

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**

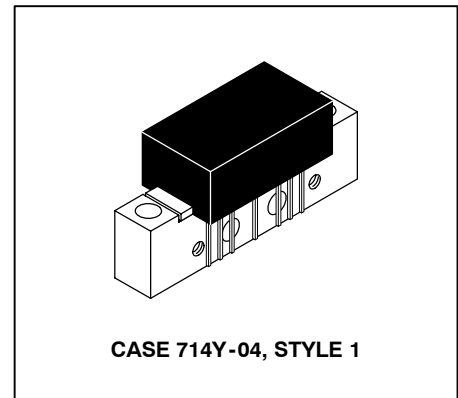


Table 1. Maximum Ratings

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

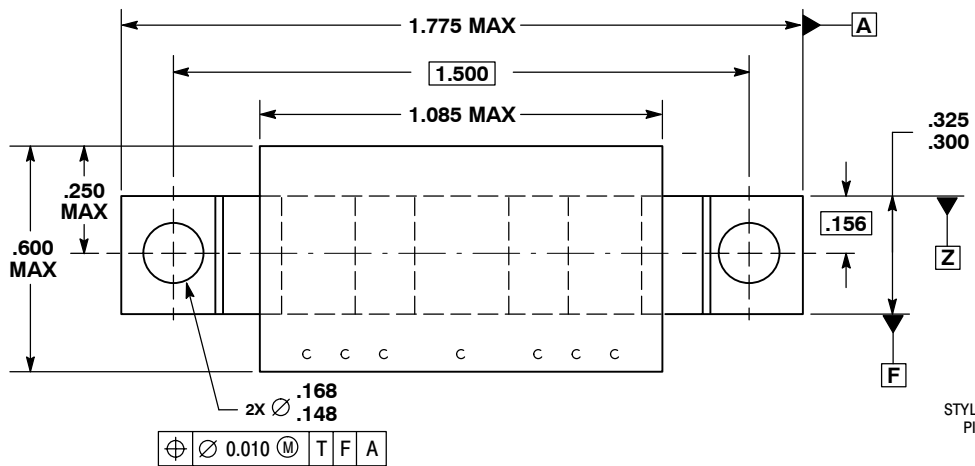
Table 2. Electrical Characteristics ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

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

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

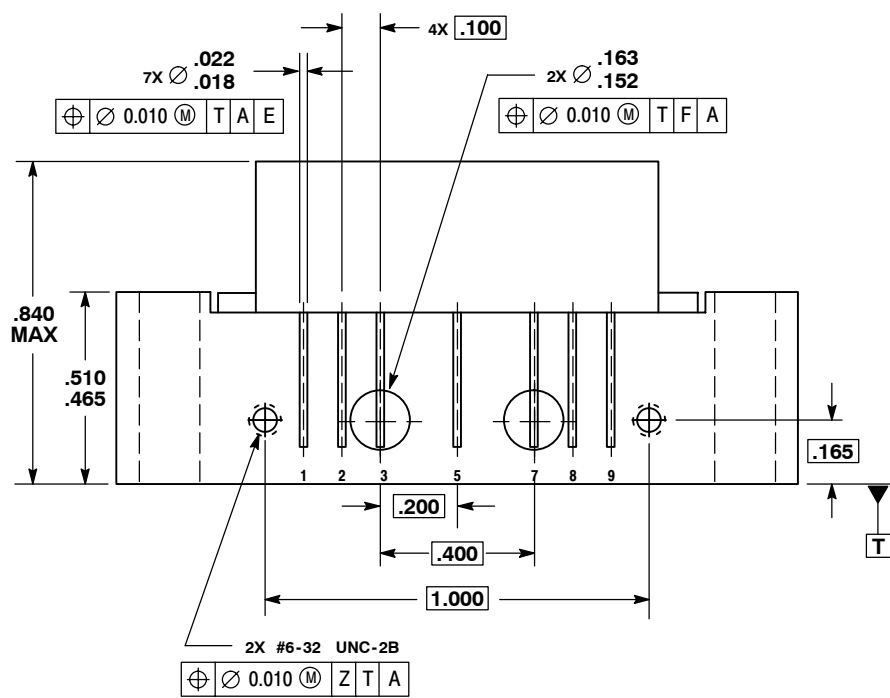
PACKAGE DIMENSIONS



2X Ø .168
2X Ø .148

⊕ Ø 0.010 (M) T F A

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



7X Ø .022
7X Ø .018

⊕ Ø 0.010 (M) T A E

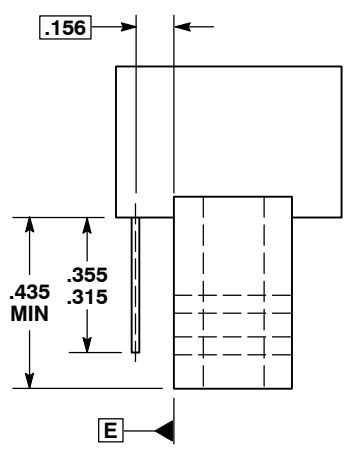
4X .100

2X Ø .163
2X Ø .152

⊕ Ø 0.010 (M) T F A

2X #6-32 UNC-2B

⊕ Ø 0.010 (M) Z T A



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

CASE 714Y-04
 ISSUE E

How to Reach Us:

Home Page:
www.freescale.com

E-mail:
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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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