

# The RF Line CATV Amplifier Module

## Features

- Specified for 77- and 110-Channel Loading
- Excellent Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

## Applications

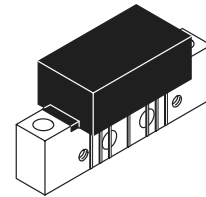
- CATV Systems Operating in the 40 to 750 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

## Description

- 24 Vdc Supply, 40 to 750 MHz, CATV Forward Amplifier

**MHW7242A**

**750 MHz  
24.7 dB GAIN  
110-CHANNEL  
CATV AMPLIFIER**



**CASE 1302-01, STYLE 1**

## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	$V_{in}$	+55	dBmV
DC Supply Voltage	$V_{CC}$	+28	Vdc
Operating Case Temperature Range	$T_C$	-20 to +100	°C
Storage Temperature Range	$T_{stg}$	-40 to +100	°C

## ELECTRICAL CHARACTERISTICS ( $V_{CC} = 24$ Vdc, $T_C = +30$ °C, 75 $\Omega$ system unless otherwise noted)

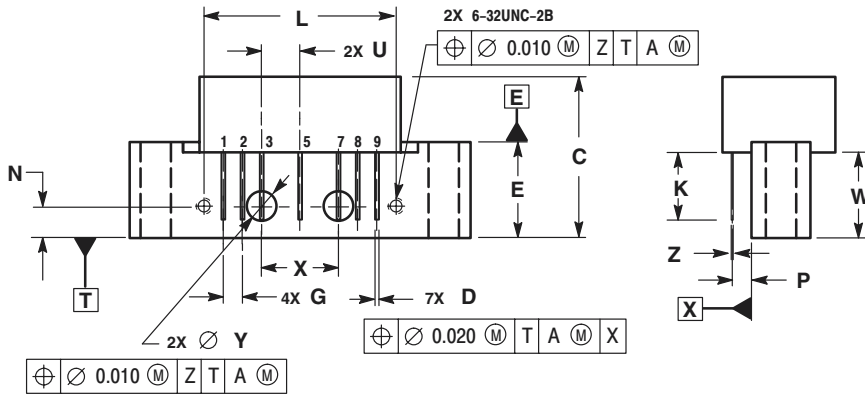
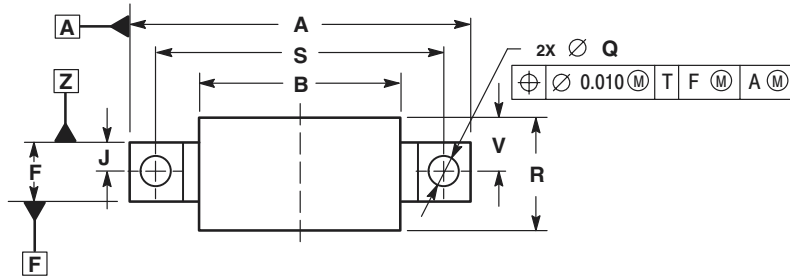
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	750	MHz
Power Gain	$G_p$	23.2 24	24 24.7	24.8 26	dB
Slope	S	0	0.6	1.5	dB
Gain Flatness (40-750 MHz, Peak To Valley)	$G_F$	—	0.4	0.6	dB
Return Loss — Input/Output ( $Z_0 = 75$ Ohms)	IRL/ORL	20 —	— —	— 0.007	dB dB/MHz
Composite Second Order ( $V_{out} = +40$ dBmV/ch., Worst Case) ( $V_{out} = +44$ dBmV/ch., Worst Case)	$CSO_{110}$ $CSO_{77}$	— —	-69 -78	-62 —	dBc

**ELECTRICAL CHARACTERISTICS — continued** ( $V_{CC} = 24 \text{ Vdc}$ ,  $T_C = +30^\circ\text{C}$ ,  $75 \Omega$  system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2 ( $V_{out} = +40 \text{ dBmV/ch.}$ , FM = 55 MHz) ( $V_{out} = +44 \text{ dBmV/ch.}$ , FM = 55 MHz)	110-Channel FLAT	XMD <sub>110</sub>	—	-63	-61	dBc
	77-Channel FLAT	XMD <sub>77</sub>	—	-58	—	
Composite Triple Beat ( $V_{out} = +40 \text{ dBmV/ch.}$ , Worst Case) ( $V_{out} = +44 \text{ dBmV/ch.}$ , Worst Case)	110-Channel FLAT	CTB <sub>110</sub>	—	-67	-63	dBc
	77-Channel FLAT	CTB <sub>77</sub>	—	-64	—	
Noise Figure	50 MHz	NF	—	4.8	5.5	dB
	750 MHz		—	5.5	7	
DC Current		$I_{DC}$	280	318	350	mA

# NOTES

## 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 B

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