

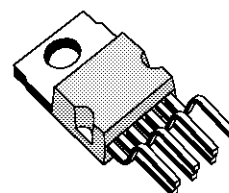
## DUAL 12V REGULATOR WITH DISABLE

- OUTPUT CURRENTS UP TO 600mA
- FIXED PRECISION OUTPUT 1 VOLTAGE  
12V  $\pm$  2%
- FIXED PRECISION OUTPUT 2 VOLTAGE  
12V  $\pm$  2%
- 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 TDA8136 is a monolithic dual positive voltage regulator designed to provide fixed precision output voltages, both 12V at currents up to 600mA.

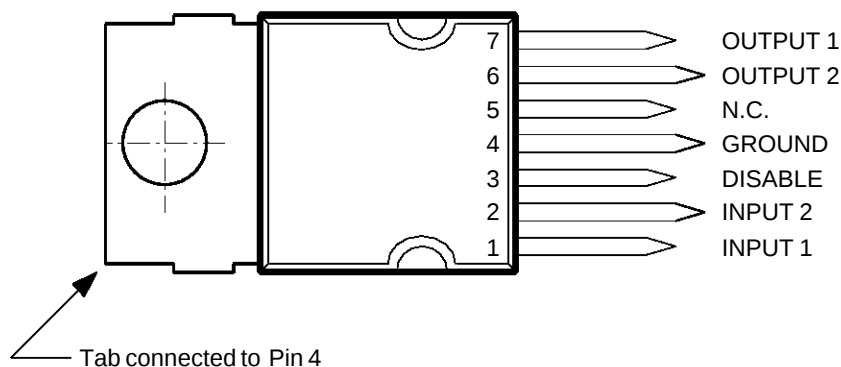
Output 2 can be disabled by a TTL input. Both output currents are limited by an internal short circuit protection.



**HEPTAWATT**  
(Plastic Package)

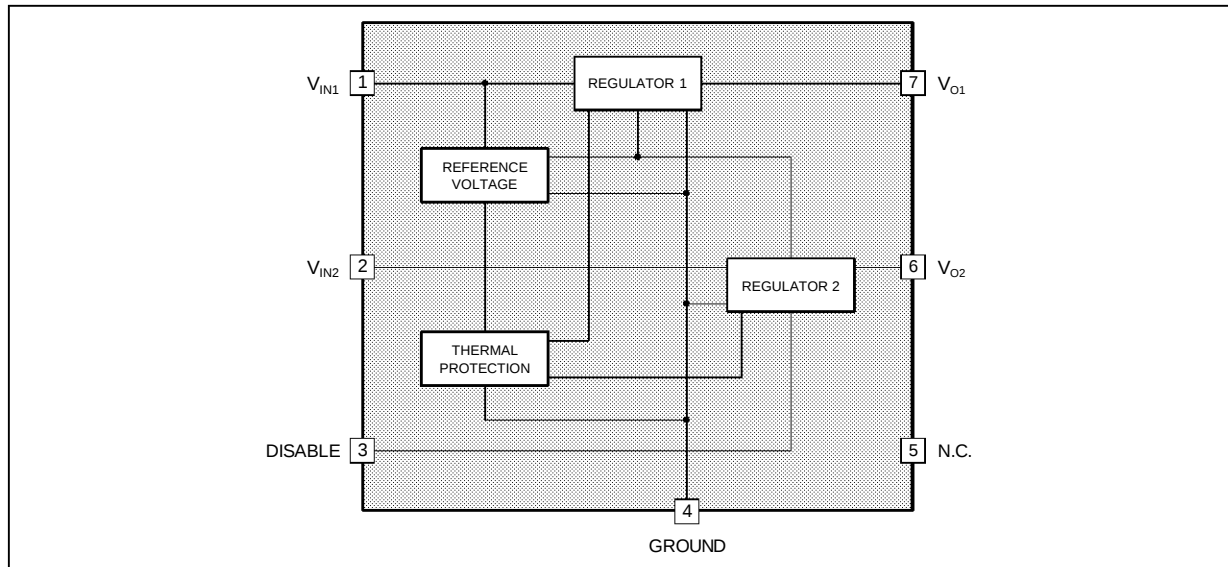
**ORDER CODE : TDA8136**

### PIN CONNECTIONS



8136-01EPS

## BLOCK DIAGRAM



8136-02.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

( $V_{IN1,2} = 14V$  ;  $V_{DIS} = 2.5V$  ;  $I_{O1,2} = 0$  ;  $T_j = 25^\circ C$  unless otherwise specified)

