

# CATV Amplifier Module

## Features

- Specified for 77- and 110-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

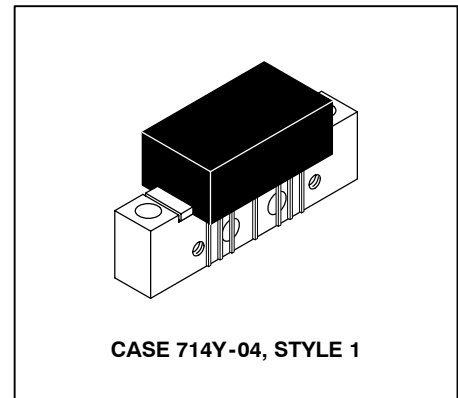
- CATV Systems Operating in the 40 to 750 MHz Frequency Range
- Output Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Amplifier Requiring Lower Power Dissipation While Maintaining Excellent Output Performance

## Description

- 24 Vdc Supply, 40 to 750 MHz, CATV Forward Power Doubler Amplifier

**MHW7205CL**

**750 MHz  
 20 dB GAIN  
 110-CHANNEL  
 CATV AMPLIFIER**



**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

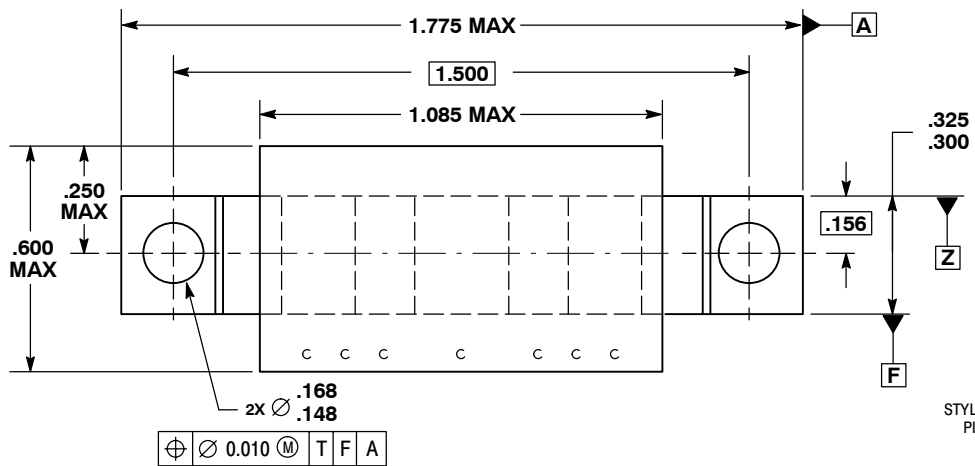
**Table 2. Electrical Characteristics** ( $V_{CC} = 24$  Vdc,  $T_C = +30^\circ\text{C}$ , 75  $\Omega$  system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	750	MHz
Power Gain	$G_p$	19	19.5	20	dB
		19.7	20	21.2	
Slope	S	0.2	0.5	1.7	dB
Gain Flatness (40 - 750 MHz, Peak to Valley)	$G_F$	—	0.3	0.8	dB
Return Loss — Input/Output ( $Z_o = 75$ Ohms)	IRL/ORL				
@ 40 MHz		20	—	—	dB
@ $f > 40$ MHz (Derate)		—	—	0.007	dB/MHz
Composite Second Order					dBc
( $V_{out} = +44$ dBmV/ch., Worst Case)					
110-Channel FLAT	$CSO_{110}$	—	-69	-63	
77-Channel FLAT	$CSO_{77}$	—	-80	-67	
Cross Modulation Distortion @ Ch 2					dBc
( $V_{out} = +44$ dBmV/ch., FM = 55 MHz)					
110-Channel FLAT	$XMD_{110}$	—	-65	-62	
77-Channel FLAT	$XMD_{77}$	—	-69	-66	

