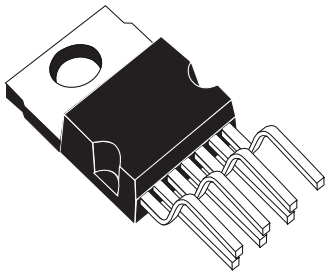
STV8131

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



HEPTAWATT
(Plastic Package)

ORDER CODES: STV8131

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

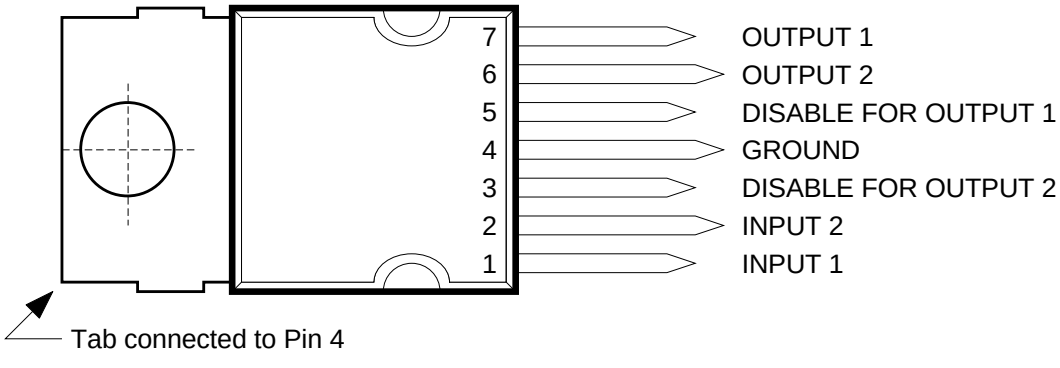
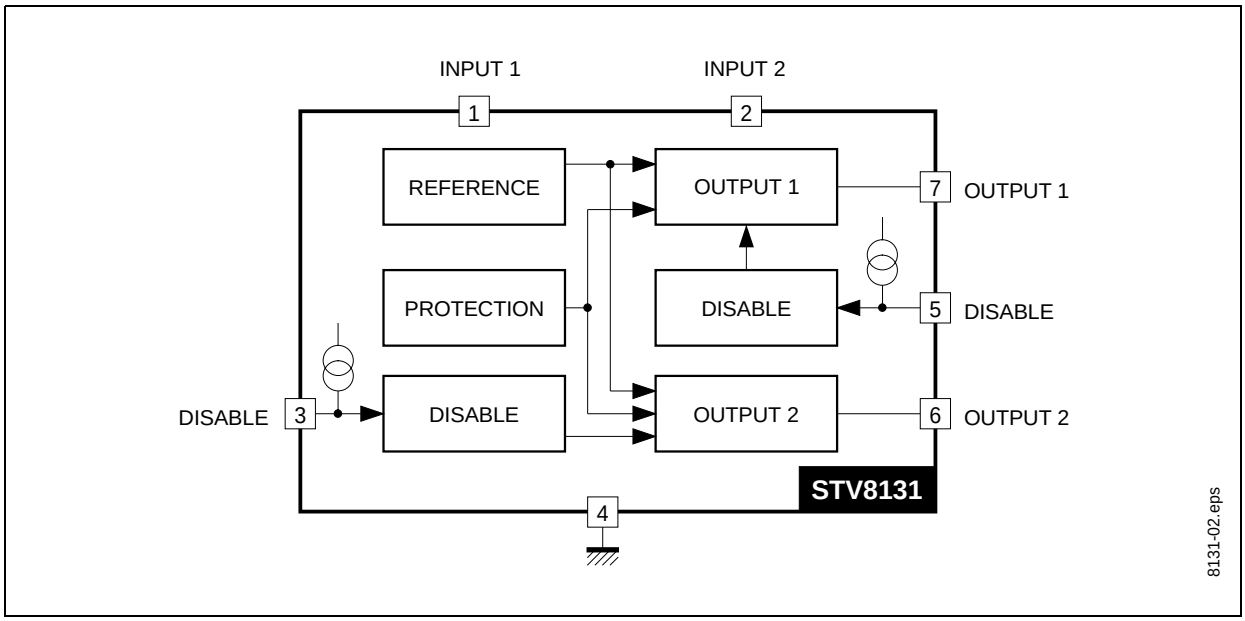


Figure 2. Block Diagram



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_{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

