

MNLM615AM-X REV 1AL

 Original Creation Date: 08/03/95
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QUAD OPERATIONAL AMPLIFIERS AND ADJUSTABLE REFERENCE
Industry Part Number

LM615

NS Part Numbers

LM615AMJ/883

Prime Die

LM615

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: $V_- = \text{Gnd} = 0\text{V}$, $V_+ = 5\text{V}$, $V_{\text{cm}} = V_{\text{out}} = V_+/2$, $I_r = 100\mu\text{A}$, FEEDBACK PIN TO GND.

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
I _{cc}	Total Supply Current V ₊ Current	R _{load} = Infinity, $4\text{V} \leq V_+ \leq 36\text{V}$				550	uA	1
						600	uA	2, 3
V _{io1}	Offset Voltage Over V ₊ Range	$4\text{V} \leq V_+ \leq 36\text{V}$, R _L = 15K Ohms			-3.0	3.0	mV	1
					-6.0	6.0	mV	2, 3
V _{io2}	Offset Voltage Over V _{cm} Range	$0\text{V} \leq V_{\text{cm}} \leq (V_+ - 1.4\text{V})$, $1.0\text{V} \leq V_{\text{cm}} \leq (V_+ - 1.8\text{V})$ over Temp., $V_+ = 30\text{V}$, R _L = 15K Ohms			-3.0	3.0	mV	1
					-6.0	6.0	mV	2, 3
I _{ib}	Input Bias Current				-25	25	nA	1
					-30	30	nA	2, 3
I _{io}	Input Offset Current				-4	4	nA	1
					-5	5	nA	2, 3
I _{sink}	Output Sink Current	$V_{\text{in}} = 0\text{V}$, $V_{\text{out}} = 1.5\text{V}$			10		mA	1
					8		mA	2, 3
		$V_{\text{in}} = 1\text{V}$, $V_{\text{out}} = .4\text{V}$			1.0		mA	1
					.5		mA	2, 3
I _{leak}	Output Leakage Current	$V_{\text{in}} = 1\text{V}$, $V_{\text{in}} = 0\text{V}$, $V_{\text{out}} = 36\text{V}$				10	uA	1
A _v	Voltage Gain	R _L =10K Ohms to 36V, $2\text{V} \leq V_{\text{out}} \leq 27\text{V}$			50		V/mV	4

Electrical Characteristics

DC PARAMETERS: Voltage Reference

(The following conditions apply to all the following parameters, unless otherwise specified.)

DC: $V_- = Gnd = 0V$, $V_+ = 5V$, $V_{cm} = V_{out} = V_+/2$, $I_r = 100\mu A$, FEEDBACK PIN TO GND.

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
V_r	Voltage Reference		1		1.2365	1.2515	V	1
$\Delta V_r / \Delta I_r$	Vr Change with Current	$V_r (100\mu A) - V_r (17\mu A)$	1		-1	1	mV	1
			1		-1.1	1.1	mV	2, 3
		$V_r (10mA) - V_r (100\mu A)$	1, 2		-5	5	mV	1
			1, 2		-5.5	5.5	mV	2, 3
R	Resistance	$\Delta V_r (10mA \text{ to } 100\mu A) / 9.9mA$	1, 3			.51	Ohms	1
			1, 3			.56	Ohms	2, 3
		$\Delta V_r (100\mu A \text{ to } 17\mu A) / 83\mu A$	1, 3			12	Ohms	1
			1, 3			13	Ohms	2, 3
$\Delta V_r / \Delta V_{ro}$	Vr Change with High V_{ro}	$V_r(V_{ro}=V_r) - V_r(V_{ro}=6.3V)$	1			7	mV	1
			1			10	mV	2, 3
$\Delta V_r / \Delta V_+$	Vr Change with V_+ Change	$V_r(V_+=5V) - V_r(V_+=36V)$	1		-1.2	1.2	mV	1
			1		-1.3	1.3	mV	2, 3
		$V_r(V_+=5V) - V_r(V_+=3V)$	1		-1	1	mV	1
			1		-1.5	1.5	mV	2, 3
$I_b(fb)$	Feedback Bias I	$V_- \leq V_{fb} \leq 5.06V$	1			35	nA	1
			1			40	nA	2, 3

Note 1: V_{ro} is the reference output voltage, which may be set for 1.2V to 6.3V. V_r is the V_{ro} -to-Feedback voltage (nominally 1.244V).

Note 2: Low contact resistance is required for accurate measurement.

Note 3: Guaranteed by Vr change with current.