

FEATURES

- Adjustable Output Down to 1.2V
- Output Current of 3A
- Low Dropout Voltage
- Extremely Tight Load Regulation 0.01%(typ.)
- Extremely Tight Line Regulation 0.015%(typ.)
- Current and Thermal Limiting
- Standard 3-Terminal Low Cost TO-220
- Similar to Industry Standard LT1085

APPLICATIONS

- Powering Intel Pentium™ μ P from +5V Supplies
- Power PC™ Supplies
- SMPS Post-Regulator
- High Efficiency "Green" Computer Systems
- High Efficiency Linear Power Supplies
- Portable Instrumentation
- Constant Current Regulators
- Adjustable Power Supplies
- Battery Chargers

PRODUCT DESCRIPTION

The Calogic CLM2830 is a low power 3A adjustable voltage regulator that is very easy to use. It requires only 2 external resistors to set the output voltage. This device is an excellent choice for use in powering Intel™ microprocessors to convert from +5V to 3.3V supplies and as a post regulator for switching supplies applications.

The CLM2830 offers full protection against over-current faults, reversed input polarity, reversed load insertion, and positive and negative transient voltage. On-Chip trimming adjusts the reference voltage to 1%. The I_Q of this device flows into the load which increases the efficiency.

The CLM2830 is offered in a 3-pin TO-220 package compatible with older 3 terminal regulators. For a 5A low dropout regulator refer to the CLM2850 data sheet.

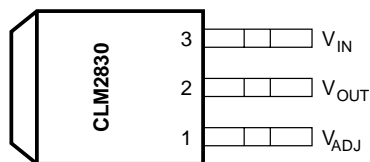
ORDERING INFORMATION

PART	PACKAGE	TEMPERATURE
CLM2830AU	TO-220 (3-Pin)	IND.
CLM2830AT	TO-263 Plastic (3-Pin)	IND.

For fixed output voltage contact factory.

PIN CONNECTIONS

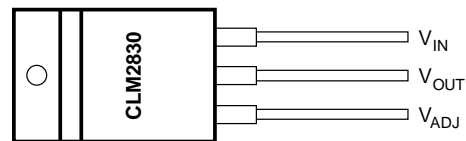
PLASTIC TO-263 PACKAGE



FRONT VIEW

1E-40

PLASTIC PACKAGE TO-220



FRONT VIEW

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ABSOLUTE MAXIMUM RATINGS

Lead Temp. (Soldering, 10 Seconds)	300°C	Input Supply Voltage	+30V
Storage Temperature Range	-65 to +150°C	Input to Output Voltage Differential	+30V
Operating Junction Temperature Range			
CLM2830 Control Section	0°C to +125°C		
CLM2830 Power Transistor	0°C to +150°C		

ELECTRICAL CHARACTERISTICS: (Note 1) I_{OUT} = 10mA, T_A = 25°C, unless otherwise specified.

PARAMETER	CLM2830			UNITS	CONDITIONS
	MIN	TYP	MAX		
Reference Voltage	1.238 1.225	1.250 1.250	1.262 1.270	V V	10mA ≤ I _{OUT} ≤ I _{FULLLOAD} 1.5V ≤ (V _{IN} - V _{OUT}) ≤ 25V (Over Temperature)
Min. Load Current		40 5	50 10	mA mA	(V _{IN} - V _{OUT}) = +25V, CLM2830A CLM2830
Line Regulation		0.015 0.035 0.05	0.2 0.2 0.5	% % %	1.5V ≤ V _{IN} - V _{OUT} ≤ 15V I _{LOAD} = 10mA 15V ≤ V _{IN} - V _{OUT} ≤ 30V
Load Regulation		0.1 0.2	0.3 0.4	% %	10mA ≤ I _{OUT} ≤ I _{FULLLOAD} (V _{IN} - V _{OUT}) = 3V
Dropout Voltage		1.1	1.5	V	I _{OUT} = I _{FULLLOAD} , ΔV _{REF} = 1%
Current Limit	3.2 0.2	4.0 0.5		A A	V _{IN} - V _{OUT} = 5V V _{IN} - V _{OUT} = 25V
Long Term Stability		0.3	1	%	T _A = 125°C, 1000 Hrs.
Adjust Pin Current		55	120	μA	
Adjust Pin Current Change		0.2	5	μA	
Thermal Regulation		0.004	0.02	%/W	30ms pulse
Temperature Stability		0.5		%	
Ripple Rejection Ratio	60	75		dB	V _{IN} - V _{OUT} = 3V I _{OUT} = 3A, C _{OUT} = 25μF, C _{ADJ} = 25μF, f = 120Hz
Output Noise, RMS		0.003		%V _O	10Hz to 10kHz
Thermal Resistance Junction-to-Case			0.7/3.0	°C/W	CLM2830 - TO-220 and TO-263

