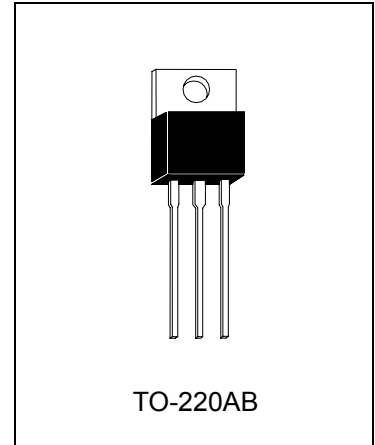


3A Low Dropout Positive Voltage Regulator

PL1085-XXXE3



Features

- Dropout Voltage 1.3V at 3A Output Current.
- Fast Transient Response.
- Extremely Tight Line and Load Regulation.
- Current Limiting and Thermal Protection.
- Adjustable Output Voltage or Fixed 1.5V, 1.8V, 2.5V, 2.85, 3.0V, 3.3V, 3.5V, 5.0V.
- Standard 3-Pin Power Packages.

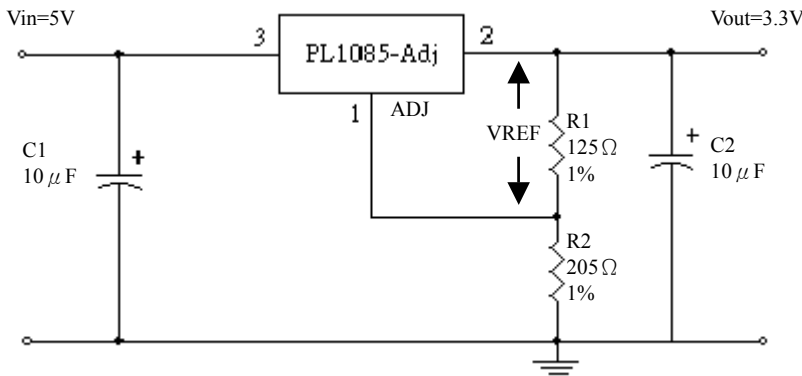
Description

The PL1085-XXXE3 is a low dropout three terminal regulator with 3A output current capability. The output voltage is adjustable with the use of a resistor divider or fixed 1.5V, 1.8V, 2.5V, 2.85V, 3.0V, 3.3V, 3.5V and 5.0V. Dropout voltage is guaranteed to be at maximum of 1.3V with the maximum output current. Its low dropout voltage and fast transient response make it ideal for low voltage microprocessor applications. Current limit and thermal protection provide protection against any overload condition that would create excessive junction temperatures.

Applications

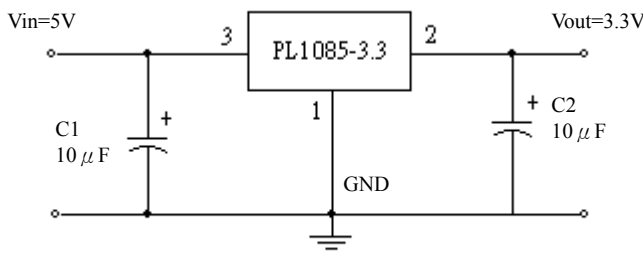
- Mother Board I/O Power Supplies.
- Microprocessor Power Supplies.
- High Current Regulator.
- Post Regulator for Switching Supply.

Typical Application Circuit



Adjustable Voltage Regulator

$V_{REF} = V_{OUT} - V_{ADJ} = 1.25V(\text{typ})$
 $V_{OUT} = V_{REF}(1 + R1/R2) + I_{ADJ} \times R2$
 $I_{ADJ} = 55\mu A(\text{typ.})$
 (1) C1 needed if device is far away from filter capacitors.
 (2) C2 required for stability.



Fixed Voltage Regulator



Ordering Information

Device	Output Voltage	Device	Output Voltage
PL1085-AdjE3	Adjustable	PL1085-3.0E3	3.0V
PL1085-1.5E3	1.5V	PL1085-3.3E3	3.3V
PL1085-1.8E3	1.8V	PL1085-3.5E3	3.5V
PL1085-2.5E3	2.5V	PL1085-5.0E3	5.0V
PL1085-2.85E3	2.85V		

