Freescale Semiconductor
Technical Data

MHW1224LA
Rev. 1, 10/2002

CATV Amplifier Module

MHW1224LA

5–65 MHz, 22.7 dB, 10–CHANNEL CATV LOW CURRENT AMPLIFIER MODULE

Features

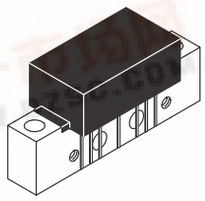
- Specified for 6– and 10–Channel Loading
- Excellent Distortion Performance
- Low Power Consumption
- Capable of Handling Multiple Channels in the Return Path with Good Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

Applications

- CATV Systems Operating in the 5 to 65 MHz Frequency Range
- Specified for Use as a Return Path Amplifier for Low–Split 2–Way Cable TV Systems

Description

- 24 Vdc Supply, 5 to 65 MHz, CATV Reverse Amplifier Module



CASE 1302–01, STYLE 1

Table 1. Maximum Ratings

Parameter	Symbol	Value	Unit
DC Supply Voltage	V_{CC}	+28	Vdc
RF Input Voltage (Single Tone)	V_{in}	+60	dBmV
Operating Case Temperature Range	T_C	– 20 to +100	°C
Storage Temperature Range	T_{stg}	– 40 to +100	°C

Table 2. Electrical Characteristics (V_{CC} = 24 Vdc, T_C = 30°C, 75 Ω system, unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Bandwidth	All	BW	5	—	65	MHz
Power Gain	(f = 5 MHz)	G_p	22.1	22.7	23.2	dB
Slope	(5–65 MHz)	S	– 0.2	—	0.5	dB
Gain Flatness (Peak To Valley)	(5–65 MHz)	G_F	—	—	0.4	dB
Return Loss — Input/Output	(@ f = 5–65 MHz)	IRL/ORL	20	—	—	dB
Composite Second Order (V_{out} = +50 dBmV per Ch., Worst Case)						dBc
	6–Channel FLAT	CSO_6	—	– 73	– 68	
	10–Channel FLAT	CSO_{10}	—	– 72	– 65	

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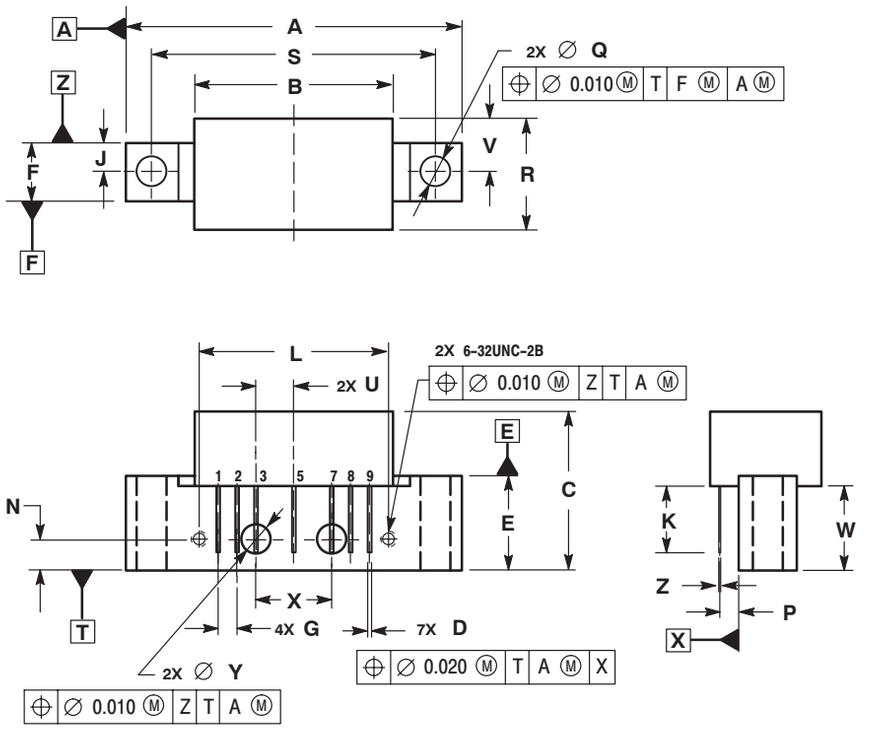
Table 2. Electrical Characteristics (V_{CC} = 24 Vdc, T_C = 30°C, 75 Ω system, unless otherwise noted) **(continued)**

Characteristic	Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion (V_{out} = +50 dBmV per Ch., Worst Case)					dBc
6–Channel FLAT	XMD_6	—	–69	–65	
10–Channel FLAT	XMD_{10}	—	–63	–60	
Composite Triple Beat (V_{out} = +50 dBmV per Ch., Worst Case)					dBc
6–Channel FLAT	CTB_6	—	–78	–75	
10–Channel FLAT	CTB_{10}	—	–69	–66	
Noise Figure (f = 5–65 MHz)	NF	—	6.3	7	dB
DC Current	I_{DC}	85	95	110	mA

PACKAGE DIMENSIONS



DIM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	---	1.775	---	45.085
B	---	1.085	---	27.559
C	---	0.840	---	21.336
D	0.015	0.021	0.381	0.533
E	0.465	0.510	11.811	12.954
F	0.300	0.325	7.62	8.255
G	0.100 BSC		2.540 BSC	
J	0.156 BSC		3.962 BSC	
K	0.315	0.355	8.001	9.017
L	1.000 BSC		25.400 BSC	
N	0.165 BSC		4.191 BSC	
P	0.100 BSC		2.540 BSC	
Q	0.148	0.168	3.759	4.267
R	---	0.600	---	15.24
S	1.500 BSC		38.100 BSC	
U	0.200 BSC		5.080 BSC	
V	---	0.250	---	6.350
W	0.435	---	11.049	---
X	0.400 BSC		10.160 BSC	
Y	0.152	0.163	3.861	4.140
Z	0.009	0.011	0.229	0.279

STYLE 1:
PIN 1. RF INPUT
2. GROUND
3. GROUND
4. DELETED
5. VDC
6. DELETED
7. GROUND
8. GROUND
9. RF OUTPUT

CASE 1302–01
ISSUE B

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