

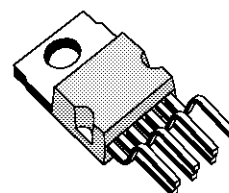
5V + ADJUSTABLE VOLTAGE REGULATOR WITH DISABLE

- OUTPUT CURRENTS UP TO 600mA
- FIXED PRECISION OUTPUT 1 VOLTAGE 5V $\pm 2\%$
- OUTPUT 2 - VOLTAGE PROGRAMMABLE FROM 5V TO 14V
- OUTPUT 2 VOLTAGE DISABLED BY A TTL INPUT
- SHORT CIRCUIT PROTECTION AT BOTH OUTPUTS
- THERMAL PROTECTION
- LOW DROP OUT 1.5V AT 400mA
- HIGH SUPPLY VOLTAGE REJECTION

DESCRIPTION

The TDA8135 is a monolithic dual positive voltage regulator designed to provide fixed precision output voltages, 5V + adjustable outputs at currents up to 600mA.

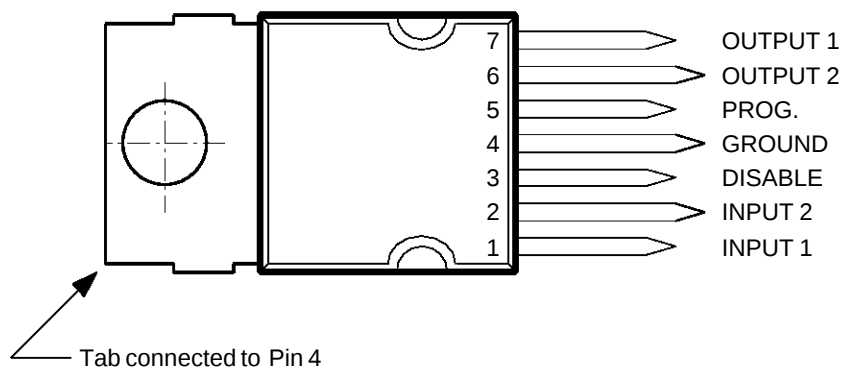
Output 2 can be disabled by a TTL input. Both output currents are limited by an internal short circuit protection.



HEPTAWATT
(Plastic Package)