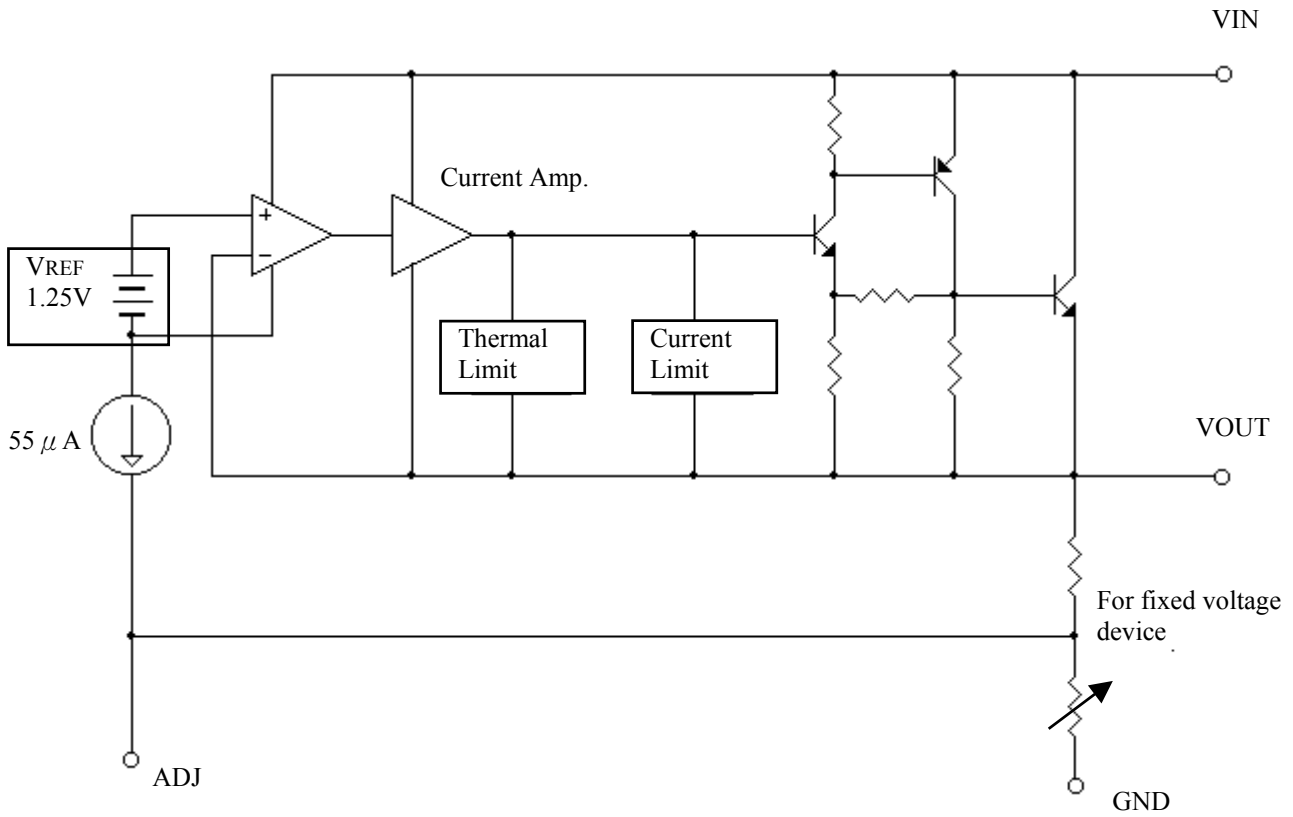
Absolute Maximum Ratings

VIN pin to ADJ/GND pin	7V
Operating Junction Temperature Range	0°C~ 125°C
Storage Temperature Range.....	- 65°C ~ 150°C
Thermal Resistance Junction to Case	3°C /W
Thermal Resistance Junction to Ambient (Assume no ambient airflow, no heatsink)	50°C /W
Lead Temperature (Soldering) 10 sec.	260°C

