

CATV Amplifier Module

Features

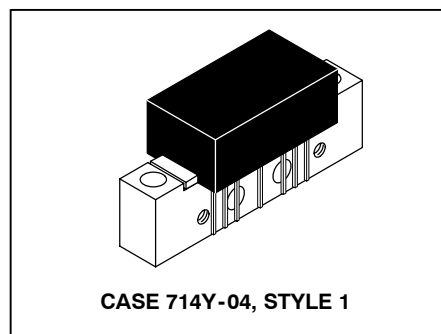
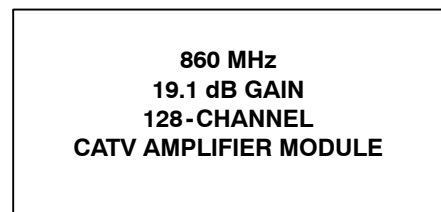
- Specified for 77-, 110- and 128-Channel Loading
- Excellent Distortion Performance
- Superior Gain, Return Loss and DC Current Stability over Temperature
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

Applications

- CATV Systems Operating in the 40 to 860 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

Description

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



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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, $T_C = +30^\circ\text{C}$, 75Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	860	MHz
Power Gain	G_p	18	18.5	19	dB
		18.2	19.1	20.5	
Slope	S	0	0.7	2.5	dB
Gain Flatness (40 - 860 MHz, Peak to Valley)	G_F	—	0.3	0.6	dB
Return Loss — Input/Output ($Z_0 = 75$ Ohms)	IRL/ORL				
@ 40 MHz		20	—	—	dB
@ $f > 40$ MHz (Derate)		—	—	0.005	dB/MHz
Composite Second Order					dBc
($V_{out} = +38$ dBmV/ch., Worst Case) 128-Channel FLAT	CSO_{128}	—	-71	-64	
($V_{out} = +40$ dBmV/ch., Worst Case) 110-Channel FLAT	CSO_{110}	—	-70	-63	
($V_{out} = +44$ dBmV/ch., Worst Case) 77-Channel FLAT	CSO_{77}	—	-70	-64	

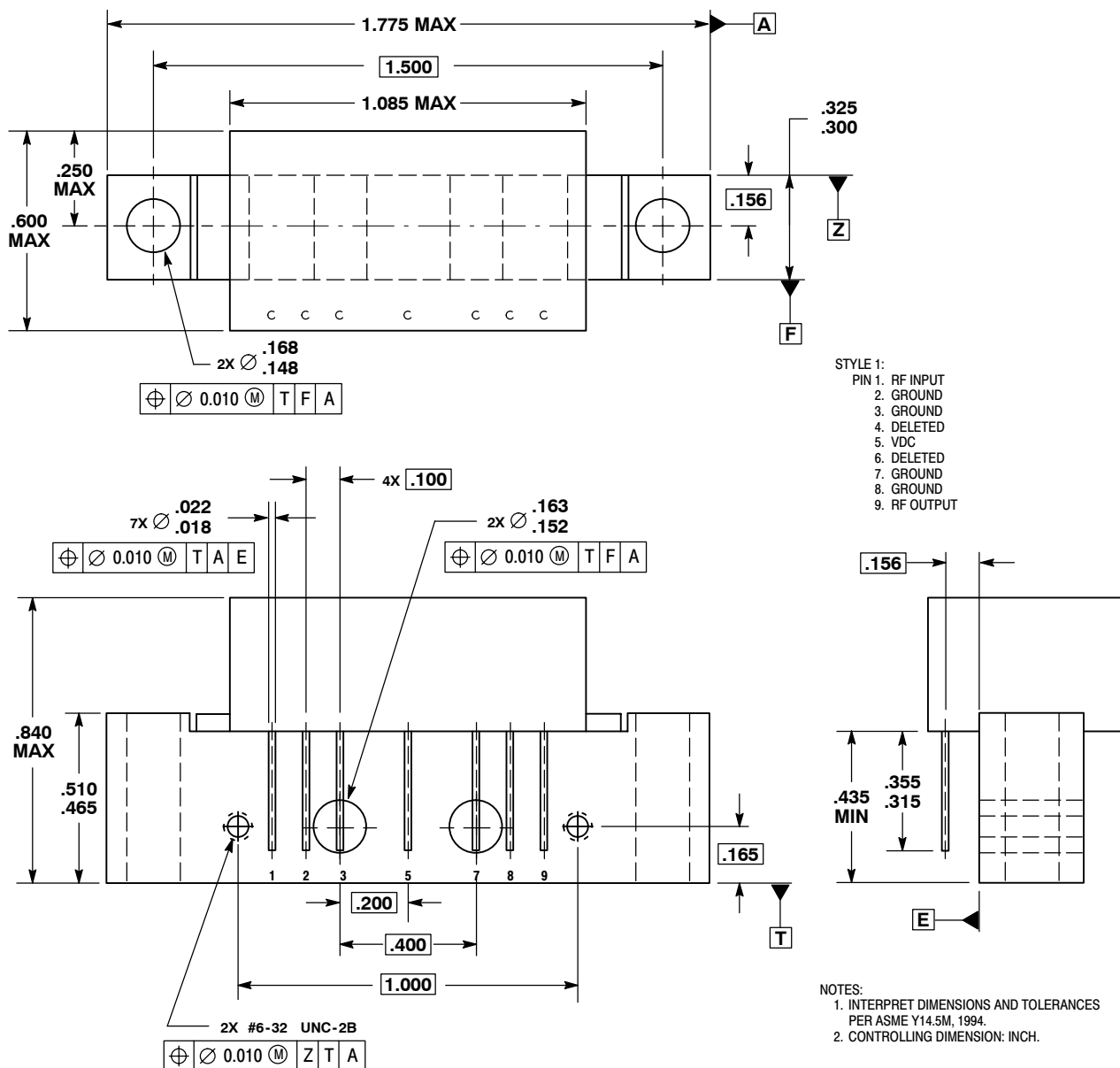
Table 2. Electrical Characteristics ($V_{CC} = 24 \text{ Vdc}$, $T_C = +30^\circ\text{C}$, 75Ω system unless otherwise noted) (continued)

Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2						dBc
($V_{out} = +38 \text{ dBmV/ch.}$, FM = 55 MHz)	128-Channel FLAT	XMD_{128}	—	-68	-65	
($V_{out} = +40 \text{ dBmV/ch.}$, FM = 55 MHz)	110-Channel FLAT	XMD_{110}	—	-66	-64	
($V_{out} = +44 \text{ dBmV/ch.}$, FM = 55 MHz)	77-Channel FLAT	XMD_{77}	—	-61	-59	
Composite Triple Beat						dBc
($V_{out} = +38 \text{ dBmV/ch.}$, Worst Case)	128-Channel FLAT	CTB_{128}	—	-69	-66	
($V_{out} = +40 \text{ dBmV/ch.}$, Worst Case)	110-Channel FLAT	CTB_{110}	—	-68	-66	
($V_{out} = +44 \text{ dBmV/ch.}$, Worst Case)	77-Channel FLAT	CTB_{77}	—	-66	-64	
Noise Figure	50 MHz	NF	—	4.0	5.0	dB
	550 MHz		—	4.5	—	
	750 MHz		—	5.0	6.5	
	860 MHz		—	5.5	7.5	
DC Current ($V_{DC} = 24 \text{ V}$, $T_C = 30^\circ\text{C}$)		I_{DC}	180	220	240	mA

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PACKAGE DIMENSIONS



CASE 714Y-04
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