

**SCOPE: 5TH-ORDER, ZERO DC ERROR, LOWPASS FILTERS**

<u>Device Type</u>	<u>Generic Number</u>
01	MXL1062MJ8/883B
02	MAX280MJA/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 JA or J8 P	GDIP1-T8 or CDIP2-T8	8 Lead Sidebrazed	J8

**Absolute Maximum Ratings**

Total Supply Voltage .....	18V
Input Voltage to GND (any input) .....	$V^- - 0.3V \leq V_{IN} \leq V^+ + 0.3V$
Lead Temperature (soldering, 10 seconds) .....	+300°C
Storage Temperature .....	-65°C to +150°C
Continuous Power Dissipation .....	$T_A = +70^\circ\text{C}$
8 pin CERDIP (derate 8.0mW/°C above +70°C) .....	640mW
Junction Temperature $T_J$ .....	+150°C
Thermal Resistance, Junction to Case, $\theta_{JC}$ :	
8 pin CERDIP .....	55°C/W
Thermal Resistance, Junction to Ambient, $\theta_{JA}$ :	
8 pin CERDIP .....	125°C/W

**Recommended Operating Conditions**

Ambient Operating Range ( $T_A$ ) .....	-55°C to +125°C
Positive Supply Voltage (V+) .....	+5V
Negative Supply Voltage (V-) .....	-5V

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		Group A Subgroup	Device type	Limits Min	Limits Max	Units
		-55 °C <=T <sub>A</sub> <= +125°C V <sub>+</sub> =5V, V <sub>-</sub> =-5V <u>1</u> /						
Power Supply Current	I	COSC pin to V <sub>-</sub> =100pF		1 2,3	All		7 10	mA
Filter Gain	AF	At f <sub>IN</sub> =0.5fc, NOTE 3		4	All		-0.3	dB
		At f <sub>IN</sub> =fc At f <sub>IN</sub> =2fc At f <sub>IN</sub> =4fc		4,5,6	All		-2 -28 -52	
		At f <sub>IN</sub> =16kHz, f <sub>CLK</sub> =400kHz, R <sub>L</sub> =6.5kΩ, C <sub>L</sub> =0.01μF, Divider Ratio pin at V <sub>+</sub>		4,5,6	All		-43	
Filter Output pin dc swing	+VFO	OUTPUT pin buffered with an external operational amplifier		1,2,3	All		+3.5	V
	-VFO						-3.5	
<b>INTERNAL BUFFER SECTION</b>								
Bias Current	I <sub>B</sub>			1 2,3	All		50 1000	pA
Offset Voltage	V <sub>OS</sub>			1			01 20	mV
							02 2	
Voltage Swing	+V <sub>SW</sub>	R <sub>L</sub> =20kΩ, external operational amplifier		1,2,3	All		+3.5	V
	-V <sub>SW</sub>						-3.5	
<b>CLOCK SECTION</b>								
Internal Oscillator Frequency	f <sub>IO</sub>	COSC pin to V <sub>-</sub> =100pF		4 5,6	01		25 15	50 65
				4 5,6	02		31 29	39 43
COSC Pin Source or Sink Current	I <sub>OSC</sub>			1,2,3	All		80	μA

NOTE 1: Unless otherwise specified AC output is measured at the output pin.

NOTE 2: The algebraic convention, whereby the most negative value is a minimum and the most positive is a maximum, is used in this table. Negative current shall be defined as conventional current flow out of a device terminal.

NOTE 3: fc is the frequency where the gain is -3dB with respect to the input signal. f<sub>CLK</sub>=100kHz, DIVIDER RATIO pin at V<sub>+</sub>, C<sub>L</sub>=0.01μF and R<sub>L</sub>=25.78kΩ.

NOTE 4: The external or driven clock frequency is divided by either 1, 2, or 4 depending upon the voltage at the DIVIDER RATIO pin. When the DIVIDER RATIO pin=V<sub>+</sub>, the ratio=1; when the DIVIDER RATIO pin = GND, the ratio=2; when the DIVIDER RATIO pin =V<sub>-</sub>, the ratio = 4.

Package	ORDERING	INFORMATION:	SMD Number
8pin Cerdip	01	MXL1062MJ8/883B	5962-9159501MPA
8pin Cerdip	02	MAX280MJA/883B	5962-9159502MJA

8 pin Cerdip			
1	FB	5	COSC
2	AGND	6	V <sub>+</sub>
3	V <sub>-</sub>	7	OUT
4	Divider Ratio	8	BOUT

## 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.