



Micropower Dual Reference

T-58-07

DESCRIPTION

The LM1034/883 is a micropower, precision 1.2V/2.5V reference combined with a 7V auxiliary reference. The 1.2V/2.5V reference is a trimmed, thin-film, band-gap voltage reference with 1% initial tolerance and guaranteed 20ppm/°C temperature drift. Operating on only 20µA, the LT1034 offers guaranteed drift, low temperature cycling hysteresis and good long term stability. The low dynamic impedance makes the LT1034/883 easy to use from unregulated supplies. The 7V reference is a subsurface zener device for less demanding applications.

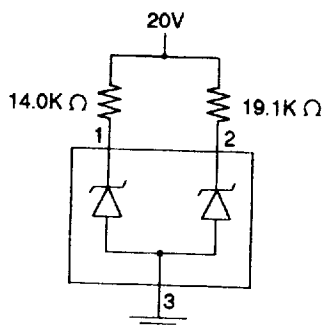
The LT1034/883 1.2V/2.5V reference can be used as a high performance upgrade of the LM385 or LT1004.

These devices are processed to the requirements of MIL-STD-883 Class B to yield circuits usable in precision military applications.

ABSOLUTE MAXIMUM RATINGS

Operating Current 20mA
 Forward Current (Note A) 20mA
 Operating Temperature Range . . -55°C to 125°C
 Storage Temperature Range . . . -65°C to 150°C
 Lead Temperature (Soldering, 10 sec.) 300°

BURN-IN CIRCUIT



PACKAGE/ORDER INFORMATION

<p>BOTTOM VIEW</p> <p>H PACKAGE TO-46 METAL CAN</p>	<p>ORDER PART NUMBER</p>
	<p>LT1034-1.2BMH/883 LT1034-2.5BMH/883 LT1034-1.2MH/883 LT1034-2.5MH/883</p>
	<p>PART MARKING†</p>
	<p>LT1034-1.2BMH/883C LT1034-2.5BMH/883C LT1034-1.2MH/883C LT1034-2.5MH/883C</p>

† The suffix letter "C" of the part mark indicates compliance per MIL-STD-883, para 1.7.1.1.



Information furnished by Linear Technology Corporation is believed to be accurate and reliable. However, no responsibility is assumed for its use. Linear Technology Corporation makes no representation that the interconnection of its circuits as described herein will not infringe on existing patent rights.

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TABLE 1: ELECTRICAL CHARACTERISTICS

PARAMETER	CONDITIONS	T _A = 25°C			SUB-GROUP	-55° ≤ T _A ≤ 125°C			SUB-GROUP	UNITS
		MIN	TYP	MAX		MIN	TYP	MAX		
1.2V Reference										
Reverse Breakdown Voltage	IR = 100μA	1.210	1.225	1.240	1	1.205	1.225	1.245	2,3	V
Reverse Breakdown Change with Current	20μA ≤ IR ≤ 2mA		.5	2.0	1		1.0	4.0	2,3	mV
	2mA ≤ IR ≤ 20mA		4	8.0	1		6.0	15.0	2,3	mV
Minimum Operating Current			10	20	1		10	20	2,3	μA
Temperature Coefficient	IR = 200μA, LT1034BM IR = 200μA, LT1034M						10	20	2,3	ppm/°C
							20	40	2,3	ppm/°C
Reverse Dynamic Impedance (Note B)	IR = 100μA		0.25	1.0	1		0.50	2.0	2,3	Ω
Low Frequency Noise	IR = 100μA, 0.1Hz ≤ F ≤ 10Hz		4							μVp-p
Long Term Stability	IR = 100μA, T = 25°C		20							ppm
2.5V Reference										
Reverse Breakdown Voltage	IR = 100μA	2.460	2.500	2.540	1	2.430	2.500	2.570	2,3	V
Reverse Breakdown Change with Current	30μA ≤ IR ≤ 2mA		1.0	3.0	1		1.5	6.0	2,3	mV
	2mA ≤ IR ≤ 20mA		4	16	1		10	20	2,3	mV
Minimum Operating Current			15	30	1		15	30	2,3	μA
Temperature Coefficient	IR = 200μA, LT1034BM IR = 200μA, LT1034M						10	20	2,3	ppm/°C
							20	40	2,3	ppm/°C
Reverse Dynamic Impedance (Note B)	IR = 100μA		0.5	1.5	1		1.0	2.5	2,3	Ω
Low Frequency Noise	IR = 100μA, 0.1Hz ≤ F ≤ 10Hz		6							μVp-p
Long Term Stability	IR = 100μA, T = 25°C		20							ppm
7V Reference										
Reverse Breakdown Voltage	IR = 100μA	6.8	7.0	7.3	1	6.75	7.0	7.4	2,3	V
Reverse Breakdown Change with Current	100μA ≤ IR ≤ 1mA		90	140	1		100	190	2,3	mV
	1μA ≤ IR ≤ 20mA		160	250	1		200	350	2,3	mV
Temperature Coefficient	IR = 100μA						40			ppm/°C
Long Term Stability	IR = 100μA		20							ppm

Note A: Forward biasing either diode will affect the operation of the other diode.

Note B: This parameter guaranteed by "Reverse Breakdown Change with Current" test.

TABLE 2: ELECTRICAL TEST REQUIREMENTS

MIL-STD-883 TEST REQUIREMENTS	SUBGROUP
Final Electrical Test Requirements (Method 5004)	1*,2,3
Group A Test Requirements (Method 5005)	1,2,3
Group C and D End Point Electrical Parameters (Method 5005)	1

* PDA applies to subgroup 1. See PDA Test Notes.

PDA Test Notes

The PDA is specified as 5% based on failures from group A, subgroup 1, tests after cooldown as the final electrical test in accordance with method 5004 of MIL-STD-883 Class B. The verified failures of group A, subgroup 1, after burn-in divided by the total number of devices submitted for burn-in in that lot shall be used to determine the percent for the lot.

Linear Technology Corporation reserves the right to test to tighter limits than those given.

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