

Not Recommended for New Designs

This product was manufactured for Maxim by an outside wafer foundry using a process that is no longer available. It is not recommended for new designs. The data sheet remains available for existing users.

A Maxim replacement or an industry second-source may be available. Please see the QuickView data sheet for this part or contact technical support for assistance.

For further information, [contact Maxim's Applications Tech Support](#).

SCOPE: **PRECISION REFERENCE +10 VOLT ADJUSTABLE OUTPUT**

<u>Device Type</u>	<u>Generic Number</u>
01	REF01A(x)/883B
02	REF01(x)/883B

Case Outline(s). The case outlines shall be designated in Mil-Std-1835 and as follows:

<u>Outline Letter</u>	<u>Mil-Std-1835</u>	<u>Case Outline</u>	<u>Package Code</u>
MAXIM SMD			
Z P	GDIP1-T8 or CDIP2-T8	8 LEAD CERDIP	J8
J G	MACY1-X8	8 LEAD CAN	G99
RC 2	CQCC1-N20	20 Pin Ceramic LCC	L20

Absolute Maximum Ratings

Supply Voltage V_{DD} to GND 40V
 Output Short Circuit Duration (to GND or V_{IN}) Indefinite

Lead Temperature (soldering, 10 seconds) +300°C
 Storage Temperature -65°C to +150°C

Continuous Power Dissipation $T_A=+70^\circ\text{C}$
 8 lead CERDIP(derate 8.0mW/°C above +70°C) 640mW
 8 pin CAN (derate 6.67mW/°C above +70°C)..... 533mW
 20-Pin LCC (derate 9.09mW/°C above +70°C) 727mW
 Junction Temperature T_J +150°C

Thermal Resistance, Junction to Case, θ_{JC} :

Case Outline 8 lead CERDIP..... 55°C/W
 Case Outline 8 lead CAN 45°C/W
 Case Outline 20-Pin LCC 20°C/W

Thermal Resistance, Junction to Ambient, θ_{JA} :

Case Outline 8 lead CERDIP..... 125°C/W
 Case Outline 8 lead CAN 150°C/W
 Case Outline 20-Pin LCC 110°C/W

Recommended Operating Conditions.

V_{OUT} @ 25°C for device 01 5V ±15mV
 V_{OUT} @ 25°C for device 02 5V ±25mV
 Ambient Operating Range (T_A) -55°C to +125°C

Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

TABLE 1 ELECTRICAL TESTS

TEST	Symbol	CONDITIONS -55 °C ≤ T _A ≤ +125°C V _{DD} =+15V, V _{IN} =+15V Unless otherwise specified	Group A Subgroup	Device type	Limits Min	Limits Max	Units
Quiescent Supply Current	I _{IN}	No load	1 2,3	All		1.4 2.0	mA
Output Adjustment Range	ΔV _{TRIM}	R _p =10kΩ	1	All	-3.0	+3.0	%
Output Voltage	V _O	I _L =0mA	1 2,3	01	9.97 9.95	10.03 10.04	V
Output Voltage	V _O	I _L =0mA	1 2,3	02	9.95 9.905	10.05 10.095	V
Short Circuit Current	I _{SC}	V _O =0	1	All	+15	+60	mA
Sink Current	I _S		1	All	-0.3		mA
Load Regulation NOTES 1, 2, 3	LD reg	I _L =0 to 10 mA	1	01 02		0.008 0.010	%/ m A
		I _L =0 to 8mA	2,3	01 02		0.012 0.015	
Line Regulation NOTE 2	LN reg	V _{IN} =13V to 33V	1	All		0.010	%/ V
			2,3			0.015	
Load Current	I _L	NOTE 1	1 2,3	All	10 8		mA
Output Voltage Noise	e _{np-p}	0.1Hz to 10Hz	4	All		150	μVp- p
Output Voltage Temperature Coefficient	TCV _O	NOTE 4	4,5,6	01		±8.5	ppm/ ° C
				02		±25	

NOTE 1: Minimum load current guaranteed by load regulation test.

NOTE 2: Line and Load Regulation specifications include the effect of self-heating.

NOTE 3: LD Reg=ΔI_L/ΔV_{OUT}×100

NOTE 4:
$$TCV_O = \frac{V_{MAX} - V_{MIN}}{10V} \times \frac{(-55^\circ C \text{ to } +125^\circ C)}{+180^\circ C} \times 10^6$$

ORDERING INFORMATION:

Device	Package	Maxim Device	SMD Number
01	G99	REF01AJ/883B	5962-8958103GC
01	J8	REF01AZ/883B	5962-8958103PA
01	L20	REF01ARC/883B	5962-89581032C
02	G99	REF01J/883B	5962-8958104GC
02	J8	REF01Z/883B	5962-8958104PA
02	L20	REF01RC/883B	5962-89581042C

PIN CONFIGURATIONS:			
	8 Lead CERDIP	8 Lead CAN	20 Lead LCC
1	NC	NC	NC
2	V _{IN}	V _{IN}	NC
3	NC	NC	NC
4	GND	GND (case)	NC
5	TRIM	TRIM	V _{IN}
6	V _{OUT}	V _{OUT}	NC
7	NC	NC	NC
8	NC	NC	NC
9			NC
10			GND
11			NC
12			TRIM
13			NC
14			NC
15			V _{OUT}
16			NC
17			NC
18			NC
19			NC
20			NC

QUALITY ASSURANCE

Sampling and inspection procedures shall be in accordance with MIL-Prf-38535, Appendix A as specified in Mil-Std-883.

Screening shall be in accordance with Method 5004 of Mil-Std-883. Burn-in test Method 1015:

1. Test Condition, A, B, C, or D.
2. TA = +125°C minimum.
3. Interim and final electrical test requirements shall be specified in Table 2.

Quality conformance inspection shall be in accordance with Method 5005 of Mil-Std-883, including Groups A, B, C, and D inspection.

Group A inspection:

1. Tests as specified in Table 2.
2. Selected subgroups in Table 1, Method 5005 of Mil-Std-883 shall be omitted.

Group C and D inspections:

- a. End-point electrical parameters shall be specified in Table 1.
- b. Steady-state life test, Method 1005 of Mil-Std-883:
 1. Test condition A, B, C, D.
 2. TA = +125°C, minimum.
 3. Test duration, 1000 hours, except as permitted by Method 1005 of Mil-Std-883.

TABLE 2. ELECTRICAL TEST REQUIREMENTS

Mil-Std-883 Test Requirements	Subgroups per Method 5005, Table 1
Interim Electric Parameters Method 5004	1
Final Electrical Parameters Method 5005	1*, 2, 3, 4, 5, 6
Group A Test Requirements Method 5005	1, 2, 3, 4, 5, 6
Group C and D End-Point Electrical Parameters Method 5005	1

* PDA applies to Subgroup 1 only.