1.0A Low Dropout Regulator

CLM2810

FEATURES

- **Guaranteed 1.0A Output**
- **Three Terminal Adjustable or Fixed 2.85V, 3V, 3.3V, 5V, 10V and 12V**
- **Very Low Quiescent Current**
- **Low Dropout Voltage of 1.2V at Full Load**
- **Extremely Tight Load and Line Regulation**
- **Very Low Temperature Coefficient**
- **Fixed 2.85V Device for SCSI-II Active Terminator**
- **Logic-Controlled Electronic Shutdown**
- **Internal Overcurrent Limiting and Thermal Overload Protection**
- **Surface Mount Package SOT-223, DD PAK and TO-220**

APPLICATIONS

- **SCSI-II Active Terminator**
- **Portable/Palm Top/Notebook Computers**
- **Battery Chargers**
- **Disk Drives**
- **Portable Consumer Equipment**
- **Portable Instrumentation**
- **SMPS Post-Regulator**

DESCRIPTION

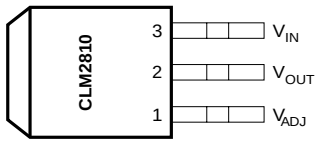
The CLM2810 is a low power, positive voltage regulator. The device has been designed to provide an output current of 1A while complying with SCSI-II specifications with a fixed output voltage of 2.85V. Applications include battery-powered and portable computers. The device has a low quiescent current while providing 1.2V drop-out voltage at a full load. Product is available as an adjustable LDO or fixed 2.85V, 3.0V, 3.3V and 5.0V output voltages.

ORDERING INFORMATION

Part	Package	Description	Temperature
CLM2810U	TO-220	Adjustable	-40°C to +85°C
CLM2810M	SOT-223	Adjustable	-40°C to +85°C
CLM2810U-X	TO-220	X = output voltage	-40°C to +85°C
CLM2810M-X	SOT-223	M = output voltage	-40°C to +85°C
CLM2810AT	DD	Adjustable	-40°C to +85°C
CLM2810AT-X	DD	X = output voltage	-40°C to +85°C

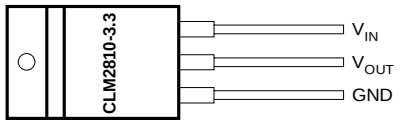
PIN CONNECTIONS

PLASTIC DD PACKAGE



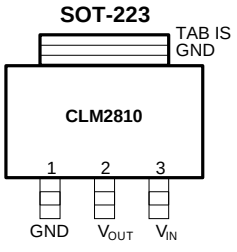
FRONT VIEW 1T-28

PLASTIC PACKAGE TO-220



FRONT VIEW 1T-29

SOT-223



FRONT VIEW 1T-30

CALOGIC CORPORATION, 237 Whitney Place, Fremont, California 94539, Telephone: 510-656-2900, FAX: 510-651-3025

calogic CORPORATION

ABSOLUTE MAXIMUM RATINGS

Power Dissipation . . . . . Internally Limited
Lead Temp. (Soldering, 5 Seconds) . . . . . 260°C
Storage Temperature Range . . . . . -65° to +150°C
Operating Junction Temperature Range . . . . -40C° to +125°C

Input Voltage . . . . . 2.5V to 6V
Input Supply Voltage . . . . . -20V to +20V
ESD Rating . . . . . 2KV Min

ELECTRICAL CHARACTERISTICS: **V_{IN} = V_{OUT}+1**, T_A = 25°C, CL = 3.3µf, unless otherwise noted. **Boldface** apply over full operating temperature range.

PARAMETER	TYP	MIN	MAX	UNITS	CONDITIONS
Output Voltage	2.85 2.85 2.85 3.0 3.0 3.30 3.30 5.0 5.0	2.82 2.79 2.79 2.97 2.94 3.27 3.24 4.95 4.90	2.88 2.91 2.91 3.03 3.06 3.33 3.36 5.05 5.10	V	I_{OUT} = 10mA, V_{IN} = 4.85V 0 ≤ I_{OUT} ≤ 1A, 4.25 ≤ V_{IN} ≤ 10V 0 ≤ I_{OUT} ≤ 500mA, V_{IN} = 4.05V I_{OUT} = 10mA, V_{IN} = 5.00V 0 ≤ I_{OUT} ≤ 1A, 4.50 ≤ V_{IN} ≤ 10V I_{OUT} = 10mA, V_{IN} = 5.30V 0 ≤ I_{OUT} ≤ 1A, 4.80 ≤ V_{IN} ≤ 10V I_{OUT} = 10mA, V_{IN} = 7.00V 0 ≤ I_{OUT} ≤ 1A, 6.50 ≤ V_{IN} ≤ 12V
Output Voltage Temperature Stability			**0.05**	%	(Note 1)
Line Regulation	1.00 1.00 1.00 1.00		6.00 7.00 7.00 10.00	mV	4.25V ≤ V_{IN} ≤ 10V, V_{OUT} = 2.85, I_{OUT} = 0 4.50V ≤ V_{IN} ≤ 12V, V_{OUT} = 3.00, I_{OUT} = 0 4.80V ≤ V_{IN} ≤ 12V, V_{OUT} = 3.30, I_{OUT} = 0 6.50V ≤ V_{IN} ≤ 15V, V_{OUT} = 5.00, I_{OUT} = 0
Load Regulation	1.00 1.00 1.00 1.00		10.00 12.00 12.00 15.00	mV	0 ≤ I_{OUT} ≤ 1A, V_{IN} = 4.25V, V_{OUT} = 2.85 0 ≤ I_{OUT} ≤ 1A, V_{IN} = 4.50V, V_{OUT} = 3.00 0 ≤ I_{OUT} ≤ 1A, V_{IN} = 4.80V, V_{OUT} = 3.30 0 ≤ I_{OUT} ≤ 1A, V_{IN} = 6.50V, V_{OUT} = 5.00
Dropout Voltage (Note 2)	1.00 1.05 1.10		1.10 1.15 1.20	V	I_L = 100mA I_L = 500mA I_L = 1A
Quiescent Current	5.00		10.00	mA	4.25V ≤ V_{IN} ≤ 6.5V
Current Limit	800	950	1200	mA	(V_{IN} - V_{OUT}) = 5V
Thermal Regulation	0.01		0.1	%/W	25°C, 30ms Pulse
Ripple Rejection	60		75	dB	f_{RIPPLE} = 120Hz, (V_{IN} - V_{OUT}) = 3V, V_{RIPPLE} = 1V_{p-p}
Long Term Stability			0.03	%	125°C, 1000Hrs
RMS Output Noise			0.003	%	% of V_{OUT}, 10Hz ≤ f ≤ 10kHz
Thermal Resistance			15	°C/W°	Junction to case, at tab

Note 1: Output temperature coefficient is defined as the worst case voltage change divided by the total temperature range.

Note 2: Dropout voltage is defined as the input to output differential at which the output voltage drops 100mV below its nominal value measured at 1V differential at very low values of programmed output voltage, the minimum input supply voltage of 2V (2.3V over temperature) must be taken input account.

Note 3: Thermal regulation is defined as the change in output voltage at a time T after a change in power dissipation is applied, excluding load or line regulation effect.