

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

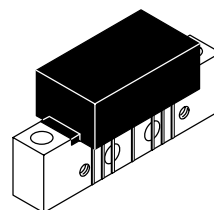
- CATV Systems Operating in the 40 to 1000 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

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

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

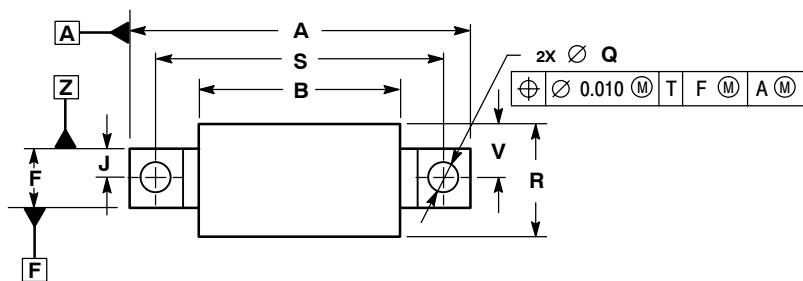
Table 2. Electrical Characteristics ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	1000	MHz
Power Gain 50 MHz 1000 MHz	G_p	18 18.7	18.5 19.4	19 20.7	dB
Slope 40 - 1000 MHz	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) @ 40 MHz @ $f > 40$ MHz (Derate)	IRL/ORL	20 —	— —	— 0.006	dB dB/MHz
Composite Second Order ($V_{out} = +40$ dBmV/ch., Worst Case) ($V_{out} = +38$ dBmV/ch., Worst Case)	CSO ₁₁₀ CSO ₁₅₂	— —	-70 -69	-63 -63	dBc

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

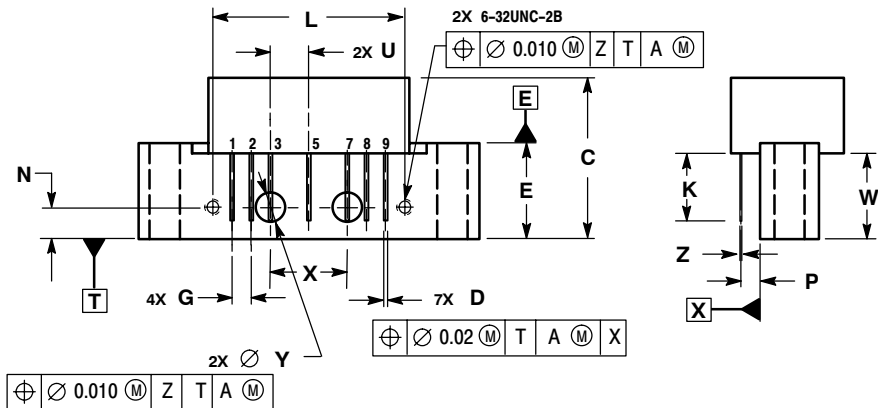
Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2 ($V_{out} = +40 \text{ dBmV/ch.}$, FM = 55 MHz) ($V_{out} = +38 \text{ dBmV/ch.}$, FM = 55 MHz)	110-Channel FLAT	XMD_{110}	—	-66	-64	dBc
	152-Channel FLAT	XMD_{152}	—	-65	-61	
Composite Triple Beat ($V_{out} = +40 \text{ dBmV/ch.}$, Worst Case) ($V_{out} = +38 \text{ dBmV/ch.}$, 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 ($V_{DC} = 24 \text{ V}$, $T_C = 30^\circ\text{C}$)		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

REVISION HISTORY

The following table summarizes revisions to this document.

Revision	Date	Description
4	Oct. 2006	Added missing minus sign to CSO₁₁₀ Typ value, p. 1

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