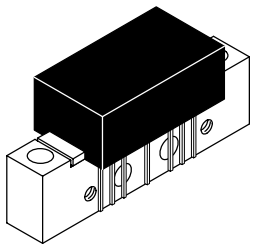
Freescale Semiconductor
Technical Data

MHW7205CL/D
Rev. 2, 10/2003

CATV Amplifier Module

MHW7205CL

750 MHz
20 dB GAIN
110-CHANNEL
CATV AMPLIFIER



CASE 714Y-04, STYLE 1

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

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

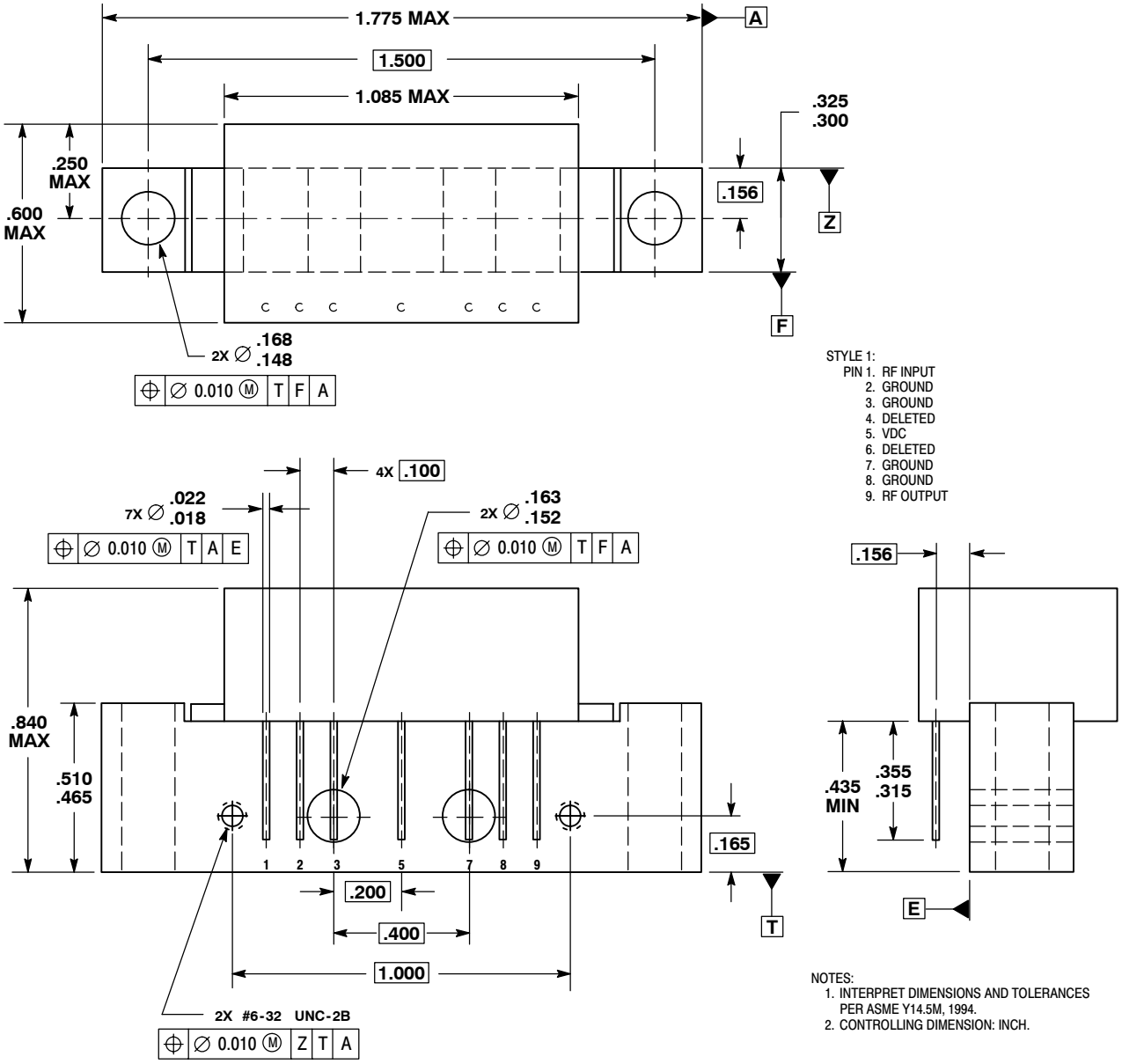
Table 2. Electrical Characteristics (V_{CC} = 24 Vdc, T_C = +30°C, 75 Ω system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Frequency Range		BW	40	—	750	MHz
Power Gain	50 MHz 750 MHz	G_p	19 19.7	19.5 20	20 21.2	dB
Slope	40 - 750 MHz	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)	 @ 40 MHz @ f > 40 MHz (Derate)	IRL/ORL	 20 —	 — —	 — 0.007	 dB dB/MHz
Composite Second Order (V_{out} = +44 dBmV/ch., Worst Case)	 110-Channel FLAT 77-Channel FLAT	 CSO_{110} CSO_{77}	 — —	 -69 -80	 -63 -67	dBc
Cross Modulation Distortion @ Ch 2 (V_{out} = +44 dBmV/ch., FM = 55 MHz)	 110-Channel FLAT 77-Channel FLAT	 XMD_{110} XMD_{77}	 — —	 -65 -69	 -62 -66	dBc

Table 2. Electrical Characteristics (V_{CC} = 24 Vdc, T_C = +30°C, 75 Ω system unless otherwise noted) **(continued)**

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

PACKAGE DIMENSIONS



CASE 714Y-04
ISSUE E

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