



# CATV Amplifier Module

## Features

- Specified for 110- and 152-Channel Loading
- Excellent Distortion Performance
- Superior Gain, Return Loss and DC Current Stability over Temperature
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

## Applications

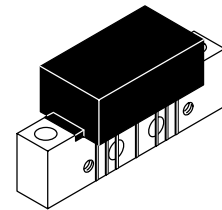
- CATV Systems Operating in the 40 to 1000 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

## Description

- 24 Vdc Supply, 40 to 1000 MHz, CATV Forward Amplifier Module
- Replaced MHW9182C. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

**MHW9182CN**

**1000 MHz  
 19.4 dB GAIN  
 152-CHANNEL  
 CATV AMPLIFIER MODULE**



**CASE 1302-01, STYLE 1**

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**Table 1. Maximum Ratings**

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	$V_{in}$	+70	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

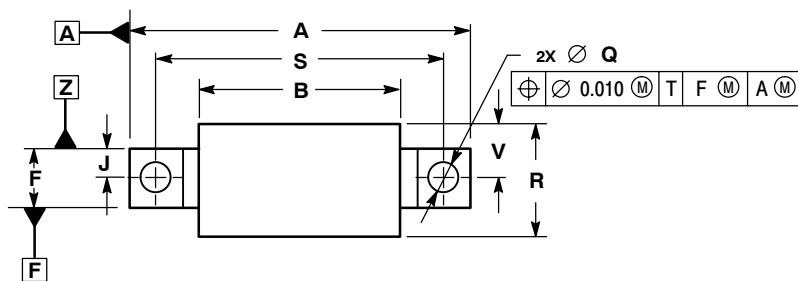
**Table 2. Electrical Characteristics** ( $V_{CC} = 24$  Vdc,  $T_C = +30^\circ\text{C}$ , 75  $\Omega$  system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit	
Frequency Range	BW	40	—	1000	MHz	
Power Gain	$G_p$	18	18.5	19	dB	
50 MHz		18.7	19.4	20.7		
Slope	S	0.4	0.9	1.4	dB	
Gain Flatness (40 - 1000 MHz, Peak to Valley)	$G_F$	—	0.4	0.8	dB	
Return Loss — Input/Output ( $Z_o = 75$ Ohms)	IRL/ORL	20	—	—	dB	
@ 40 MHz		—	—	0.006		dB/MHz
@ $f > 40$ MHz (Derate)		—	—	—		
Composite Second Order	$CSO_{110}$	—	-70	-63	dBc	
( $V_{out} = +40$ dBmV/ch., Worst Case)		110-Channel FLAT	—	-69		-63
( $V_{out} = +38$ dBmV/ch., Worst Case)	$CSO_{152}$	—	-69	-63		
	152-Channel FLAT	—	-69	-63		

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

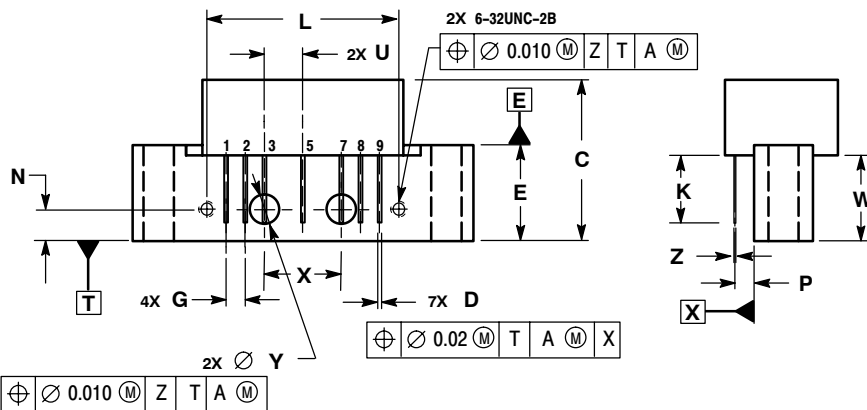
Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2 ( $V_{out} = +40$ dBmV/ch., FM = 55 MHz)	110-Channel FLAT	$XMD_{110}$	—	-66	-64	dBc
	152-Channel FLAT	$XMD_{152}$	—	-65	-61	
Composite Triple Beat ( $V_{out} = +40$ dBmV/ch., Worst Case)	110-Channel FLAT	$CTB_{110}$	—	-68	-66	dBc
	152-Channel FLAT	$CTB_{152}$	—	-64	-61	
Noise Figure	50 MHz	NF	—	4.0	5.0	dB
	550 MHz		—	4.5	—	
	860 MHz		—	5.5	—	
	1000 MHz		—	6.0	7.5	
DC Current ( $V_{DC} = 24$ V, $T_C = 30^\circ\text{C}$ )		$I_{DC}$	180	210	240	mA

## PACKAGE DIMENSIONS



- NOTES:  
 1. CONTROLLING DIMENSION: INCH.  
 2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.

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	7.620	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	----	15.240
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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## REVISION HISTORY

The following table summarizes revisions to this document.

Revision	Date	Description
4	Oct. 2006	<ul style="list-style-type: none"><li>Added missing minus sign to CSO<sub>110</sub> Typ value, p. 1</li></ul>

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