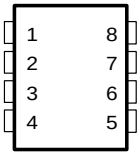
Descripon

This monolithic integrated circuit is an adjustable 3-terminal positive voltage regulator designedto supply more than 100mA of load current with an output voltage adjustable over a 1.2 to 37V. It employs internal current limiting, thermal shut-down and safe area compensation.

Pin Configuration

SOP-8(SOIC-8)

Pin 1



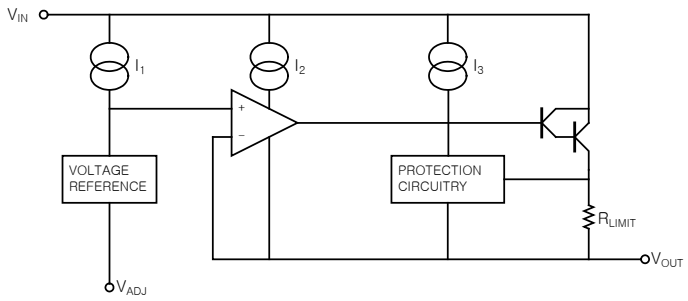
Features

- Output Current Excess of 100mA
- Output Adjustable Between 1.2V and 37V
- Internal Thermal Overload Protection
- Internal Short Current Limiting
- Output Transistor Safe-Area Compensation
- Moisture Sensitivity Level 3

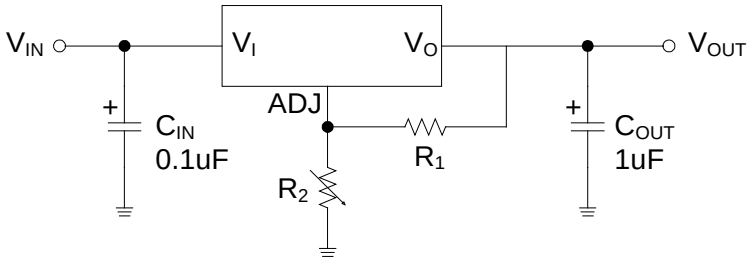
Pin Cescription

PIN No.	Name	Functions Description
1	V_{IN}	Input Voltage
2,3,6,7	V_{OUT}	Output Voltage
4	ADJ	Adjustable
5,8	-	N.C.

Internal Bock Diahram



Typical Application



$$V_{OUT} = 1.25V(1+R_2/R_1)+I_{ADJ}R_2$$

Note 1. C_{IN} is required when regulator is located in appreciable distance from power supply filter.
Note 2. C_{OUT} is not needed for stability, however, it does improve transient response.
Note 3. I_{ADJ} is controlled to less than 100uA, the error associated with this term is negligible in most applications.

Absolute Maximum Ratings

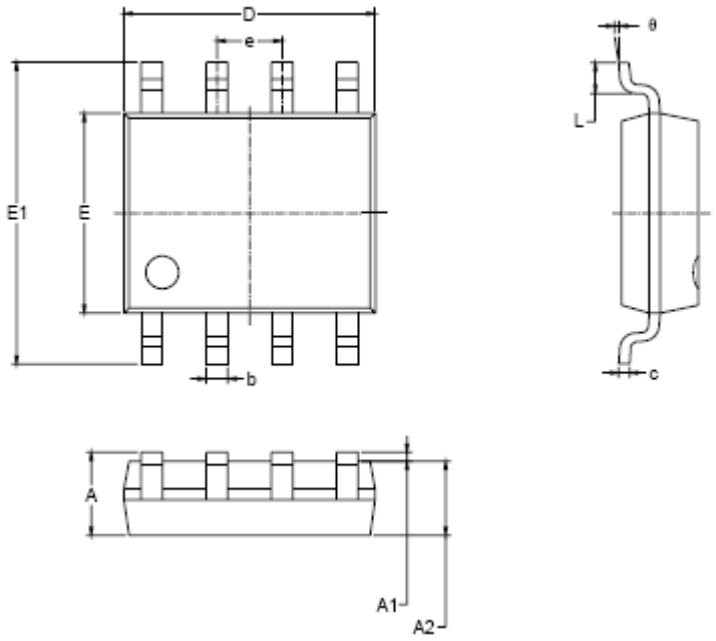
CHARACTERISTIC	SYMBOL	Value	UNIT
Input-output Voltage Differential	V_I-V_O	40	V
Lead Temperature (Soldering, 10 sec)	T_{SOL}	230	℃
Power Dissipation	P_D	Internally limited	-
Operating Junction Temperature Range	T_{JOPR}	-40 ~ 125	℃
Storage Temperature Range	T_{STG}	-65 ~ 125	℃

Electrical Characteristics (V_I-V_O=5V, I_O=40mA, -40℃≤TJ≤125℃, unless otherwise specified)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	Unit
Line Regulation	△Vo	T_A=-40 ~125℃, 3V≤V_I-V_O≤40V		0.01	0.04	%/V
		3V≤V_I-V_O≤40V		0.02	0.07	%/V
Load Regulation	△Vo	TA=25℃, 10㎃≤Io≤I_{MAX}				
		V_O≤5V		10	25	mV
		V_O≥5V		0.1	0.5	%/V
		10㎃≤Io≤IMAX				
		V_O≤5V		20	80	mV
		V_O≥5V		0.3	1.7	%/V
Adjustable Pin Current	I_{ADJ}			46	100	μA
Adjustable Pin Current Change	△I_{ADJ}	3V≤V_I-V_O≤40V, 10㎃≤I_O≤I_{MAX}, P≤P_{MAX}		0.2	5	μA
Reference Voltage	V_{REF}	3V≤V_{IN}-V_{OUT}≤40V, 10㎃≤Io≤I_{MAX}, P_D≤P_{MAX}	1.20	1.25	1.30	V
Temperature Stability	ST_T			0.7		%/Vo
Minimum Load Current to Maintain Regulation	$L_{(MIN)}$	V_I-V_o=40V		3.5	10	mA
Maximum Output Current	$I_{O(MAX)}$	V_I-V_o≤5V, P_D≤P_{MAX}	100	200		mA
		V_I-V_O≤40V, P_D≤P_{MAX}, T_A=25℃	0.156	0.4		
RMS Noise, % of VOUT	e_N	T_A=25℃, 10Hz≤f≤10KHz		0.003	0.01	%/V_O
Ripple Rejection	RR	V_O=10V, f=120Hz, without C_{ADJ}		60		dB
		C_{ADJ}=10μF	66	75		
Long-Term Stability, T_J=T_{HIGH}	ST	TA=25℃, for end point measurements, 1000HR		0.3	1	%

* Load and line regulation are specified at constant junction temperature. Change in VD due to heating effects must be taken into account separately. Pulse testing with low duty is used.

SOP-8(SOIC-8) Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.27 BSC		0.050 BSC	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

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