

# CATV Amplifier Module

## Features

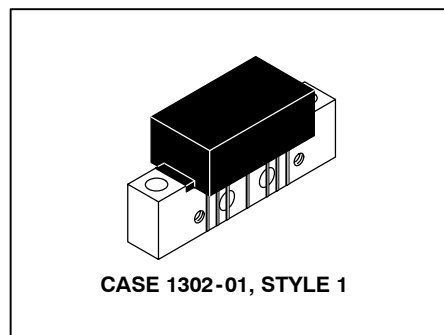
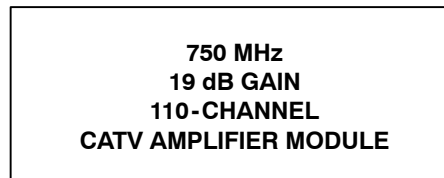
- Specified for 77- and 110-Channel Loading
- Excellent Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

## 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 Module
- Replaced MHW7182C. There are no form, fit or function changes with this part replacement.
- RoHS Compliant



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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

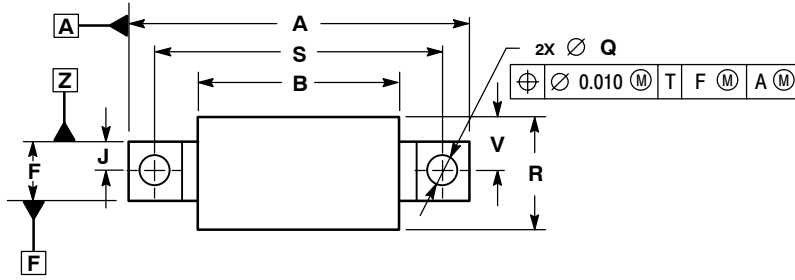
**Table 2. Electrical Characteristics** ( $V_{CC} = 24$  Vdc,  $T_C = +30^\circ\text{C}$ , 75  $\Omega$  system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	750	MHz
Power Gain	$G_p$	18	18.5	19	dB
		18.2	19	20	
Slope	S	0	0.4	1	dB
Gain Flatness (40 - 750 MHz, Peak to Valley)	$G_F$	—	0.3	0.6	dB
Return Loss — Input/Output ( $Z_0 = 75$ Ohms)	IRL/ORL				
@ 40 MHz		20	—	—	dB
@ $f > 40$ MHz (Derate)		—	—	0.005	dB/MHz
Composite Second Order					dBc
( $V_{out} = +40$ dBmV/ch., Worst Case)	CSO <sub>110</sub>	—	-70	-63	
( $V_{out} = +44$ dBmV/ch., Worst Case)	CSO <sub>77</sub>	—	-70	-64	

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

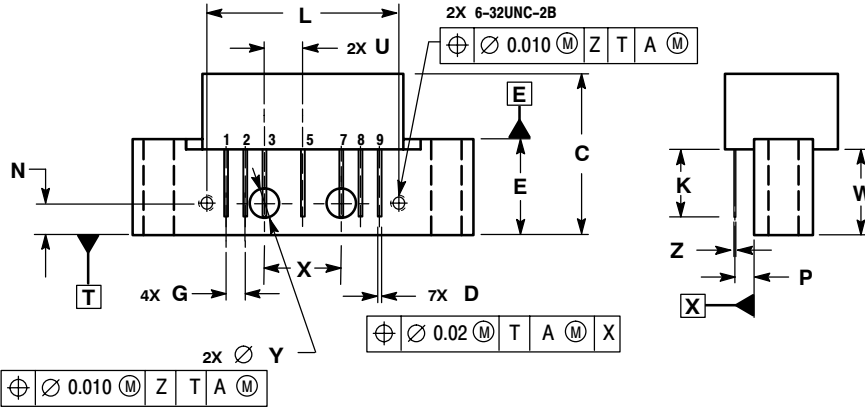
Characteristic	Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2 ( $V_{out} = +40 \text{ dBmV/ch.}$ , FM = 55 MHz) 110-Channel FLAT ( $V_{out} = +44 \text{ dBmV/ch.}$ , FM = 55 MHz) 77-Channel FLAT	XMD <sub>110</sub> XMD <sub>77</sub>	— —	-66 -61	-64 -59	dBc
Composite Triple Beat ( $V_{out} = +40 \text{ dBmV/ch.}$ , Worst Case) 110-Channel FLAT ( $V_{out} = +44 \text{ dBmV/ch.}$ , Worst Case) 77-Channel FLAT	CTB <sub>110</sub> CTB <sub>77</sub>	— —	-68 -66	-66 -64	dBc
Noise Figure 50 MHz 550 MHz 750 MHz	NF	— — —	4.0 4.5 5.0	5.0 — 6.5	dB
DC Current ( $V_{DC} = 24 \text{ V}$ , $T_C = 30^\circ\text{C}$ )	$I_{DC}$	180	220	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
  - GROUND
  - GROUND
  - DELETED
  - VDC
  - DELETED
  - GROUND
  - GROUND
  - RF OUTPUT

**CASE 1302-01  
ISSUE E**

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