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Freescale Semiconductor
Technical Data

Document Number: MHW1303LAN
Rev. 4, 5/2006



CATV 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

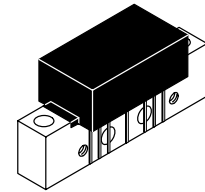
- CATV Systems Operating in the 5 to 200 MHz Frequency Range
- Specified for Use as a Return Path Amplifier for Low-, Mid- and High-Split 2-Way Cable TV Systems

Description

- 24 Vdc Supply, 5 to 200 MHz, CATV Reverse Amplifier Module
- Replaced MHW1303LA. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

MHW1303LAN

**5-200 MHz, 30.8 dB, 10-CHANNEL
CATV LOW CURRENT
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, $T_C = 30^\circ\text{C}$, 75Ω system, unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Bandwidth All	BW	5	—	200	MHz
Power Gain (f = 5 MHz)	G_p	30	30.8	31.2	dB
Slope (5-200 MHz)	S	0	—	1.0	dB
Gain Flatness (Peak To Valley) (5-200 MHz)	G_F	—	—	0.7	dB
Return Loss — Input/Output (@ f = 5-65 MHz) (@ f = 65-200 MHz)	IRL/ORL	20 18	— —	— —	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}	—	-70	-65	

ARCHIVE INFORMATION

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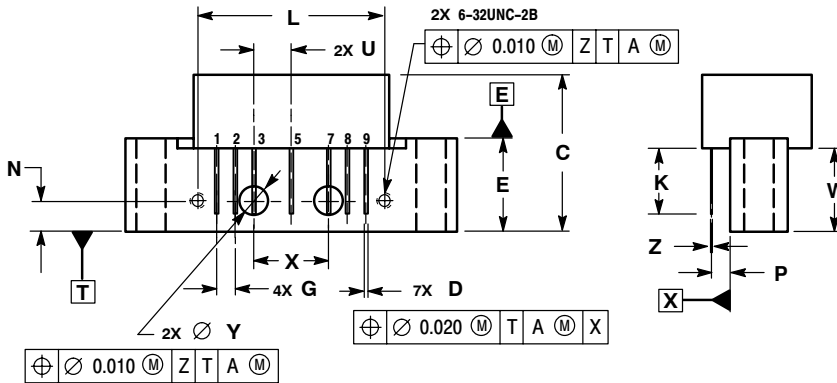
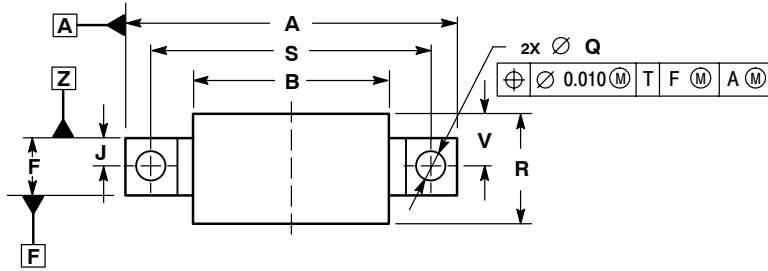
Table 2. Electrical Characteristics ($V_{CC} = 24$ Vdc, $T_C = 30^\circ\text{C}$, 75Ω system, unless otherwise noted) (continued)

Characteristic	Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion ($V_{out} = +50$ dBmV per Ch., Worst Case)	6-Channel FLAT	—	-67	-64	dBc
	10-Channel FLAT	—	-61	-58	
Composite Triple Beat ($V_{out} = +50$ dBmV per Ch., Worst Case)	6-Channel FLAT	—	-76	-74	dBc
	10-Channel FLAT	—	-67	-64	
Noise Figure ($f = 5$ -200 MHz)	NF	—	5	5.7	dB
DC Current	I_{DC}	85	95	110	mA

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PACKAGE DIMENSIONS



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	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 E

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