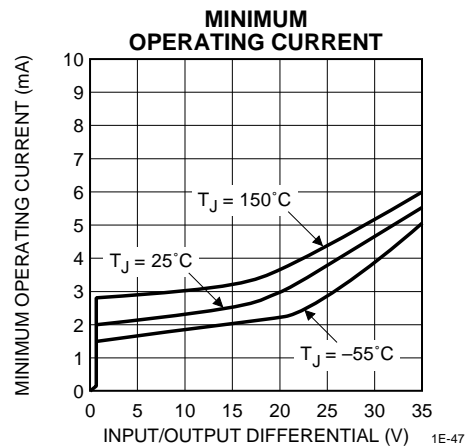
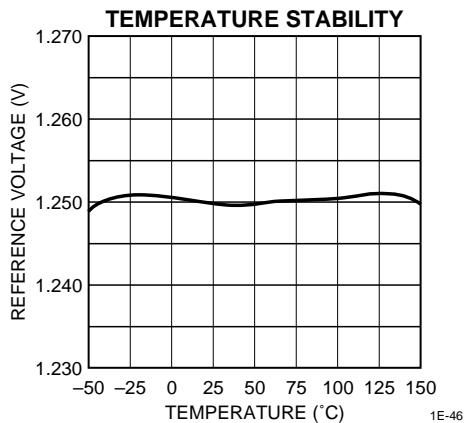
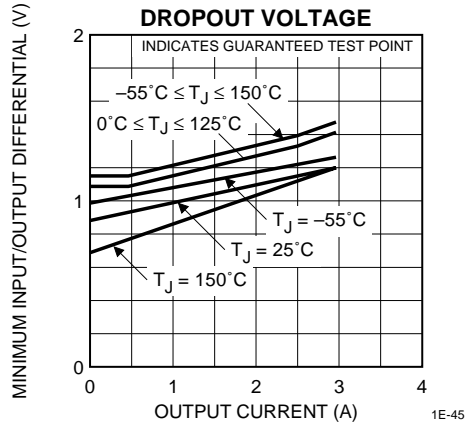
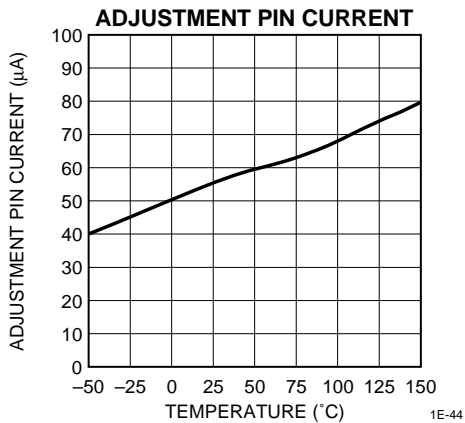
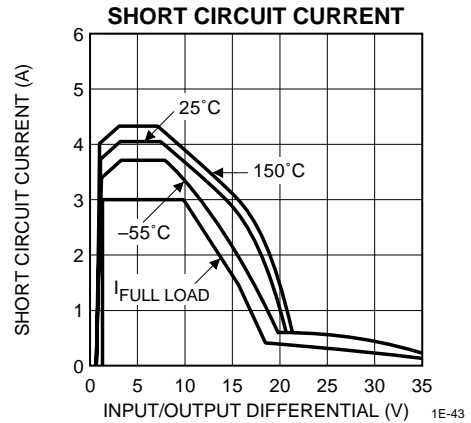
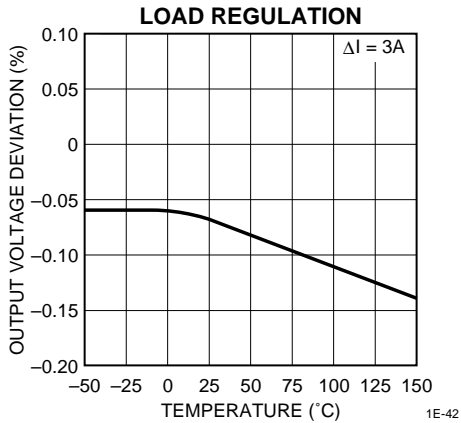
The Bold specifications apply to the over full operating temperature range.