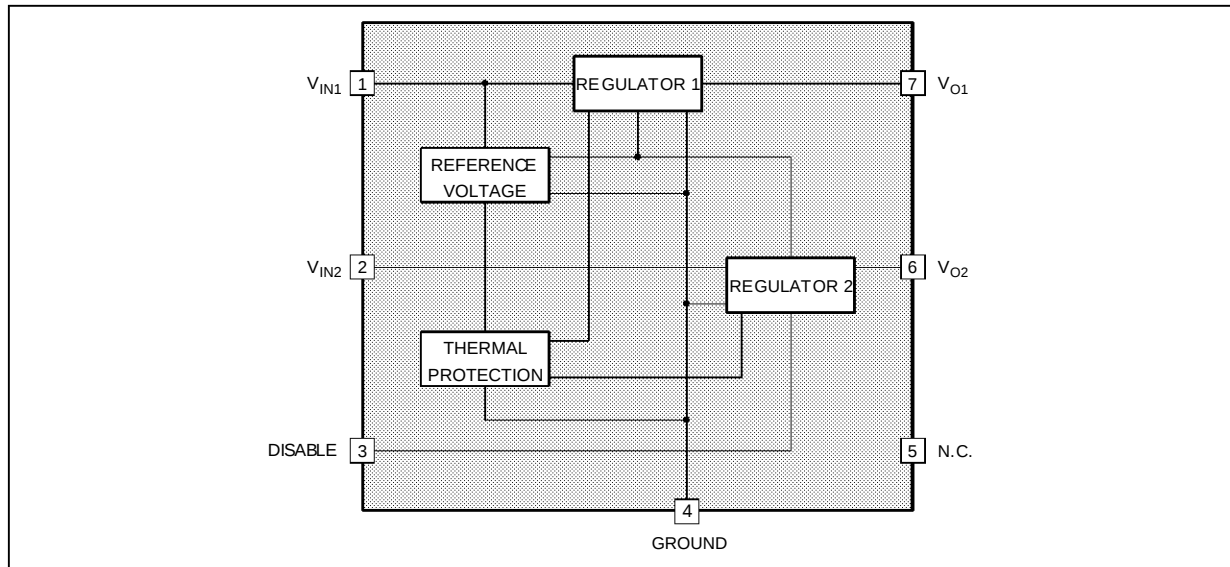
ORDER CODE : TDA8135

PIN CONNECTIONS



8135-01EPS

BLOCK DIAGRAM



8134-02.EPS

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{IN1, 2}$	DC Input Voltages	24	V
V_{DIS}	Disable Input Voltage Pin 3	24	V
$I_{O1, 2}$	Output Currents	Internally Limited	
P_t	Power Dissipation	Internally Limited	
T_{STG}	Storage Temperature	- 65 to + 150	°C
T_j	Junction Temperature	0 to + 150	°C

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THERMAL DATA

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

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ELECTRICAL CHARACTERISTICS

($V_{IN1} = 7V$; $V_{IN2} = V_{O2} + 2V$; $V_{DIS} = 2.5V$; $I_{O1,2} = 0$; $T_j = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_{O1}	Output Voltage at Pin 7		4.9	5	5.1	V
V_{O2}	Output Voltage at Pin 6	Adjustable	5		14	V
I_{Q1}	Quiescent Current	$V_{IN2} = 0, V_{DIS} = 0$ $I_{O1} = 10mA$, (see fig. 1)			2	mA
I_{Q2}	Quiescent Current	$I_{O2} = 10mA$ (see fig. 1)			2	mA
$V_{IN1}-V_{O1}$	Drop Out Voltage 1	$I_{O1} = 400mA$			1.5	V
$V_{IN2}-V_{O2}$	Drop Out Voltage 2	$I_{O2} = 400mA$			1.5	V
ΔV_{O1LI}	Line Regulation 1	$7V < V_{IN1} < 14V, I_{O1} = 200mA$			90	mV
ΔV_{O2LI}	Line Regulation 2	$12V < V_{IN2} < 20V, I_{O2} = 200mA$ $V_{O2} = 10V$			120	mV
ΔV_{O1LO}	Load Regulation 1	$0 < I_{O1} < 600mA$			100	mV
ΔV_{O2LO}	Load Regulation 2	$0 < I_{O2} < 600mA, V_{O2} = 10V$			200	mV

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ELECTRICAL CHARACTERISTICS (continued)

($V_{IN1} = 7V$; $V_{IN2} = V_{O2} + 2V$; $V_{DIS} = 2.5V$; $I_{O1,2} = 0$; $T_j = 25^\circ C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{O1SC}	Short Circuit Current 1	$7V < V_{IN1} < 14V$			1.3	A
I_{O2SC}	Short Circuit Current 2	$V_{O2} + 2V < V_{IN2} < 20V$			1.3	A
V_{DISH}	Disable Voltage HIGH at Pin 3		2			V
V_{DISL}	Disable Voltage LOW at Pin 3				0.8	V
V_{PROG}	Reference Voltage at Pin 5			2.5		V
I_{DISH}	Bias Current at Pin 3	$V_{DIS} = 5.3V$			10	μA
I_{DISL}	Bias Current at Pin 3	$V_{DIS} = 0.4V$	-80			μA
SVR_1	Supply Voltage Rejection 1 (see note 1)	$V_{IN1} = 9V_{DC} + 1V_{PP} \text{ SIN}$ $f = 120\text{Hz}, I_{O1} = 200\text{mA}$	50			dB
SVR_2	Supply Voltage Rejection2 (see note 1)	$V_{IN2} = 16V_{DC} + 1V_{PP} \text{ SIN}$ $f = 120\text{Hz}, I_{O2} = 200\text{mA}$	50			dB
I_Q	Quiescent Current	$I_{O1} = I_{O2} = 200\text{mA}$			6	mA
T_{JSD}	Thermal Shut-down Junction Temperature			145		$^\circ C$

