

MNLM138-X REV 0BL

 Original Creation Date: 07/12/95
 Last Update Date: 11/12/98
 Last Major Revision Date: 07/12/95

5 AMP ADJUSTABLE POWER REGULATOR
Industry Part Number

LM138

NS Part Numbers

LM138K-MIL

Prime Die

LM138

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: $V_{diff}=5V$, $I_L=10mA$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Rline	Line Regulation	$3V \leq V_{diff} \leq 35V$	2		-3.5	3.5	mV	1
		$3V \leq V_{diff} \leq 35V$	2		-14	14	mV	2, 3
Rload	Load Regulation	$V_{diff}=3V$, $10mA \leq I_L \leq 5A$, $V_{out}=V_{ref}$	2		-3.8	3.8	mV	1
		$V_{diff}=3V$, $10mA \leq I_L \leq 5A$, $V_{out}=V_{ref}$	2		-8	8	mV	2, 3
		$V_{diff}=35V$, $10mA \leq I_L \leq 150A$, $V_{out}=V_{ref}$			-3.8	3.8	mV	1
		$V_{diff}=35V$, $10mA \leq I_L \leq 150A$, $V_{out}=V_{ref}$			-8	8	mV	2, 3
Vrth	Thermal Regulation	$V_{diff}=10V$, Pulse=20mS, $I_L=1A$	1			0.01	%/Watt	1
Iadj	Adjustment Pin Current	$V_{diff}=3V$	2		2	100	uA	1, 2, 3
		$V_{diff}=35V$			2	100	uA	1, 2, 3
Delta Iadj	Adjustment Pin Current Change	$3V \leq V_{diff} \leq 35V$	2		-5	5	uA	1, 2, 3
		$10mA \leq I_L \leq 5A$			-5	5	uA	1, 2, 3
I _L min	Min Load Current	$V_{diff}=3V$, $V_{out}=1.4V$	2		0.5	5	mA	1, 2, 3
		$V_{diff}=35V$, $V_{out}=1.4V$			0.5	5	mA	1, 2, 3
Vref	Reference Voltage	$V_{diff}=3V$	2		1.19	1.29	V	1, 2, 3
		$V_{diff}=3V$, $I_L=5A$			1.19	1.29	V	1, 2, 3
		$V_{diff}=5V$, $I_L=7A$			1.19	1.29	V	1, 2, 3
		$V_{diff}=35V$			1.19	1.29	V	1, 2, 3
		$V_{diff}=35V$, $I_L=150mA$			1.19	1.29	V	1, 2, 3
I _{CL}	Current Limit	$V_{diff}=10V$, $T=0.5mS$, $V_{out}=0V$			7	16	A	1, 2, 3
		$T=5.0mS$, $V_{out}=0V$			5	15	A	1, 2, 3
Rr	Ripple Rejection Ratio	$V_{out}=V_{ref}$, $e_{in}=1V_{rms}$, $f=120Hz$, $I_L=500mA$	3		60		dB	4

Note 1: Datalog reading in mV, 0.01 % = 1.19mV.

Note 2: $V_{diff} = 3.3V$ at 125 C and -55 C.

Note 3: Family Board not required for this device.

Revision History

Rev	ECN #	Rel Date	Originator	Changes
0BL	M0001682	11/12/98	Barbara Lopez	Changed: MNLM138-X Rev. 0AL to MNLM138-X Rev. 0BL.