Note 1: Changes in output voltage due to heating effects are covered under the specification for thermal regulation.

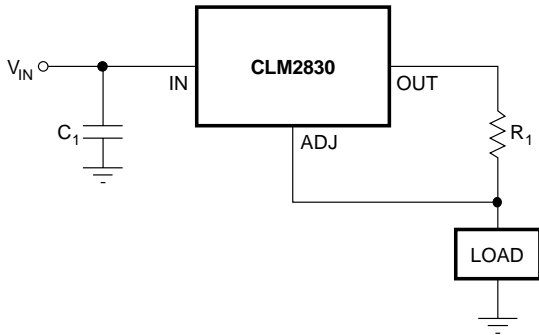
Note 2: A 10μF output capacitor is required on CLM2830.

Note 3: Value shown for control circuitry (power transistor).

TYPICAL PERFORMANCE CHARACTERISTICS

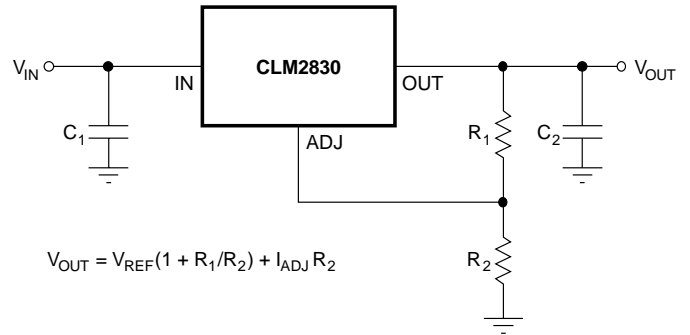


TYPICAL APPLICATIONS



3A CURRENT OUTPUT REGULATOR

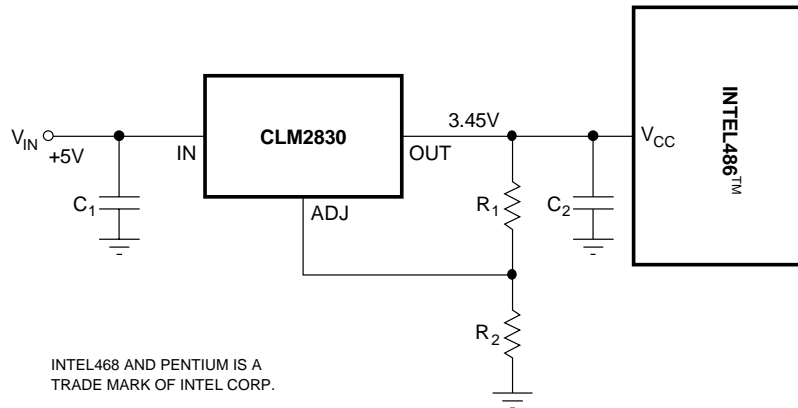
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$$V_{OUT} = V_{REF}(1 + R_1/R_2) + I_{ADJ}R_2$$

TYPICAL ADJUSTABLE REGULATOR

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POWERING INTEL PENTIUM WITH CLM2830

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