

## The RF Line CATV Amplifier Module

### Features

- Specified for 77-, 110- and 128-Channel Loading
- Lower DC Current Requirements
- Excellent Distortion Performance
- Excellent DC Current Stability over Temperature
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

### Applications

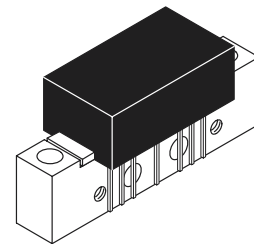
- CATV Systems Operating in the 40 to 870 MHz Frequency Range
- Output Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Amplifiers Requiring Lower Power Dissipation While Maintaining Excellent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

### Description

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

**MHW8205L**

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



**CASE 714Y-03, STYLE 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

### ELECTRICAL CHARACTERISTICS ( $V_{CC} = 24$ Vdc, $T_C = +30$ °C, 75 $\Omega$ system unless otherwise noted)

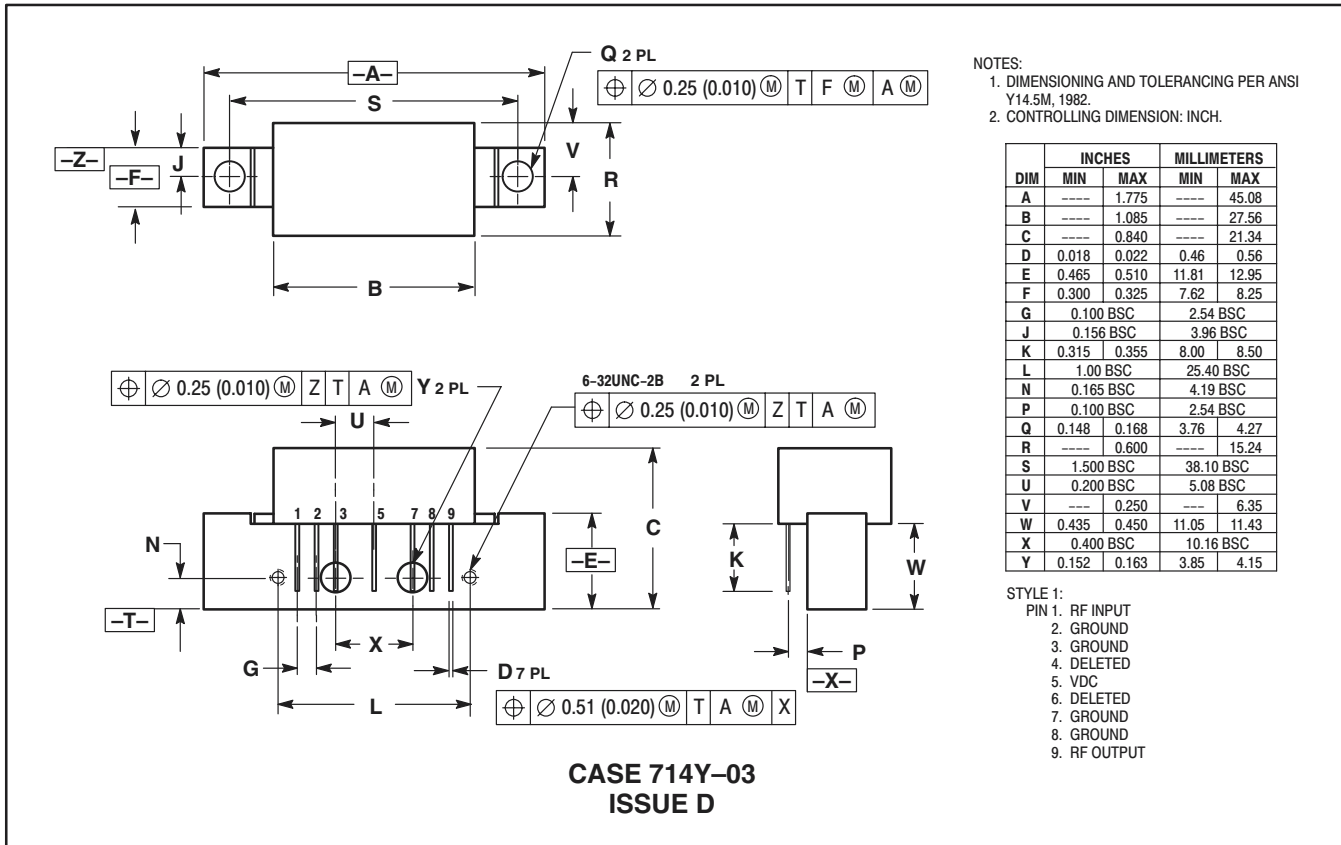
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	870	MHz
Power Gain	$G_p$	19	19.5	20	dB
		19.8	20.4	21.3	
Slope	S	0.2	0.8	1.7	dB
Gain Flatness (40–870 MHz, Peak to Valley)	$G_F$	—	0.5	1.0	dB
Return Loss — Input/Output ( $Z_o = 75$ Ohms)	IRL/ORL				
		20	—	—	dB
		—	—	0.007	dB/MHz
Composite Second Order					dBc
( $V_{out} = +40$ dBmV/ch., Worst Case)	$CSO_{128}$	—	-69	-60	
( $V_{out} = +44$ dBmV/ch., Worst Case)	$CSO_{110}$	—	-70	-63	
	$CSO_{77}$	—	-80	-67	

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

Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2 ( $V_{out} = +40 \text{ dBmV/ch.}$ , FM = 55 MHz)	128-Channel FLAT	$XMD_{128}$	—	-72	-64	dBc
	110-Channel FLAT	$XMD_{110}$	—	-65	-62	
	77-Channel FLAT	$XMD_{77}$	—	-69	-66	
Composite Triple Beat ( $V_{out} = +40 \text{ dBmV/ch.}$ , Worst Case)	128-Channel FLAT	$CTB_{128}$	—	-66	-63	dBc
	110-Channel FLAT	$CTB_{110}$	—	-63	-61	
	77-Channel FLAT	$CTB_{77}$	—	-70	-68	
Noise Figure	50 MHz	NF	—	5.0	6.2	dB
	550 MHz		—	5.8	—	
	750 MHz		—	6.2	—	
	870 MHz		—	7.7	8.5	
DC Current ( $V_{DC} = 24 \text{ V}$ , $T_C = -20^\circ\text{C}$ to $+100^\circ\text{C}$ )		$I_{DC}$	345	365	385	mA

# NOTES

## PACKAGE DIMENSIONS



NOTES:  
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	----	1.775	----	45.08
B	----	1.085	----	27.56
C	----	0.840	----	21.34
D	0.018	0.022	0.46	0.56
E	0.465	0.510	11.81	12.95
F	0.300	0.325	7.62	8.25
G	0.100 BSC		2.54 BSC	
J	0.156 BSC		3.96 BSC	
K	0.315	0.355	8.00	8.50
L	1.00 BSC		25.40 BSC	
N	0.165 BSC		4.19 BSC	
P	0.100 BSC		2.54 BSC	
Q	0.148	0.168	3.76	4.27
R	----	0.600	----	15.24
S	1.500 BSC		38.10 BSC	
U	0.200 BSC		5.08 BSC	
V	----	0.250	----	6.35
W	0.435	0.450	11.05	11.43
X	0.400 BSC		10.16 BSC	
Y	0.152	0.163	3.85	4.15

STYLE 1:  
 PIN 1. RF INPUT  
 2. GROUND  
 3. GROUND  
 4. DELETED  
 5. VDC  
 6. DELETED  
 7. GROUND  
 8. GROUND  
 9. RF OUTPUT

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