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Note 1 : SVR supply voltage rejection :

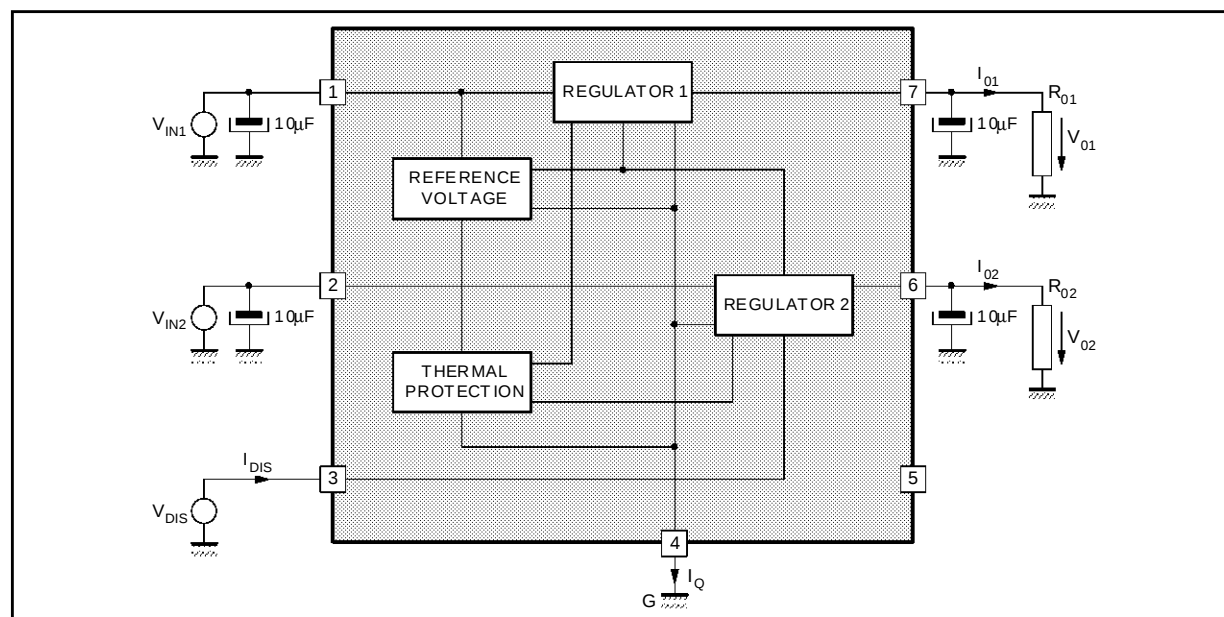
$$20 \cdot \text{LOG} \cdot \left| \frac{V_{INac}}{V_{Oac}} \right|$$

where :

V_{INac} is the value of the sinusoidal signal forced at the input. (120Hz, 1V_{PP})

V_{Oac} is the peak-peak ripple voltage present at the output

Figure 1 : Test Circuit



8135-03.EPS

TDA8135

CIRCUIT DESCRIPTION

The TDA8135 is a dual voltage regulator with disable.

