darlington configuration with a drop typical 1.2V.

For each output a disable circuit switches-off this output if a voltage lower than 0.8V is applied at corresponding Pin (Pin 3 for output 2, Pin 5 for output 1).

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{IN}	DC Input Voltage Pin 1	20	V
V _{DIS}	Disable Input Voltage Pin 3-5	20	V
I _{O1, 2}	Output Currents	Internally Limited	
P _t	Power Dissipation	Internally Limited	
T _{STG}	Storage Temperature	- 65 to + 150	°C
T_J	unction Temperature	0 to + 150	°C

THERMAL DATA

Symbol	Parameter	Value	Unit
R _{TH} (j-c)	Thermal Resistance Junction-case Max.	3	°C/W
T _J	Recommended Junction Temperature Max.	130	°C

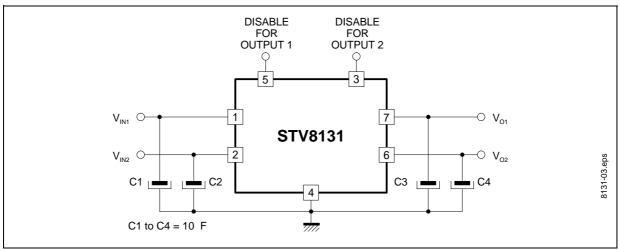
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ELECTRICAL CHARACTERISTICS ($V_{IN1} = 7V$, $V_{IN2} = 10V$, $T_J = 25$ °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
V _{O1}	Output Voltage	I _{O1} = 10mA	4.9	5	5.1	V
V _{O2}	Output Voltage	I _{O2} = 10mA	7.84	8	8.16	V
V _{O1} V _{O2}	Output Voltage	5mA < I _{O1} 2 < 750mA 7V < V _{IN1} < 14V 10V < V _{IN2} < 14V	4.8 7.7		5.2 8.3	V V
V _{IO1, 2}	Dropout Voltage	I _{O1} 2 = 750mA I _{O1} 2 = 1A			1.4 2	V V
V _{O1, 2LI}	Line Regulation	$7V < V_{\text{IN1}} < 14V$ $10V < V_{\text{IN2}} < 14V$ $I_{\text{O1}} 2 = 200\text{mA}$			50 80	mV mV
V _{O1, 2LO}	Load Regulation	5mA < I _{O1} < 0.6A 5mA < I _{O2} < 0.6A			100 160	mV mV
IQ	Quiescent Current	I _{O1} = 10mA Output 2 Disabled			2	mA
K _{O1, 2}	Output Voltage Thermal Drift	$K_0 = \frac{\Delta V_0 \cdot 10^6}{\Delta T \cdot V_0}$ $Tj = 0 \text{ to } + 125^{\circ}C$		100		ppm/°C
I _{O1, 2SC}	Short Circuit Output Current	$V_{IN1} = 7V, V_{IN2} = 10V$ $V_{IN2} = 16V \text{ (see Note)}$			1.6 1	A A
V _{DISH}	Disable Voltage High (corresponding out active)		2			V
V _{DISL}	Disable Voltage Low (corresponding out disabled)				0.8	V
I _{DIS}	Disable Bias Current	0V < V _{DIS} < 7V	-30		2	μA
T _{jsd}	Junction Temperature for Thermal Shut Down			145		°C

Note: Safe permanent short-circuit is only guaranteed for input voltages up to 16V.

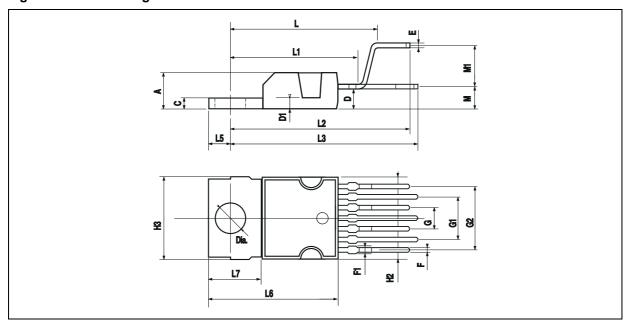
Figure 3. Typical Application



PACKAGE MECHANICAL DATA

9-PINS - PLASTIC HEPTAWATT

Figure 4. 9-Pin Package



Dimensions	Millimeters				Inches		
Dimensions	Min.	Тур.	Max.	Min.	Тур.	Max.	
Α			4.8			0.189	
С			1.37			0.054	
D	2.4		2.8	0.094		0.110	
D1	1.2		1.35	0.047		0.053	
E	0.35		0.55	0.014		0.022	
F	0.6		0.8	0.024		0.031	
F1			0.9			0.035	
G	2.41	2.54	2.67	0.095	0.100	0.105	
G1	4.91	5.08	5.21	0.193	0.200	0.205	
G2	7.49	7.62	7.80	0.295	0.300	0.307	
H2			10.4			0.409	
H3	10.05		10.40	0.396		0.409	
L		16.97			0.668		
L1		14.92			0.587		
L2		21.54			0.848		
L3		22.62			0.891		
L5	2.6		3.0	0.102		0.118	
L6	15.10		15.80	0.594		0.622	
L7	6.0		6.6	0.236		0.260	
M		2.8			0.110		
M1		5.08			0.200		
Dia.	3.65		3.85	0.144		0.152	

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