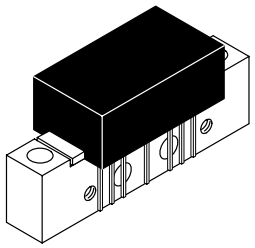
Freescale Semiconductor
Technical Data

Document Number: MHW8205
Rev. 6, 3/2003

CATV Amplifier Module

MHW8205

860 MHz
20.2 dB GAIN
128-CHANNEL
CATV AMPLIFIER MODULE



CASE 714Y-04, STYLE 1

Features

- Specified for 77-, 110- and 128-Channel Loading
- Excellent Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

Applications

- CATV Systems Operating in the 40 to 860 MHz Frequency Range
- Output Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems

Description

- 24 Vdc Supply, 40 to 860 MHz, CATV Forward Power Doubler Amplifier Module

ARCHIVE INFORMATION

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	—	860	MHz
Power Gain	50 MHz 860 MHz	G_p	19.3 20	19.8 20.2	20.3 21.5	dB
Slope	40 - 860 MHz	S	0	.4	1.5	dB
Gain Flatness (40 - 860 MHz, Peak to Valley)		G_F	—	0.3	1.0	dB
Return Loss — Input/Output (Z_o = 75 Ohms) @ 40 MHz @ f > 40 MHz (Derate)		IRL/ORL	 19 —	 — —	 — 0.006	 dB dB/MHz
Composite Second Order (V_{out} = +40 dBmV/ch., Worst Case) (V_{out} = +44 dBmV/ch., Worst Case)	 128-Channel FLAT 110-Channel FLAT 77-Channel FLAT	 CSO_{128} CSO_{110} CSO_{77}	 — — —	 -69 -70 -80	 -60 -63 -68	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
Cross Modulation Distortion @ Ch 2						dBc
(V_{out} = +40 dBmV/ch., FM = 55 MHz)	128-Channel FLAT	XMD_{128}	—	-72	-64	
(V_{out} = +44 dBmV/ch., FM = 55 MHz)	110-Channel FLAT	XMD_{110}	—	-67	-62	
	77-Channel FLAT	XMD_{77}	—	-71	-68	
Composite Triple Beat						dBc
(V_{out} = +40 dBmV/ch., Worst Case)	128-Channel FLAT	CTB_{128}	—	-66	-63	
(V_{out} = +44 dBmV/ch., Worst Case)	110-Channel FLAT	CTB_{110}	—	-63	-61	
	77-Channel FLAT	CTB_{77}	—	-71	-69	
Noise Figure	50 MHz	NF	—	5.0	6.0	dB
	550 MHz		—	5.8	—	
	750 MHz		—	6.2	—	
	860 MHz		—	7.0	8.0	
DC Current (V_{DC} = 24 V, T_C = 30°C)		I_{DC}	365	400	435	mA

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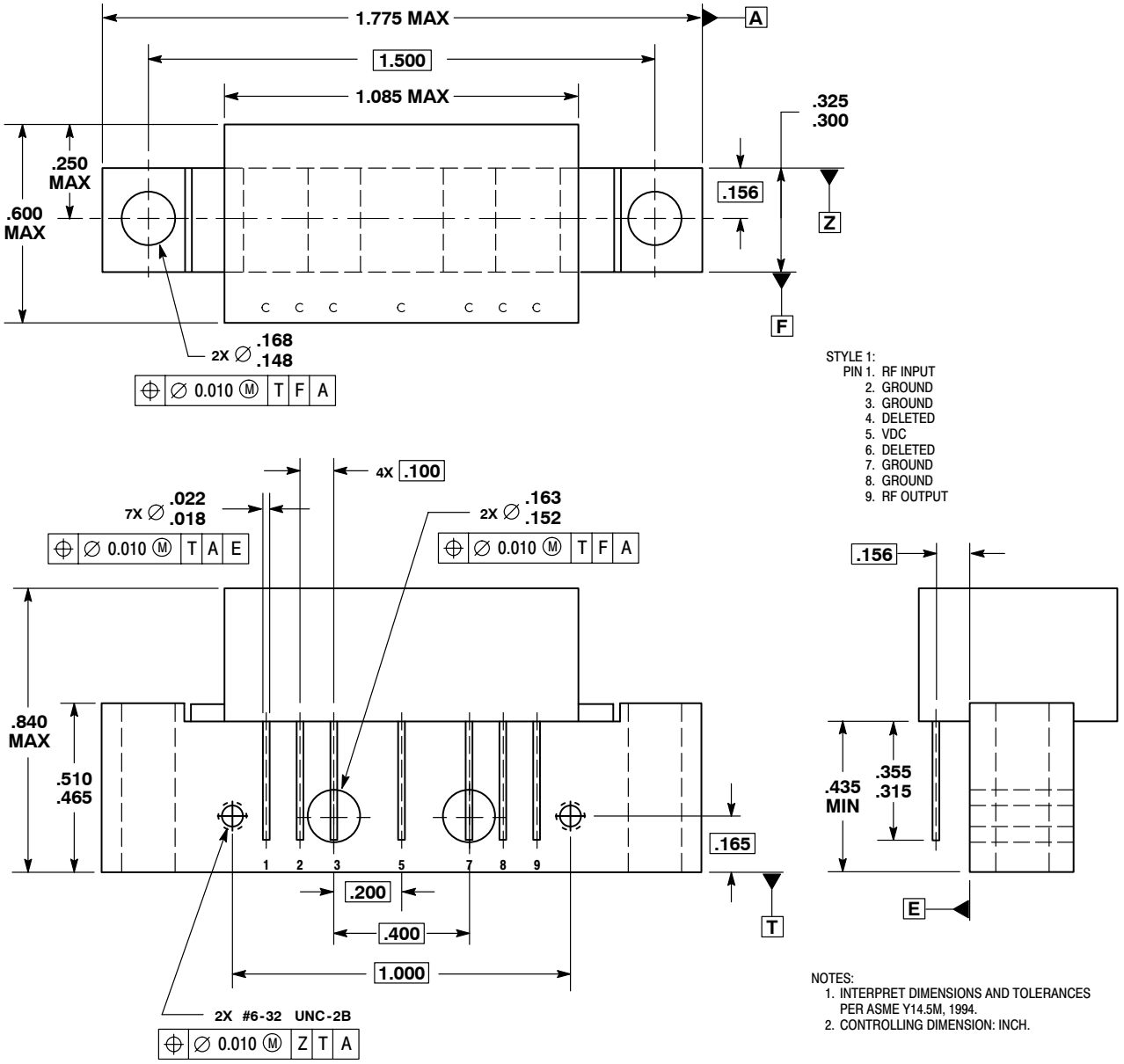
PACKAGE DIMENSIONS



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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