



PRELIMINARY

LT1123-2.85

Low Dropout Regulator Driver for SCSI-2 Active Termination

July 1991

FEATURES

- Extremely Low Dropout
- Low Cost
- Fixed 2.85V Output, Trimmed to  $\pm 1\%$
- 600 $\mu$ A Quiescent Current
- 3-Pin TO-92 Package
- 8-Pin SOIC Package
- 1mV Line Regulation
- 2mV Load Regulation
- Thermal Limit

DESCRIPTION

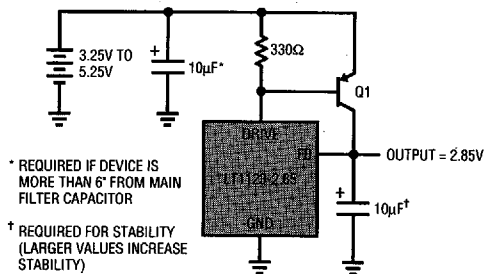
The LT1123-2.85 is a 3-pin bipolar device designed to be used in conjunction with a discrete PNP power device to form an inexpensive low dropout regulator. The LT1123-2.85 consists of a trimmed bandgap reference, error amplifier, and a driver circuit capable of sinking up to 70mA of base current from the external PNP pass device. The LT1123-2.85 is designed to be used in SCSI-2 Active Terminator circuits. It is designed to provide a fixed output voltage of 2.85V, at output currents of up to 1A.

The drive pin of the device can pull down to 2V at 70mA (1.4V at 10mA). This allows a resistor to be used to limit the base drive available to the PNP. This resistor also minimizes the power dissipation in the LT1123-2.85. The drive current of the device is folded back as the feedback pin approaches ground to further limit the available drive current under short circuit conditions.

Total quiescent current for the device is only 600 $\mu$ A. The device is available in a low cost TO-92 package, and an 8-pin SOIC package.

TYPICAL APPLICATION

2.85V Low Dropout Regulator



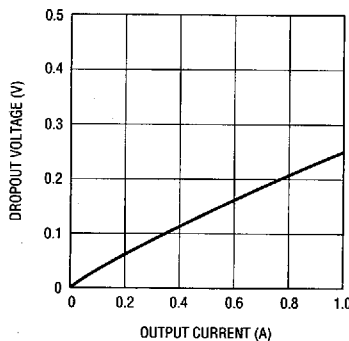
\* REQUIRED IF DEVICE IS MORE THAN 6" FROM MAIN FILTER CAPACITOR

† REQUIRED FOR STABILITY (LARGER VALUES INCREASE STABILITY)

Q1 MOTOROLA MJE1123 OR EQUIVALENT

LT1123-2.85-TA01

Dropout Voltage



LT1123-2.85-TA02

T-52-13-90

LT1123-2.85

**ABSOLUTE MAXIMUM RATINGS**

Drive Pin Voltage ( $V_{DRIVE}$ to Ground) .....	15V
Feedback Pin Voltage ( $V_{FB}$ to Ground) .....	15V
Operating Temperature Range .....	0°C to 100°C
Storage Temperature Range .....	-65°C to 150°C
Lead Temperature (Soldering, 10 sec.) .....	300°C

**PACKAGE/ORDER INFORMATION**

<p>TOP VIEW</p> <p>DRIVE 1 8 N/C N/C 2 7 GND N/C 3 6 N/C FB 4 5 N/C</p> <p>LT1123-2.85</p> <p>S PACKAGE 8-LEAD PLASTIC SOIC LT1123-2.85 - P062</p>	ORDER PART NUMBER
	LT1123CS8-2.85
<p>BOTTOM VIEW</p> <p>3 DRIVE 2 FB 1 GND</p> <p>Z PACKAGE 3-LEAD TO-92 PLASTIC LT1123-2.85 - P0101</p>	LT1123CZ-2.85

**ELECTRICAL CHARACTERISTICS**

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Output Voltage	$I_{DRIVE} = 10mA$	2.82	2.85	2.88	V
	$10mA \leq I_{DRIVE} \leq 50mA$ $3V < V_{DRIVE} \leq 10V$ $0^\circ C \leq T_J \leq 100^\circ C$	2.79	2.85	2.91	V
Feedback Pin Bias Current	$V_{FB} = 2.85V$		300	500	$\mu A$
Drive Current	$V_{FB} = 2.95V$		0.45	1.0	mA
	$V_{FB} = 2.70V$	50	70		mA
	$V_{FB} = 0V$	25	40	100	mA
Drive Pin Saturation Voltage	$I_{DRIVE} = 10mA$		1.4		V
	$I_{DRIVE} = 50mA$		1.7		V
Line Regulation $\Delta V_{OUT}$	$3V < V_{DRIVE} < 10V$		0.3	$\pm 10$	mV
Load Regulation	$\Delta I_{DRIVE} = 10$ to $50mA$		-2	-20	mV
Temperature Coefficient $\Delta V_{OUT}$			0.2		mV/°C

**SIMPLIFIED BLOCK DIAGRAM**

