National Semiconductor

MILITARY DATA SHEET

MNLM199-X REV 0BL

Original Creation Date: 08/15/95
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PRECISION VOLTAGE REFERENCE

Industry Part Number

LM199

NS Part Numbers

LM199H-SMD*
LM199H/883

Prime Die

LM199

Controlling Document

5962-8856102XA*

Processing

MIL-STD-883, Method 5004

Quality Conformance Inspection

MIL-STD-883, Method 5005

Subgrp	Description	Temp (°C)
1	Static tests at	+25
2	Static tests at	+125
3	Static tests at	-55
4	Dynamic tests at	+25
5	Dynamic tests at	+125
6	Dynamic tests at	-55
7	Functional tests at	+25
8A	Functional tests at	+125
8B	Functional tests at	-55
9	Switching tests at	+25
10	Switching tests at	+125
11	Switching tests at	-55

Electrical Characteristics

DC PARAMETERS

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vr	Reverse Breakdown Voltage	0.5mA <= Ir <= 10mA			6.8	7.1	V	1, 2, 3
Delta Vr	Reverse Breakdown Voltage Change with Current	0.5mA <= Ir <= 10mA				9.0	mV	1, 2, 3
Vnrms	Zener Rms noise Voltage	Ir = 1mA, Vh = 40V, 10Hz<Freq<10KHz				20.0	uV	1
Ihpk	Peak Heater Current	Vh = 40V, 1 % Duty Cycle				200	mA	1
Il	Leakage Zener to Substrate	Vh = 40V				250	nA	1
Delta Vz/ Delta T	Reverse Breakdown Temperature Coefficient	Ir = 1mA, -55 C <= TA <= 85 C	3			1	ppm/C	1
		Ir = 1mA, 85 C <= TA <= 125 C	3			15	ppm/C	1
Zr	Reverse Dynamic Impedance	Ir = 1mA	1			1	Ohm	1
Ih	Stabilized Heater Current	Vh = 30V(tested after 5 seconds of heater turn on time)				30	mA	1
		Vh = 30V (Still air)	2			14	mA	2
			2			85	mA	3
Vnpk	Zener Peak Noise Voltage	Ir = 1mA, Vh = 40V, 10Hz<Freq<10KHz				80	uV	1
Vf	Forward Voltage	Ir = 1mA			-1.6		V	1

Note 1: Guaranteed by "Reverse Breakdown Voltage Change with Current".
Note 2: Guaranteed parameter, not tested.
Note 3: Tested on Auto Drift test oven.