

SCOPE: **PRECISION REFERENCE +5 VOLT ADJUSTABLE OUTPUT**

<u>Device Type</u>	<u>Generic Number</u>
03	REF02A(x)/883B
04	REF02(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 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
<u>Recommended Operating Conditions.</u>	
V_{OUT} @ 25°C for device 03	5V $\pm$ 15mV
V_{OUT} @ 25°C for device 04	5V $\pm$ 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	03	4.985 4.978	5.015 5.022	V
Output Voltage	V _O	I _L =0mA	1 2,3	04	4.975 4.953	5.025 5.047	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 NOTE 1	LD reg	I _L =0 to 10mA	1	All		0.010	%mA
		I _L =0 to 8mA	2,3	03 04		0.012 0.015	
Line Regulation NOTE 1	LN reg	V _{IN} =8V to 33V	1	03 04		0.010 0.012	%V
			2,3	All		0.015	
Load Current	I _L	NOTE 2	1	All	10		mA
Output Voltage Noise	e _{np-p}	0.1Hz to 10Hz	4	All		100	μVp-p
Output Voltage Temperature Coefficient	TCV _O	NOTE 3	7,,8	03		±8.5	ppm/°C
				04		±25	

NOTE 1: Line and Load Regulation specifications include the effect of self-heating.

NOTE 2: Minimum of 10mA load current guaranteed by load regulation test.

NOTE 3:
$$TCV_O = \frac{V_{MAX} - V_{MIN}}{5V} \times \frac{(-55^{\circ}C \text{ to } +125^{\circ}C)1 \times 10^6}{+180^{\circ}C}$$

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

ORDERING INFORMATION:			
Device	Package	Maxim Device	SMD Number
03	G99	REF02AJ/883B	8551403GC
03	J8	REF02AZ/883B	8551403PA
04	G99	REF02J/883B	8551404GC
04	J8	REF02Z/883B	8551404PA
04	L20	REF02RC/883B	85514042C

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
Group A Test Requirements Method 5005	1, 2, 3, 4, 7, 8
Group C and D End-Point Electrical Parameters Method 5005	1, 2*, 3*

* PDA applies to Subgroup 1 only.

** Guaranteed if not tested.