| Symbol            | Parameter               | Test Conditions                                              | Min.  | Typ. | Max.  | Unit |
|-------------------|-------------------------|--------------------------------------------------------------|-------|------|-------|------|
| $V_{O1}$          | Output Voltage at Pin 7 |                                                              | 11.76 | 12   | 12.24 | V    |
| $V_{O2}$          | Output Voltage at Pin 6 |                                                              | 11.76 | 12   | 12.24 | V    |
| $I_{Q1}$          | Quiescent Current       | $V_{IN2} = 0, V_{DIS} = 0$<br>$I_{O1} = 10mA$ , (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    |
| $\Delta V_{O1LI}$ | Line Regulation 1       | $14V < V_{IN1} < 18V, I_{O1} = 200mA$                        |       |      | 120   | mV   |
| $\Delta V_{O2LI}$ | Line Regulation 2       | $14V < V_{IN2} < 18V, I_{O2} = 200mA$                        |       |      | 120   | mV   |
| $\Delta V_{O1LO}$ | Load Regulation 1       | $0 < I_{O1} < 600mA$                                         |       |      | 240   | mV   |
| $\Delta V_{O2LO}$ | Load Regulation 2       | $0 < I_{O2} < 600mA$                                         |       |      | 240   | mV   |

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**ELECTRICAL CHARACTERISTICS** (continued)

( $V_{IN1,2} = 14V$  ;  $V_{DIS} = 2.5V$  ;  $I_{O1,2} = 0$  ;  $T_j = 25^{\circ}C$  unless otherwise specified)

| Symbol     | Parameter                               | Test Conditions                                                           | Min. | Typ. | Max. | Unit        |
|------------|-----------------------------------------|---------------------------------------------------------------------------|------|------|------|-------------|
| $I_{O1SC}$ | Short Circuit Current 1                 | $14V < V_{IN1} < 18V$                                                     |      |      | 1.3  | A           |
| $I_{O2SC}$ | Short Circuit Current 2                 | $14V < V_{IN2} < 18V$                                                     |      |      | 1.3  | A           |
| $V_{DISH}$ | Disable Voltage HIGH at Pin 3           |                                                                           | 2    |      |      | V           |
| $V_{DISL}$ | Disable Voltage LOW at Pin 3            |                                                                           |      |      | 0.8  | V           |
| $I_{DISH}$ | Bias Current at Pin 3                   | $V_{DIS} = 5.3V$                                                          |      |      | 10   | $\mu A$     |
| $I_{DISL}$ | Bias Current at Pin 3                   | $V_{DIS} = 0.4V$                                                          | -80  |      |      | $\mu A$     |
| $SVR_1$    | Supply Voltage Rejection 1 (see note 1) | $V_{IN1} = 16V_{DC} + 1V_{PP} \text{ SIN}$<br>$f = 120Hz, I_{O1} = 200mA$ | 50   |      |      | dB          |
| $SVR_2$    | Supply Voltage Rejection2 (see note 1)  | $V_{IN2} = 16V_{DC} + 1V_{PP} \text{ SIN}$<br>$f = 120Hz, I_{O2} = 200mA$ | 50   |      |      | dB          |
| $I_Q$      | Quiescent Current                       | $V_{IN1} = V_{IN2} = 14V_{DC}$<br>$I_{O1} = I_{O2} = 200mA$ (see fig. 1)  |      |      | 6    | mA          |
| $T_{JSD}$  | Thermal Shut-down Junction Temperature  |                                                                           |      | 145  |      | $^{\circ}C$ |

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**Note 1 :** SVR supply voltage rejection :

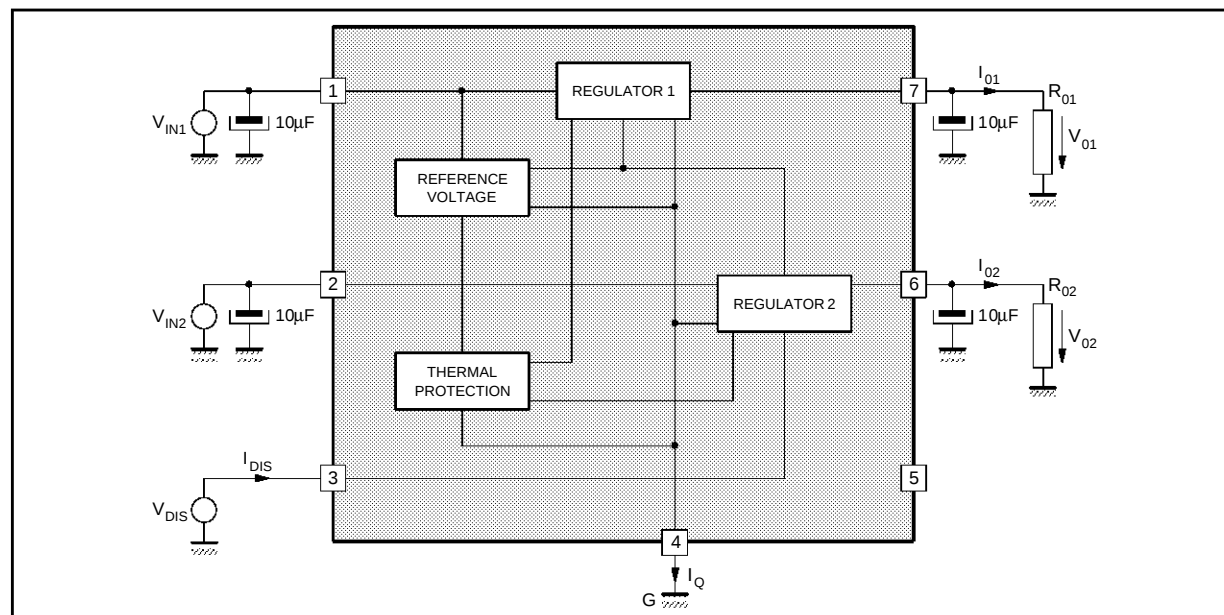
$$20 \cdot \log \left| \frac{V_{INac}}{V_{Oac}} \right|$$

where :

