

# The RF Line CATV Amplifier Module

## Features

- Specified for 77-, 110- and 128-Channel Loading
- Excellent Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

## Applications

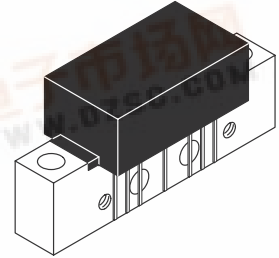
- CATV Systems Operating in the 40 to 870 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

## Description

- 24 Vdc Supply, 40 to 870 MHz, CATV Forward Amplifier

**MHW8202B**

**870 MHz  
 20.9 dB GAIN  
 128-CHANNEL  
 CATV AMPLIFIER**



**CASE 1302-01, STYLE 1**

## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	$V_{CC}$	+28	Vdc
RF Input Voltage (Single Tone)	$V_{in}$	+70	dBmV
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, $T_C = +30^\circ\text{C}$ , 75 $\Omega$ system unless otherwise noted)

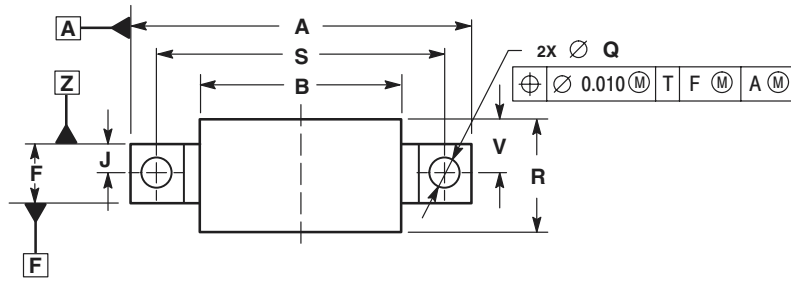
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	870	MHz
Power Gain f = 50 MHz f = 870 MHz	$G_p$	19.8 20.3	20.4 20.9	20.8 21.8	dB
Slope (f = 40–870 MHz)	S	—	0.5	1.2	dB
Gain Flatness (Peak To Valley) (f = 40–870 MHz)	$G_F$	—	0.4	0.6	dB
Input/Output Return Loss @ f = 40 MHz	IRL/ORL	20	21	—	dB
Derate Return Loss @ f > 40 MHz	RLD	—	—	0.005	dB/MHz
Composite Second Order ( $V_{out} = +38$ dBmV/ch; 128-Channels, Worst Case) ( $V_{out} = +40$ dBmV/ch; 110-Channels, Worst Case) ( $V_{out} = +44$ dBmV/ch; 77-Channels, Worst Case)	$CSO_{128}$ $CSO_{110}$ $CSO_{77}$	— — —	-71 -70 -75	-66 -65 -70	dBc

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

Characteristic	Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion ( $V_{out} = +38$ dBmV/ch, 128-Channels, Worst Case) ( $V_{out} = +40$ dBmV/ch, 110-Channels, Worst Case) ( $V_{out} = +44$ dBmV/ch, 77-Channels, Worst Case)	XMD <sub>128</sub> XMD <sub>110</sub> XMD <sub>77</sub>	— — —	-67 -65 -58	-62 -61 -57	dBc
Composite Triple Beat ( $V_{out} = +38$ dBmV/ch, 128-Channels, Worst Case) ( $V_{out} = +40$ dBmV/ch, 110-Channels, Worst Case) ( $V_{out} = +44$ dBmV/ch, 77-Channels, Worst Case)	CTB <sub>128</sub> CTB <sub>110</sub> CTB <sub>77</sub>	— — —	-67 -66 -65	-63 -63 -63	dBc
Noise Figure $f = 50$ MHz $f = 750$ MHz $f = 870$ MHz	NF	— — —	3.8 5.0 5.6	5.0 6.5 7.0	dB
DC Current	$I_{DC}$	180	220	240	mA

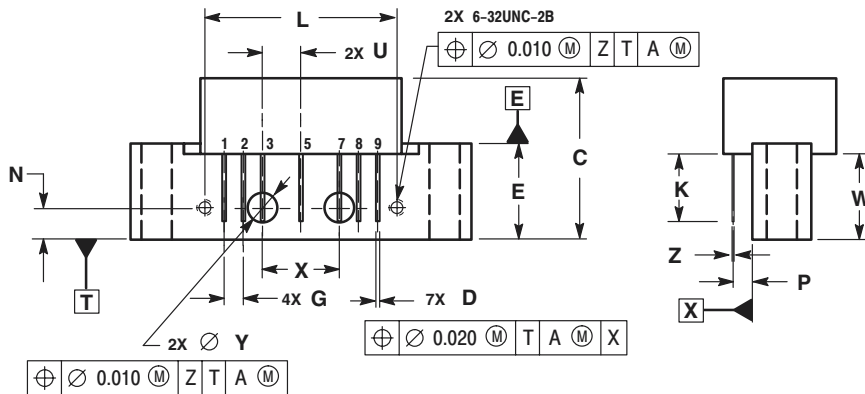
# NOTES

## PACKAGE DIMENSIONS



- NOTES:  
 1. DIMENSIONS ARE IN INCHES.  
 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	7.62	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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**How to reach us:**

**USA/EUROPE/Locations Not Listed:** Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

**JAPAN:** Motorola Japan Ltd.; SPS, Technical Information Center, 3-20-1, Minami-Azabu. Minato-ku, Tokyo 106-8573 Japan. 81-3-3440-3569

**ASIA/PACIFIC:** Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre, 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T. Hong Kong. 852-2668334

**Technical Information Center: 1-800-521-6274**

**HOME PAGE:** <http://www.motorola.com/semiconductors/>

