

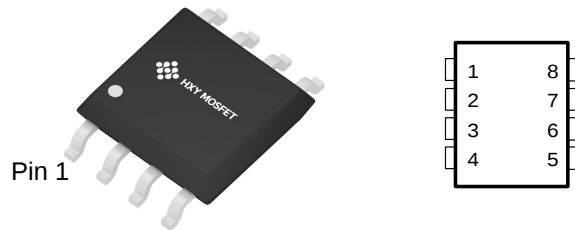


Descripon

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(SOIC-8)



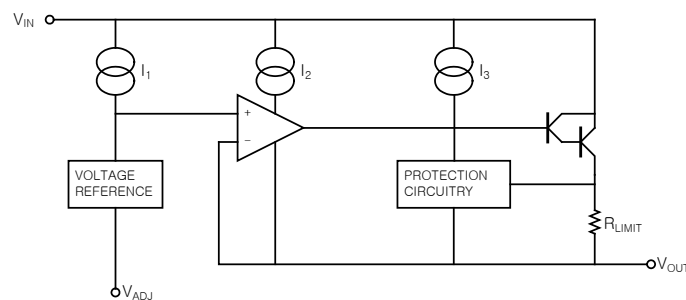
Features

- 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

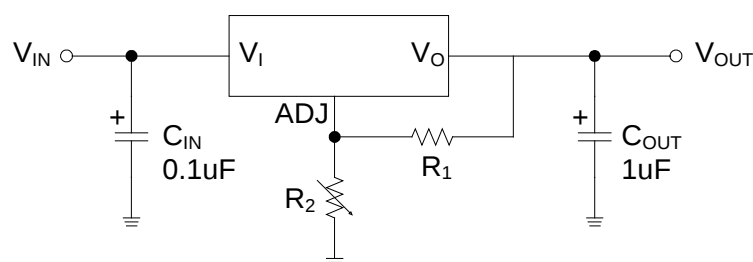
Pin Cescription

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	°C
Power Dissipation	P_D	Internally limited	-
Operating Junction Temperature Range	T_{JOPR}	-40 ~ 125	°C
Storage Temperature Range	T_{STG}	-65 ~ 125	°C

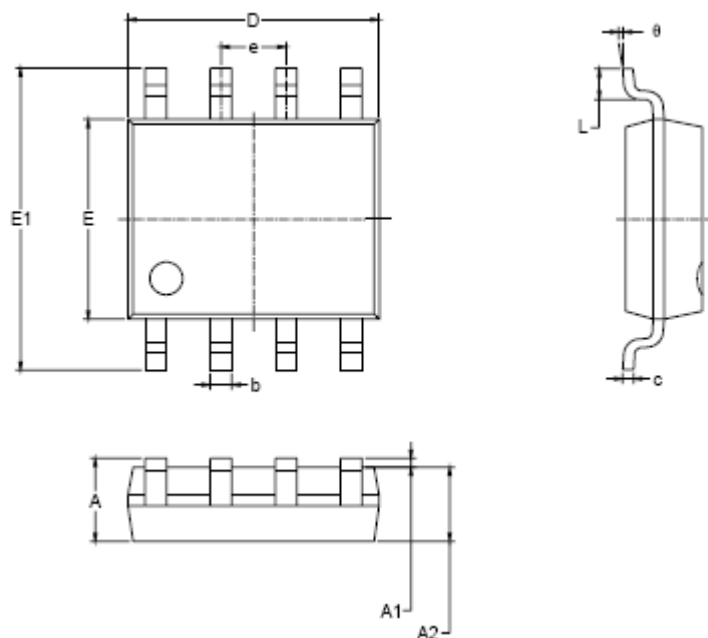
Electrical Characteristics ($V_I - V_O = 5V$, $I_O = 40mA$, $-40^\circ C \leq T_J \leq 125^\circ C$, unless otherwise specified)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	Unit
Line Regulation	ΔV_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	ΔV_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	μA
Adjustable Pin Current Change	ΔI_{ADJ}	$3V \leq V_I - V_O \leq 40V$ $10mA \leq I_O \leq I_{MAX}$ $P \leq P_{MAX}$		0.2	5	μA
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 _O
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 _{OUT}	e_N	$T_A = 25^\circ C$, $10Hz \leq f \leq 10KHz$		0.003	0.01	%/V _O
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 V_D 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
theta	0°	8°	0°	8°



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