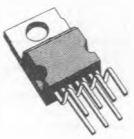
SGS-THOMSON MICROELECTRONICS

TDA8135

5V + ADJUSTABLE VOLTAGE REGULATOR WITH DISABLE

ADVANCE DATA

- OUTPUT CURRENTS UP TO 600mA
- FIXED PRECISION OUTPUT 1 VOLTAGE 5V ± 3%
- 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



HEPTAWATT

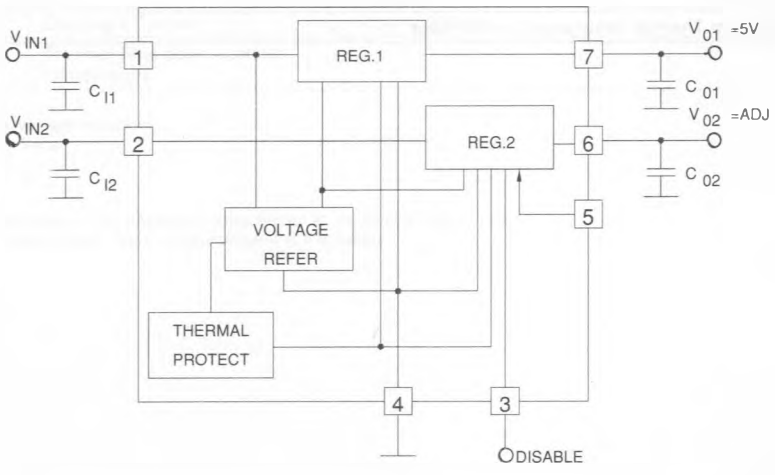
ORDER CODE : TDA8135

DESCRIPTION

The TDA8135 is a monolithic dual positive voltage regulator designed to provide 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.

BLOCK DIAGRAM



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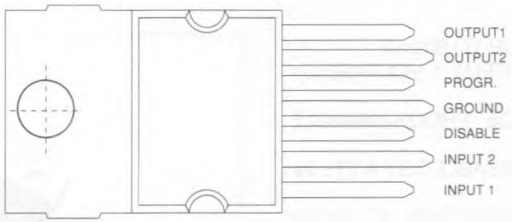
PIN CONNECTIONS



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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

THERMAL DATA

$R_{TH(j-c)}$	Maximum Thermal Resistance Junction-case	3	°C/W

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

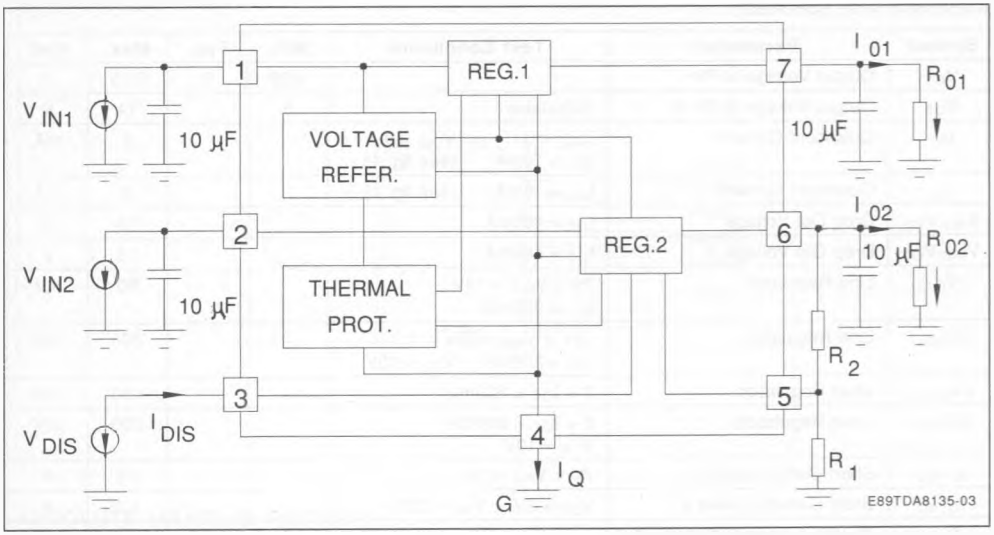
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_{O1}	Output Voltage at Pin 7		4.85	5	5.15	V
V_{O2}	Output Voltage at Pin 6	Adjustable	5		14	V
I_{Q1}	Quiescent Current	V_{IN2} = 0 V_{DIS} = 0 I_{O1} = 10mA (see fig. 1)			2	mA
I_{Q2}	Quiescent Current	I_{O2} = 10mA (see fig. 1)			2	mA
V_{IN1}-V_{O1}	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	7V < V_{IN1} < 14V I_{O1} = 200mA			90	mV
ΔV_{O2LI}	Line Regulation	12V < V_{IN2} < 20V I_{O2} = 200mA V_{O2} = 10V			200	mV
ΔV_{O1LO}	Load Regulation	0 < I_{O1} < 600mA			100	mV
ΔV_{O2LO}	Load Regulation	0 < I_{O2} < 600mA V_{O2} = 10V			200	mV
I_{O1SC}	Short Circuit Current 1	7V < V_{IN1} < 14			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} = $9V_{DC}$ + $1V_{PP}$ SIN f = 120Hz I_{O1} = 200mA	50			dB
SVR_2	Supply Voltage Rejection (see note 1)	V_{IN2} = $16V_{DC}$ + $1V_{PP}$ SIN f = 120Hz I_{O2} = 200mA	50			dB
I_Q	Quiescent Current	I_{O1} = I_{O2} = 200mA			6	mA
T_{JSD}	Thermal Shut-down Junction Temperature			145		°C

Note 1:
SVR supply voltage rejection

$$20 \cdot LOG \left| \frac{V_{IN\,ac}}{V_{O\,ac}} \right|$$

where :
- $V_{IN\,ac}$ is the value of the sinusoidal signal forced at the input. (120Hz, $1V_{PP}$)
- $V_{O\,ac}$ is the peak-peak ripple voltage present at the output

TEST SPECIFICATION



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 (Vin1), the regulator 2 will not work if the pin 1 is not supplied.

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

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

PACKAGE MECHANICAL DATA

HEPTAWATT – PLASTIC PACKAGE