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: TRUE RMS-to-DC CONVERTER

Device Type	Generic Number
01	MX536AS(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
MAXIM	SMD			
Q	C	GDIP1-T14 or CDIP2-T14	14 LEAD CERDIP	J14
D	C	GDIP1-T14 or CDIP2-T14	14 LEAD SIDEBRAZE	D14
E	2	CQCC1-N20 or CQCC2-N20	20 Pin Leadless Chip Carrier	L20
H	I	MACY1-X10	10 Pin Can, TO-100	H10

Absolute Maximum Ratings:

Supply Voltage ..... ±18V
Input Voltage ..... ±25V
Output Short-Circuit Duration ..... Indefinite

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

Continuous Power Dissipation ..... T_A=+70°C
14 pin CERDIP(derate 9.1mW/°C above +70°C) 727mW
14 pin Sidebraze(derate 10mW/°C above +70°C) 800mW
20 pin LCC(derate 9.1mW/°C above +70°C) 727mW
10 pin TO-100(derate 6.7mW/°C above +70°C) 533mW
Junction Temperature T_J ..... +150°C
Thermal Resistance, Junction to Case, ΘJC
14 pin CERDIP..... 55°C/W
14 pin Sidebraze ..... 45°C/W
20 pin LCC ..... 20°C/W
10 pin TO-100 ..... 45°C/W
Thermal Resistance, Junction to Ambient, ΘJA:
14 pin CERDIP..... 110°C/W
14 pin Sidebraze ..... 100°C/W
20 pin LCC ..... 110°C/W
10 pin TO-100 ..... 150°C/W

Recommended Operating Conditions

Ambient Operating Range (T_A) ..... -55°C to +125°C
Input Range (V_{IN}) ..... ±15V

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_{SS}=±15V Unless otherwise specified	Group A Subgroup	Device type	Limits Min	Limits Max	Units
Total Error	E_r	V_{IN}=±300mV to ±10V	1	All		±5 + ±0.5	mV + % of reading
Total Error vs. Temperature	$\Delta E_T/\Delta T$		1,2	All		±0.3 + ±0.005	mV + % of reading /°C
			3			±0.1 + ±0.005	
Buffer-Output Offset Voltage	V_{OS}	I_{OUT} to BUFIN, V_{IN}=0V	1	All		±2.0	mV
Buffer-Output Offset Drift	$\Delta V_{OS}/\Delta T$	I_{OUT} to BUFIN, V_{IN}=0V	2,3	All		±0.2	mV/°C
Buffer-Output Voltage Swing	V_{OP}	I_{OUT} to BUFIN, VS=±15V	1	All	11		V
		I_{OUT} to BUFIN, VS=±5V			2		
dB Output Error	E_{dB}	±7mV≤V_{IN}≤7V	1	All		±0.6	dB
IREF for 0dB=1VRMS	IREFΔ		1	All	5	80	µA
Internal Reference Range	IREF		1	All	1	100	µA
Buffer-Input Offset Voltage	V_{OS}		1	All		±4.0	mV
Buffer-Input Bias Current	I_S		1	All		60	nA
Power Supply Range, Dual Voltage	V_S		1	All	-18	+18	V
Power Supply Range, Single Voltage	V_S		1	All		36	V
Quiescent Current	I_Q	±5V≤VS≤±18V	1,2,3	All		2	mA

ORDERING INFORMATION:

	Package	Pkg. Code	MAXIM PART #	SMD Number
01	14 pin CERDIP	J14	MX536ASD/883B	5962-8980501CC
01	14 pin Sidebraze	D14	MX536ASQ/883B	5962-8980501CA
01	10 pin TO-100	G100	MX536ASH/883B	5962-8980501IC
01	20 pin LCC	L20	MX536ASE/883B	5962-89805012C

PIN CONFIGURATIONS:

PIN	TO-100	J14 & D14	L20
1	RL	VIN	NC
2	COMMON	NC	VIN
3	VS+	VS-	NC
4	VIN	CAV	VS-
5	VS-	dB	NC
6	CAV	BUFOUT	CAV
7	dB	BUFIN	NC
8	BUFOUT	IOUT	dB
9	BUFIN	RL	BUFOUT
10	IOUT	COMMON	BUFIN
11		NC	NC
12		NC	IOUT
13		NC	RL
14		VS+	COMMON
15			NC
16			NC
17			NC
18			NC
19			NC
20			VS+

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
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 only.