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: HIGH PRECISION +10 VOLT REFERENCE

Device Type	Generic Number
01	MX581S(x)/883B
02	MX581T(x)/883B

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

Outline Letter	Mil-Std-1835	Case Outline	Package Code
H	MACY1-X3	3 Lead TO-39 Can	TO39

Absolute Maximum Ratings

Input Voltage to GND ……..……..……40V

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

Continuous Power Dissipation……...……..T_A=+70 °C
3-Pin TO-39 Can(derate 6.7mW/ °C above +70 °C)…….……533mW
Junction Temperature T_J……..……...…+150 °C
Thermal Resistance, Junction to Case, ΘJC:
3-Pin TO-39 Can ……..……..……45 °C/W
Thermal Resistance, Junction to Ambient, ΘJA:
3-Pin TO-39 Can ……...150 °C/W

Recommended Operating Conditions
Supply Voltage Range (V_{IN})……...…4.5V min to 30V max
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 $-55\,^{o}C \leq T_A \leq +125\,^{o}C$ V_{CC}=+15V, I_L=0mA Unless otherwise specified	Group A Subgroup	Device Type	Limits Min	Limits Max	Units
Quiescent Current	I_Q		1	All		1.0	mA
Output Voltage Error	V_{OUT}	10V Output	1	01 02	-30 -10	+30 +10	mV
Line Regulation	VR_{LINE1}	V_{CC}=15V to 30V	1,2,3	All	-3	+3	mV
	VR_{LINE2}	V_{CC}=13V to 15V			-1	+1	
Load Regulation	VR_{LOAD}	I_L=0mA to 5mA, Output = 10V	1,2,3	All	-500	+500	µV/mA
Output Short Circuit Current	I_{OS}	10V output grounded	2,3	All		55	mA
Output Voltage Temperature Coefficient	$\Delta V_{OUT}0/\Delta T$		2,3	01 02		+30 +15	ppm/^{o}C
Output Current NOTE 1	I_{OUT}	Source	1 2,3	All	10 5		mA
		Sink	1 2,3		5.0 0.2		

NOTE 1: For applications that require the MX581 to sink current, maintain a load capacitance of 10nF.

ORDERING INFORMATION	
Device	**Maxim Part Number**
01	MX581SH/883B
02	MX581TH/883B

PIN CONFIGURATION	
1	V_{CC}
2	V_{OUT}
3	GND

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. T_A = +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. T_A = +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 Electrical Parameters Method 5004	1
Final Electrical Parameters Method 5005	1*, 2, 3
Group A Test Requirements Method 5005	1, 2, 3
Group C and D End-Point Electrical Parameters Method 5005	1, 2, 3

* PDA applies to Subgroup 1 only.