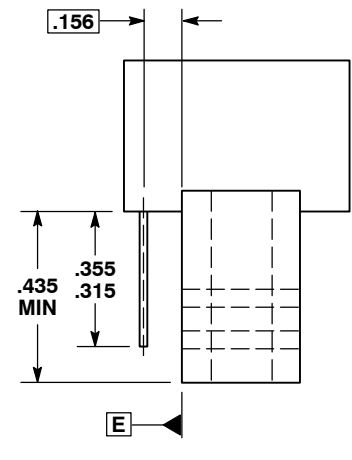
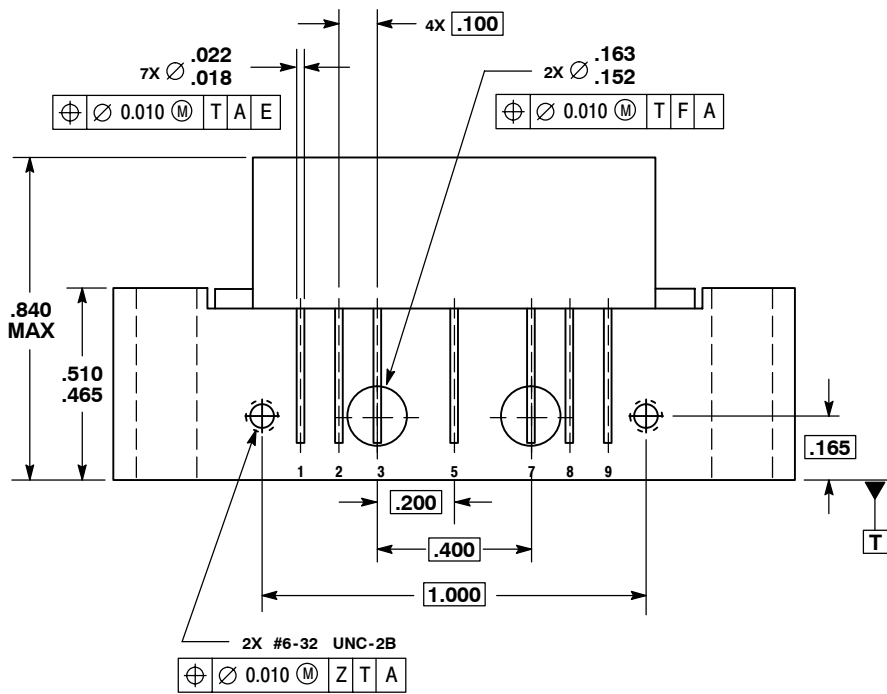
**Table 2. Electrical Characteristics** ( $V_{CC} = 24$  Vdc,  $T_C = +30^\circ\text{C}$ ,  $75\ \Omega$  system unless otherwise noted) (continued)

Characteristic	Symbol	Min	Typ	Max	Unit
Composite Triple Beat ( $V_{out} = +44$ dBmV/ch., Worst Case)	110-Channel FLAT CTB <sub>110</sub>	—	-63	-61	dBc
	77-Channel FLAT CTB <sub>77</sub>	—	-70	-68	
Noise Figure	50 MHz	—	5.0	6.2	dB
	550 MHz	—	5.8	—	
	750 MHz	—	6.2	7.5	
DC Current ( $V_{DC} = 24$ V, $T_C = -20$ to $+100^\circ\text{C}$ )	$I_{DC}$	345	365	385	mA

# PACKAGE DIMENSIONS



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



- NOTES:  
 1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.  
 2. CONTROLLING DIMENSION: INCH.

CASE 714Y-04  
 ISSUE E

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Technical Information Center  
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+33 1 69 35 48 48 (French)  
[support@freescale.com](mailto:support@freescale.com)

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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](mailto:support.japan@freescale.com)

**Asia/Pacific:**  
Freescale Semiconductor Hong Kong Ltd.  
Technical Information Center  
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