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Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# CATV Amplifier Module

## Features

- Specified for 77-, 110- and 128-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

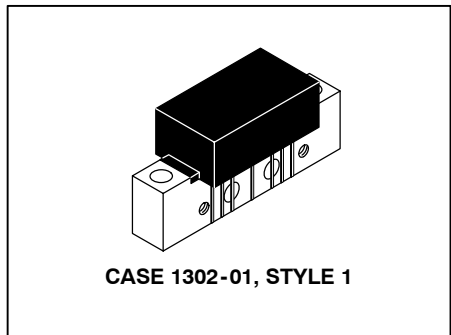
- CATV Systems Operating in the 40 to 860 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

## Description

- 24 Vdc Supply, 40 to 860 MHz, CATV Forward Amplifier Module
- Replaced MHW8182C. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

**MHW8182CN**

**860 MHz  
19.1 dB GAIN  
128-CHANNEL  
CATV AMPLIFIER MODULE**



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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

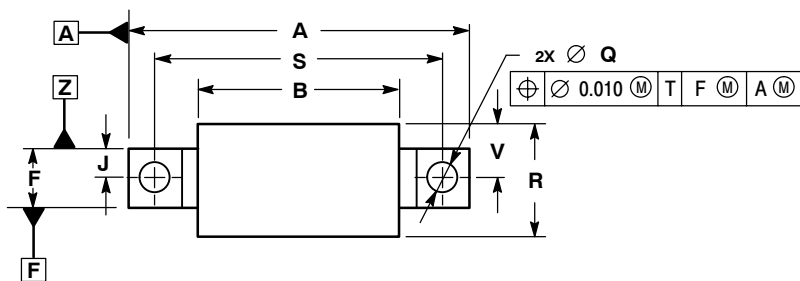
**Table 2. Electrical Characteristics** ( $V_{CC} = 24$  Vdc,  $T_C = +30^\circ\text{C}$ , 75  $\Omega$  system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	860	MHz
Power Gain	$G_p$	18	18.5	19	dB
		18.2	19.1	20.5	
Slope	S	0	0.7	2.5	dB
Gain Flatness (40 - 860 MHz, Peak to Valley)	$G_F$	—	0.3	0.6	dB
Return Loss — Input/Output ( $Z_o = 75$ Ohms)	IRL/ORL				
		20	—	—	dB
		—	—	0.005	dB/MHz
Composite Second Order					dBc
( $V_{out} = +38$ dBmV/ch., Worst Case) 128-Channel FLAT	$CSO_{128}$	—	-71	-64	
( $V_{out} = +40$ dBmV/ch., Worst Case) 110-Channel FLAT	$CSO_{110}$	—	-70	-63	
( $V_{out} = +44$ dBmV/ch., Worst Case) 77-Channel FLAT	$CSO_{77}$	—	-70	-64	

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

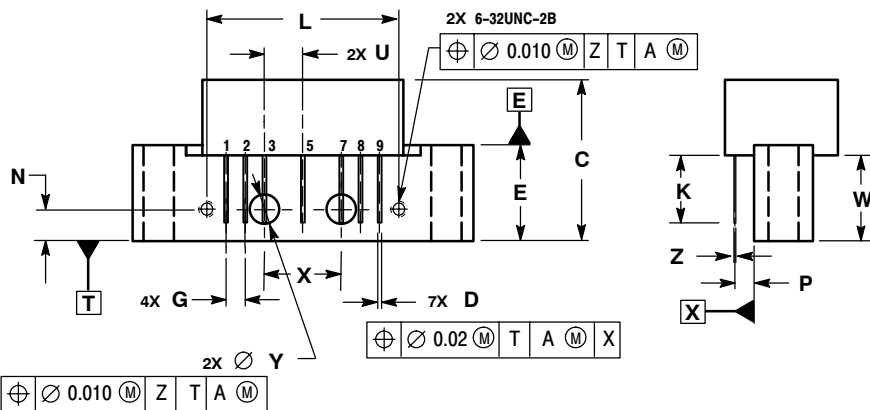
Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2 ( $V_{out} = +38 \text{ dBmV/ch.}$ , FM = 55 MHz)	128-Channel FLAT	$XMD_{128}$	—	-68	-65	dBc
	( $V_{out} = +40 \text{ dBmV/ch.}$ , FM = 55 MHz)	$XMD_{110}$	—	-66	-64	
	( $V_{out} = +44 \text{ dBmV/ch.}$ , FM = 55 MHz)	$XMD_{77}$	—	-61	-59	
Composite Triple Beat ( $V_{out} = +38 \text{ dBmV/ch.}$ , Worst Case)	128-Channel FLAT	$CTB_{128}$	—	-69	-66	dBc
	( $V_{out} = +40 \text{ dBmV/ch.}$ , Worst Case)	$CTB_{110}$	—	-68	-66	
	( $V_{out} = +44 \text{ dBmV/ch.}$ , Worst Case)	$CTB_{77}$	—	-66	-64	
Noise Figure	50 MHz	NF	—	4.0	5.0	dB
	550 MHz		—	4.5	—	
	750 MHz		—	5.0	6.5	
	860 MHz		—	5.5	7.5	
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  
 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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**How to Reach Us:**

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**E-mail:**  
support@freescale.com

**USA/Europe or Locations Not Listed:**  
Freescale Semiconductor  
Technical Information Center, CH370  
1300 N. Alma School Road  
Chandler, Arizona 85224  
+1-800-521-6274 or +1-480-768-2130  
support@freescale.com

**Europe, Middle East, and Africa:**  
Freescale Halbleiter Deutschland GmbH  
Technical Information Center  
Schatzbogen 7  
81829 Muenchen, Germany  
+44 1296 380 456 (English)  
+46 8 52200080 (English)  
+49 89 92103 559 (German)  
+33 1 69 35 48 48 (French)  
support@freescale.com

**Japan:**  
Freescale Semiconductor Japan Ltd.  
Headquarters  
ARCO Tower 15F  
1-8-1, Shimo-Meguro, Meguro-ku,  
Tokyo 153-0064  
Japan  
0120 191014 or +81 3 5437 9125  
support.japan@freescale.com

**Asia/Pacific:**  
Freescale Semiconductor Hong Kong Ltd.  
Technical Information Center  
2 Dai King Street  
Tai Po Industrial Estate  
Tai Po, N.T., Hong Kong  
+800 2666 8080  
support.asia@freescale.com

**For Literature Requests Only:**  
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