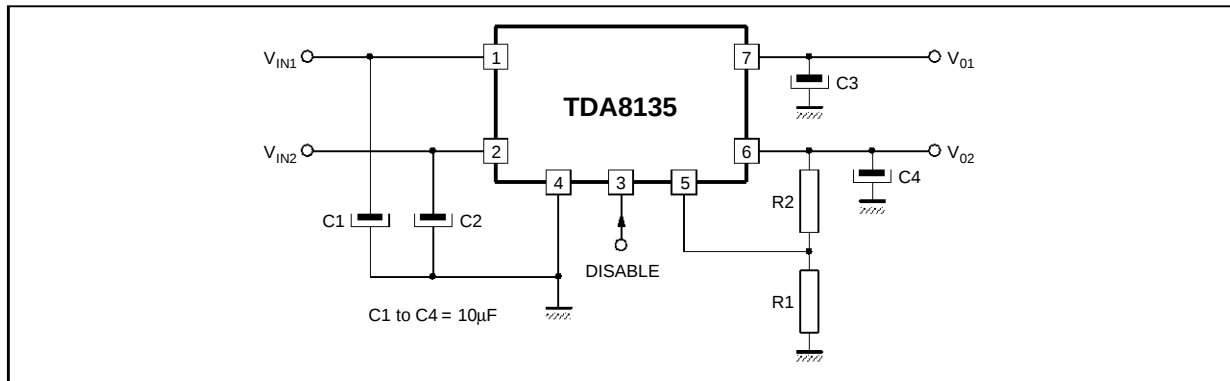
The two regulation parts are supplied from one voltage reference circuit, trimmed by zener zap during EWS test. Since the supply voltage of this last is connected at Pin 1 (V_{IN1}), the regulator 2 will

not work if the Pin 1 is not supplied.

It is possible to switch-off the output voltage 2 (V_{O2}) by applying at Pin 3 (disable input) a low TTL level.

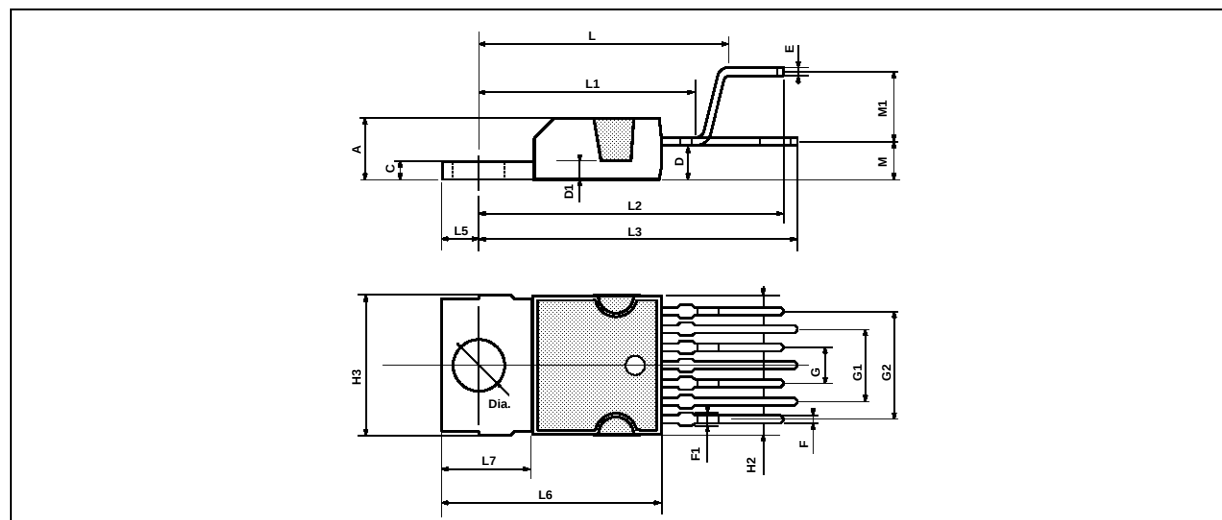
$$V_{O2} = V_{\text{PROG}} \cdot \frac{R1 + R2}{R1}$$

TYPICAL APPLICATION



8135-04.EPS

PACKAGE MECHANICAL DATA **9 PINS - PLASTIC HEPTAWATT**



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	7.8	0.295	0.300	0.307
H2			10.4			0.409
H3	10.05		10.4	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	0.102		0.118
L6	15.1		15.8	0.594		0.622
L7	6		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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