



### DESCRIPTION

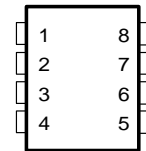
This monolithic integrated circuit is an adjustable 3-terminal positive voltage regulator designed to supply more than 100mA of load current with an output voltage adjustable over a 1.2 to 37V. It employs internal current limiting, thermal shut-down and safe area compensation.

### PIN CONFIGURATION

SOP-8



Pin 1



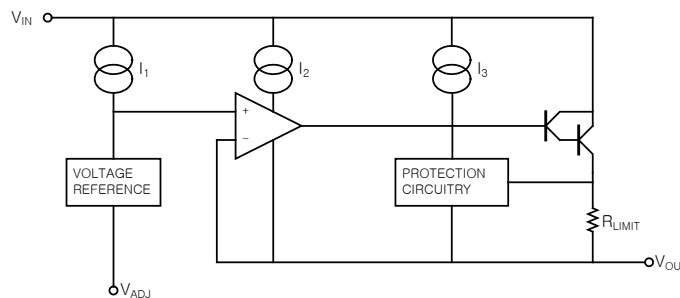
### FEATURES

- 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

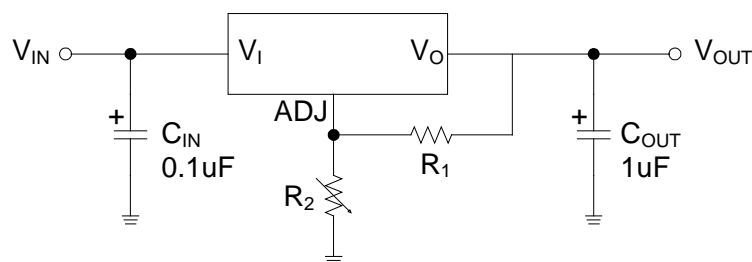
### PIN DESCRIPTION

PIN No.	Name	Functions Description
<b>SOP-8</b>		
1	V <sub>IN</sub>	Input Voltage
2,3,6,7	V <sub>OUT</sub>	Output Voltage
4	ADJ	Adjustable
5,8	-	N.C.

### BLOCK DIAGRAM



### TYPICAL APPLICATION



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

Note 1. C<sub>IN</sub> is required when regulator is located in appreciable distance from power supply filter.

Note 2. C<sub>OUT</sub> is not needed for stability, however, it does improve transient response.

Note 3. I<sub>ADJ</sub> 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	°C
Power Dissipation	$P_D$	Internally limited	-
Operating Junction Temperature Range	$T_{JOPR}$	-40 ~ 125	°C
Storage Temperature Range	$T_{STG}$	-65 ~ 125	°C

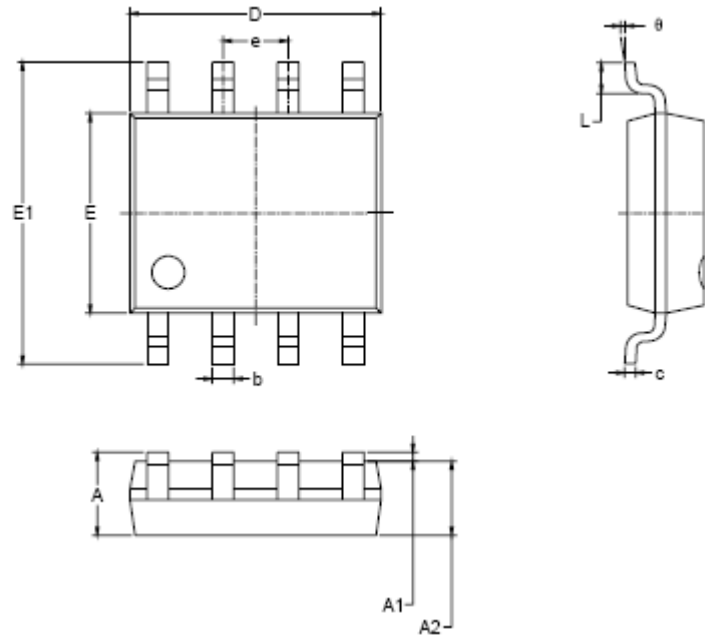
### RECOMMENDED OPERATING RATINGS ( $V_I-V_O=5V$ , $I_O=40mA$ , $-40^{\circ}C \leq T_J \leq 125^{\circ}C$ , unless otherwise specified)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	Unit		
Line Regulation	$\Delta V_O$	$T_A=-40 \sim 125^{\circ}C$	$3V \leq V_I-V_O \leq 40V$		0.01	0.04	%/V	
			$3V \leq V_I-V_O \leq 40V$		0.02	0.07	%/V	
Load Regulation	$\Delta V_O$	$T_A=25^{\circ}C$ , $10mA \leq I_O \leq I_{MAX}$	$V_O \leq 5V$		10	25	mV	
			$V_O \geq 5V$		0.1	0.5	%/V	
			$10mA \leq I_O \leq I_{MAX}$					
			$V_O \leq 5V$		20	80	mV	
			$V_O \geq 5V$		0.3	1.7	%/V	
Adjustable Pin Current	$I_{ADJ}$			46	100	$\mu A$		
Adjustable Pin Current Change	$\Delta I_{ADJ}$	$3V \leq V_I-V_O \leq 40V$ $10mA \leq I_O \leq I_{MAX}$ $P \leq P_{MAX}$		0.2	5	$\mu A$		
Reference Voltage	$V_{REF}$	$3V \leq V_{IN}-V_{OUT} \leq 40V$ $10mA \leq I_O \leq I_{MAX}$ $P_D \leq P_{MAX}$	1.20	1.25	1.30	V		
Temperature Stability	$ST_T$			0.7		%/V <sub>O</sub>		
Minimum Load Current to Maintain Regulation	$L_{(MIN)}$	$V_I-V_O=40V$		3.5	10	mA		
Maximum Output Current	$I_{O(MAX)}$	$V_I-V_O \leq 5V$ , $P_D \leq P_{MAX}$	100	200		mA		
		$V_I-V_O \leq 40V$ , $P_D \leq P_{MAX}$ , $T_A=25^{\circ}C$	0.156	0.4				
RMS Noise, % of V <sub>OUT</sub>	$e_N$	$T_A=25^{\circ}C$ , $10Hz \leq f \leq 10KHz$		0.003	0.01	%/V <sub>O</sub>		
Ripple Rejection	RR	$V_O=10V$ , $f=120Hz$ without $C_{ADJ}$		60		dB		
		$C_{ADJ}=10\mu F$	66	75				
Long-Term Stability, $T_J=T_{HIGH}$	ST	$T_A=25^{\circ}C$ , 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.



**PACKAGE INFORMATION**  
**SOP-8**



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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