

The RF Line 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

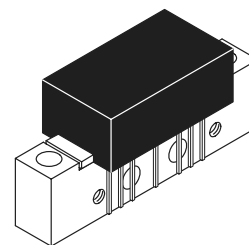
- CATV Systems Operating in the 40 to 860 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

Description

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

MHW8182B

**860 MHz
19.1 dB GAIN
128-CHANNEL
CATV AMPLIFIER**



CASE 714Y-04, STYLE 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

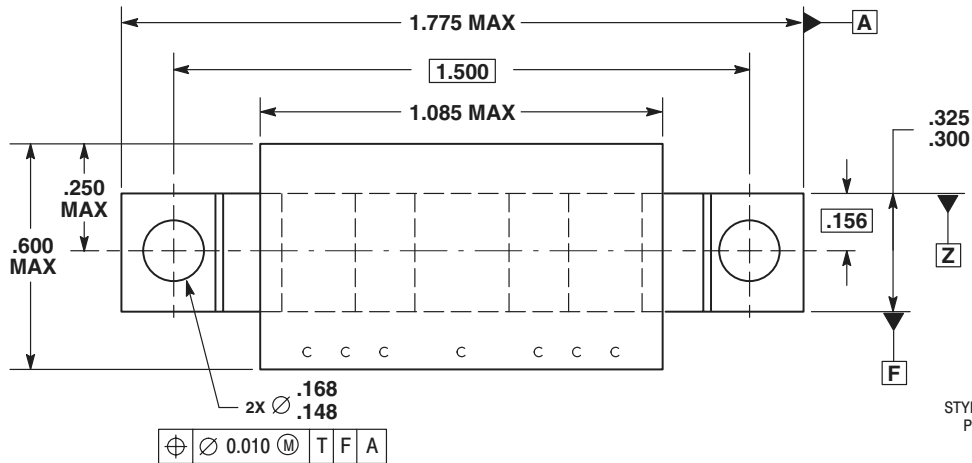
ELECTRICAL CHARACTERISTICS ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	860	MHz
Power Gain 50 MHz 860 MHz	G_p	18 18.2	18.5 19.1	19 20.5	dB
Slope 40–860 MHz	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 ($Z_o = 75$ Ohms) @ 40 MHz @ $f > 40$ MHz (Derate)	IRL/ORL	20 —	— —	— 0.005	dB dB/MHz
Composite Second Order ($V_{out} = +38$ dBmV/ch., Worst Case) ($V_{out} = +40$ 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}	— — —	-71 -70 -70	-64 -63 -64	dBc

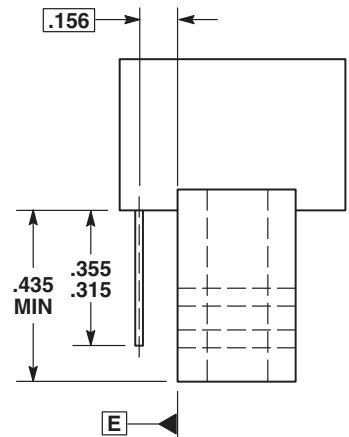
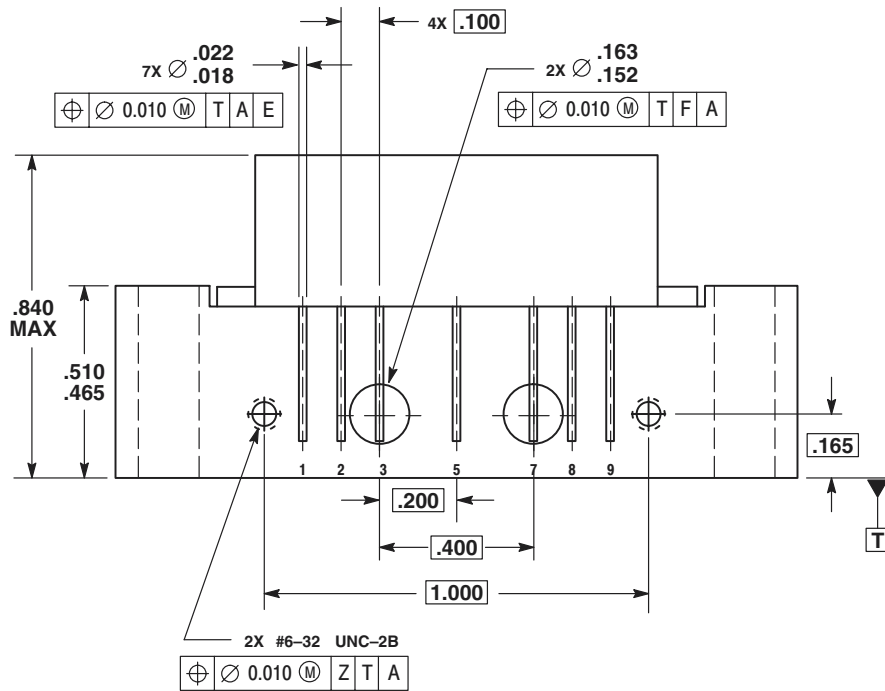
ELECTRICAL CHARACTERISTICS – continued ($V_{CC} = 24\text{ Vdc}$, $T_C = +30^\circ\text{C}$, $75\ \Omega$ system unless otherwise noted)

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

PACKAGE DIMENSIONS



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



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

CASE 714Y-04
ISSUE E

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MHW8182B/D