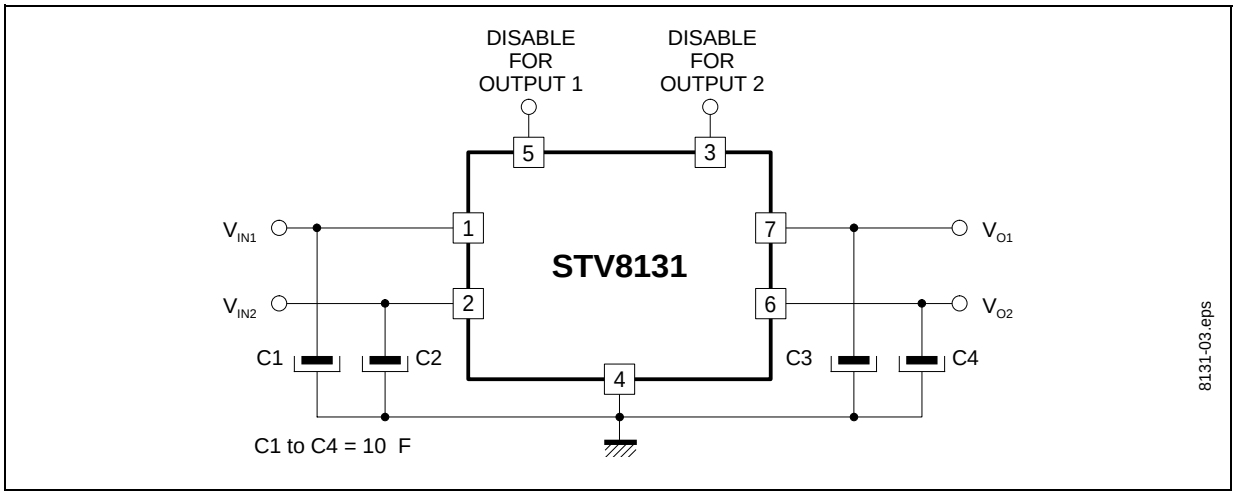
Symbol	Parameter		Value	Unit
R_{TH}(j-c)	Thermal Resistance Junction-case	Max.	3	°C/W
T_J	Recommended Junction Temperature	Max.	130	°C

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

Symbol	Parameter	Test Conditions	Min.	Typ.	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_{IN1} < 14V 10V < V_{IN2} < 14V I_{O1} 2 = 200mA			50 80	mV mV
$V_{O1, 2LO}$	Load Regulation	5mA < I_{O1} < 0.6A 5mA < I_{O2} < 0.6A			100 160	mV mV
I_Q	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 to + 125°C		100		ppm/°C
$I_{O1, 2SC}$	Short Circuit Output Current	V_{IN1} = 7V, V_{IN2} = 10V V_{IN2} = 16V (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.

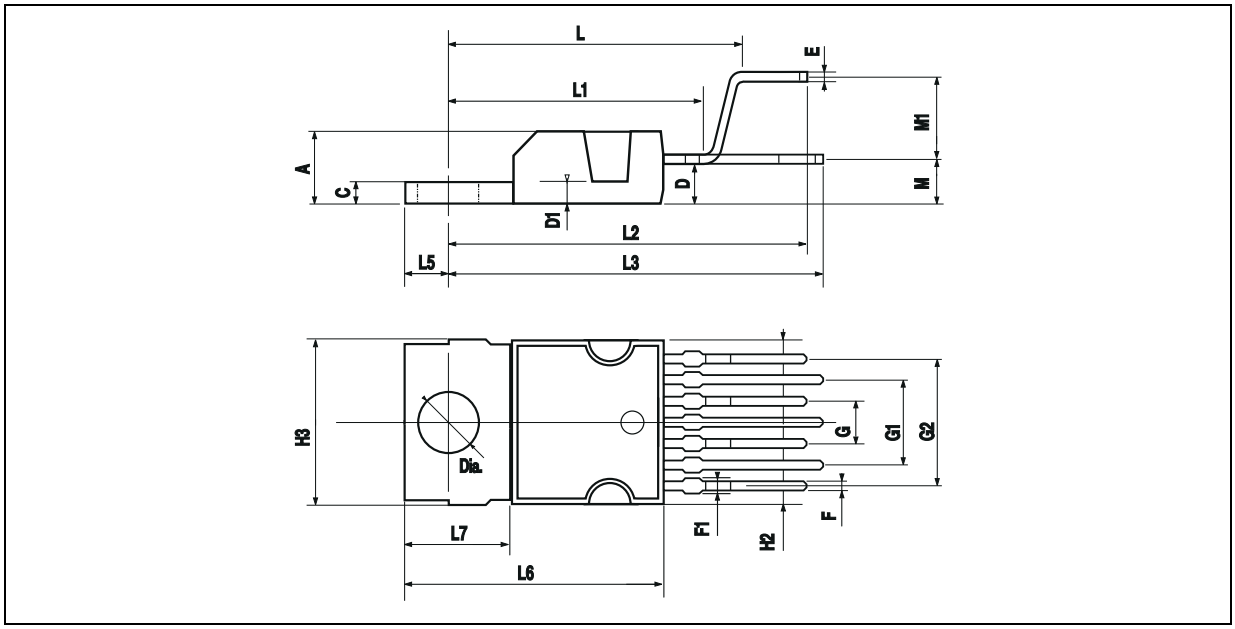
Figure 3. Typical Application



PACKAGE MECHANICAL DATA

9-PINS - PLASTIC HEPTAWATT

Figure 4. 9-Pin Package



Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			4.8			0.189
C			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