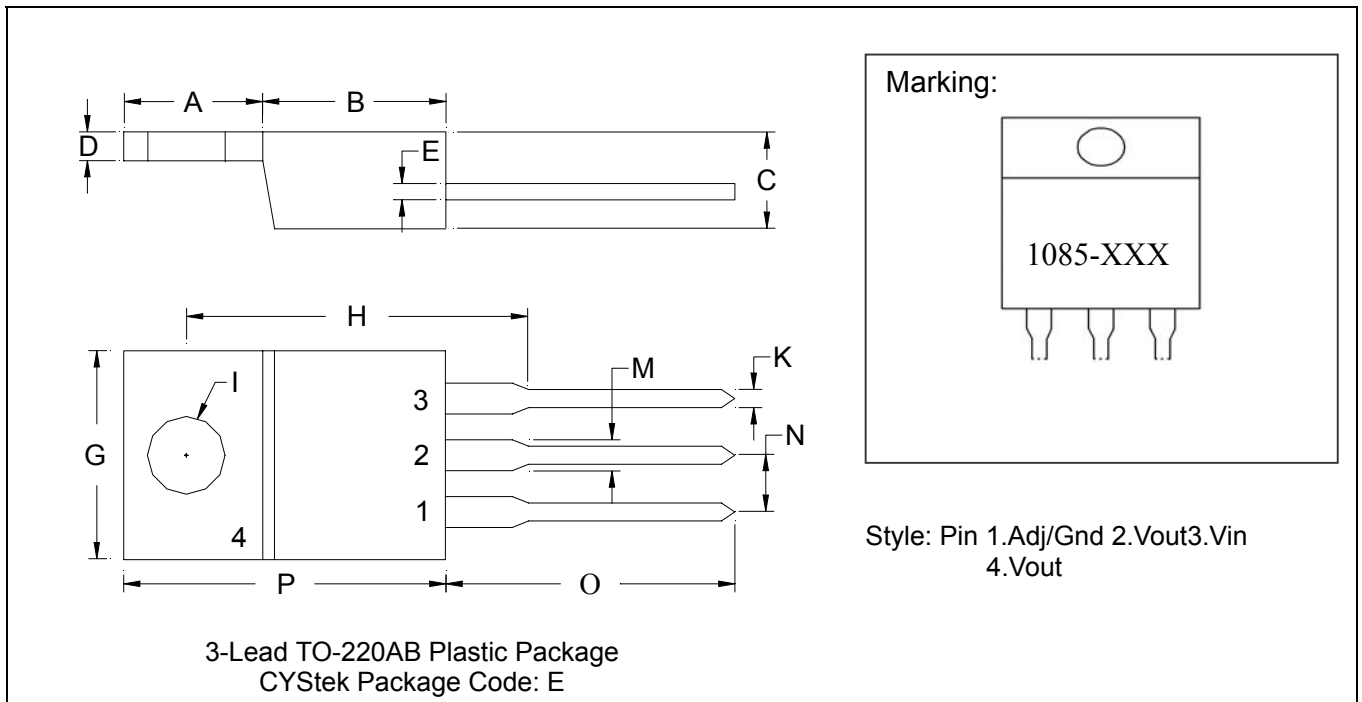
Electrical Characteristics (Vin=5V, Io=10mA, Tj=25°C, unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
VREF	Reference Voltage	Tj=25°C	1.238	1.250	1.262	V
Vo	Output Voltage	PL1085-1.5 PL1085-1.8 PL1085-2.5 PL1085-2.85 PL1085-3.0 PL1085-3.3 PL1085-3.5 PL1085-5.0	1.48 1.78 2.47 2.82 2.97 3.26 3.46 4.95	1.50 1.80 2.50 2.85 3.00 3.30 3.50 5.00	1.52 1.82 2.53 2.88 3.03 3.34 3.54 5.05	V
ΔVo	Line Regulation	Adj : 2.65V≤Vin≤7V, Tj=25°C Fix : 1.4+Vout≤Vin≤7V	-	0.015	0.2	%
ΔVo	Load Regulation	10mA≤Io≤3A, Tj=25°C	-	-	0.6	%
Is	Current Limit	Vin-Vout=1.5V	3	-	-	A
IAdj	Adjust Pin Current	2.65V≤Vin≤7V	-	55	90	μA
ΔIAdj	Adjust Pin Current Change	2.65V≤Vin≤7V, 0°C≤Tj≤125°C	-	0.2	5	μA
Ts	Temperature Stability	Io=0.5A, 0°C≤Tj≤125°C	-	0.5	-	%
IL	Minimum Load Current	0°C≤Tj≤125°C	-	5	10	mA
VN	RMS Output Noise(% of Vout)	10Hz≤f≤10KHz, Tj=25°C	-	0.003	-	%
RR	Ripple Rejection Ratio	Vin-Vout=3V, f=120Hz, Cout=25 μF	60	72	-	dB
VD	Dropout Voltage	ΔVout, ΔVREF=1%, 10mA≤Io≤3A 0°C≤Tj≤125°C	-	1.2	1.3	V

Block Diagram



TO-220AB Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.2197	0.2949	5.58	7.49	I	-	*0.1508	-	*3.83
B	0.3299	0.3504	8.38	8.90	K	0.0295	0.0374	0.75	0.95
C	0.1732	0.185	4.40	4.70	M	0.0449	0.0551	1.14	1.40
D	0.0453	0.0547	1.15	1.39	N	-	*0.1000	-	*2.54
E	0.0138	0.0236	0.35	0.60	O	0.5000	0.5618	12.70	14.27
G	0.3803	0.4047	9.66	10.28	P	0.5701	0.6248	14.48	15.87
H	-	*0.6398	-	*16.25					

Notes: 1. Controlling dimension: millimeters.

2. Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.

3. If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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