National Semiconductor

MILITARY DATA SHEET

MNLH0021-K REV 0BL

Original Creation Date: 09/18/95
Last Update Date: 12/10/96
Last Major Revision Date: 09/18/95

1.0 AMP OPERATIONAL AMPLIFIER

Industry Part Number

LH0021

NS Part Numbers

LH0021K-MIL

Prime Die

LH0021

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

(The following conditions apply to all the following parameters, unless otherwise specified.)
DC: Vs = ±15V, Rs = 100 Ohms, Cc = 3000pF

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Psi	Power Supply Current	Vout = 0				3.5	mA	1, 2, 3
Vos	Input Offset Voltage					3	mV	1
						5	mV	2, 3
Ibs	Input Bias Current					300	nA	1
						1000	nA	2, 3
Ios	Input Offset Current					100	nA	1
						300	nA	2, 3
PSRR	Power Supply Rejection Ratio	±5V <= Vs <= ±15V			80		dB	1, 2, 3
CMRR	Common Mode Rejection Ratio	-10V <= Vcm <= 10V			70		dB	1, 2, 3
Vswg	Output Voltage Swing	Rl = 100 Ohms			13.5		V	1, 2, 3
		Rl = 10 Ohms			11		V	1
Isc	Output Short Circuit	Rsc = 0.5 Ohms			800	1600	mA	1
Av	Voltage Gain	Rl = 100 Ohms, Vo = ±10V			25		KV/V	1, 2, 3
		Rl = 1K Ohms, Vo = ±10V			100		KV/V	1
	Input Voltage Range		3		±10		V	1, 2, 3
	Power Consumption		4			105	mW	1, 2, 3
Delta Vos/Delta T	Temperature Coefficient of Input Offset Voltage	-55 C <= TA <= 125C	1			25	uV/C	1
Delta Vos/Delta Po	Change of Input Offset Voltage with Change in Output Power		1			15	uV/W	1
Delta Ios/Delta T	Temperature Coefficient of Input Offset Current	-55C <= TA <= 125C	1			1	nA/C	1

Electrical Characteristics

AC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)
AC: Vs = ±15V, Rs = 100 Ohms, Cc = 3000pF

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Sr	Slew Rate	Av = 1, Rl = 100 Ohms	2		0.8		V/uS	9
os	Small Signal Overshoot		1			20	%	9
tresp	Small Signal Transient Response		1			1	nS	9

DC PARAMETERS: DRIFT VALUES

(The following conditions apply to all the following parameters, unless otherwise specified.)
DC: Vs = ±15V, Rs = 100Ohms, Cc = 3000pF. "Deltas not required on B-Level product. Deltas required for S-Level product ONLY as specified on Internal Processing Instructions (IPI)."

Vos	Input Offset Voltage				-1	1	mV	1
Ibs	Input Bias Current				-50	50	nA	1
Ios	Input Offset Current				-20	20	nA	1

Note 1: Guaranteed parameter not tested.
Note 2: Bench tested HDN-30-777-181 (RPI-3-326) only if parts are tested on J273.
Note 3: Guaranteed by CMRR test.
Note 4: Calculation of Vs = ±15V (30 Volts total) and power supply current = 3.5mA.