$V_{INac}$  is the value of the sinusoidal signal forced at the input. (120Hz, 1V<sub>PP</sub>)

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

**Figure 1 : Test Circuit**



8136-03.EPS

## TDA8136

### CIRCUIT DESCRIPTION

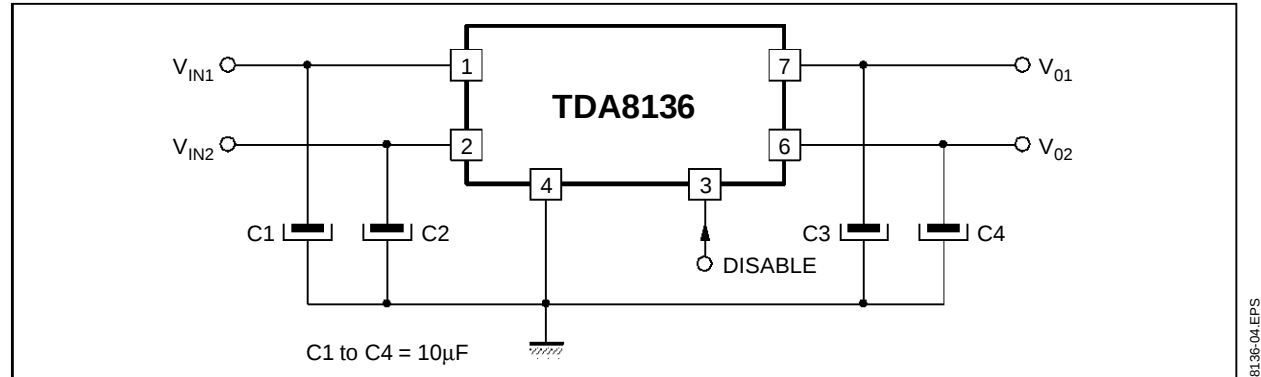
The TDA8136 is a dual voltage regulator with disable.

The two regulation parts are supplied from one voltage reference circuit, trimmed by zener zap during EWS test. Since the supply voltage of this

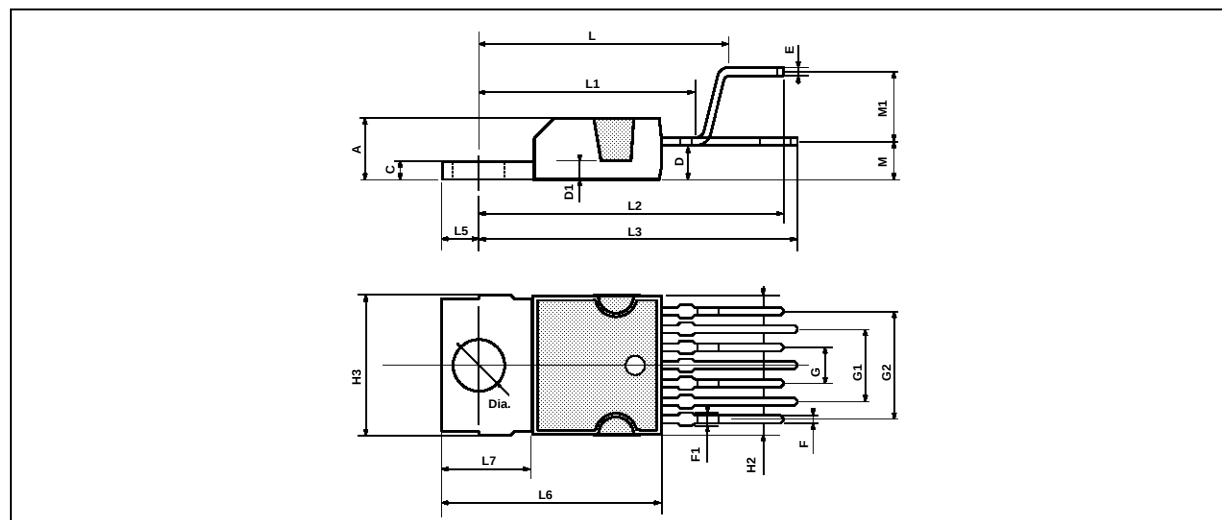
last is connected at Pin 1 ( $V_{IN1}$ ), the regulator 2 will not work if the Pin 1 is not supplied.

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

### TYPICAL APPLICATION



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



PM-HEPTV.EPS

| 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 |

HEPTV.TBL

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