

The RF Line CATV Amplifier Module

Features

- Specified for 77-, 110- and 128-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

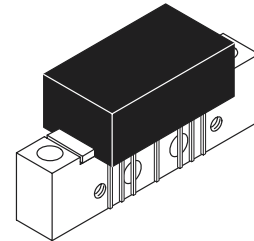
- CATV Systems Operating in the 40 to 870 MHz Frequency Range
- Output Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Amplifiers Requiring Lower Power Dissipation While Maintaining Excellent Output Performance

Description

- 24 Vdc Supply, 40 to 870 MHz, CATV Forward Power Doubler Amplifier

MHW8185L

**870 MHz
19.4 dB GAIN
128-CHANNEL
CATV AMPLIFIER**



CASE 714Y-03, 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)

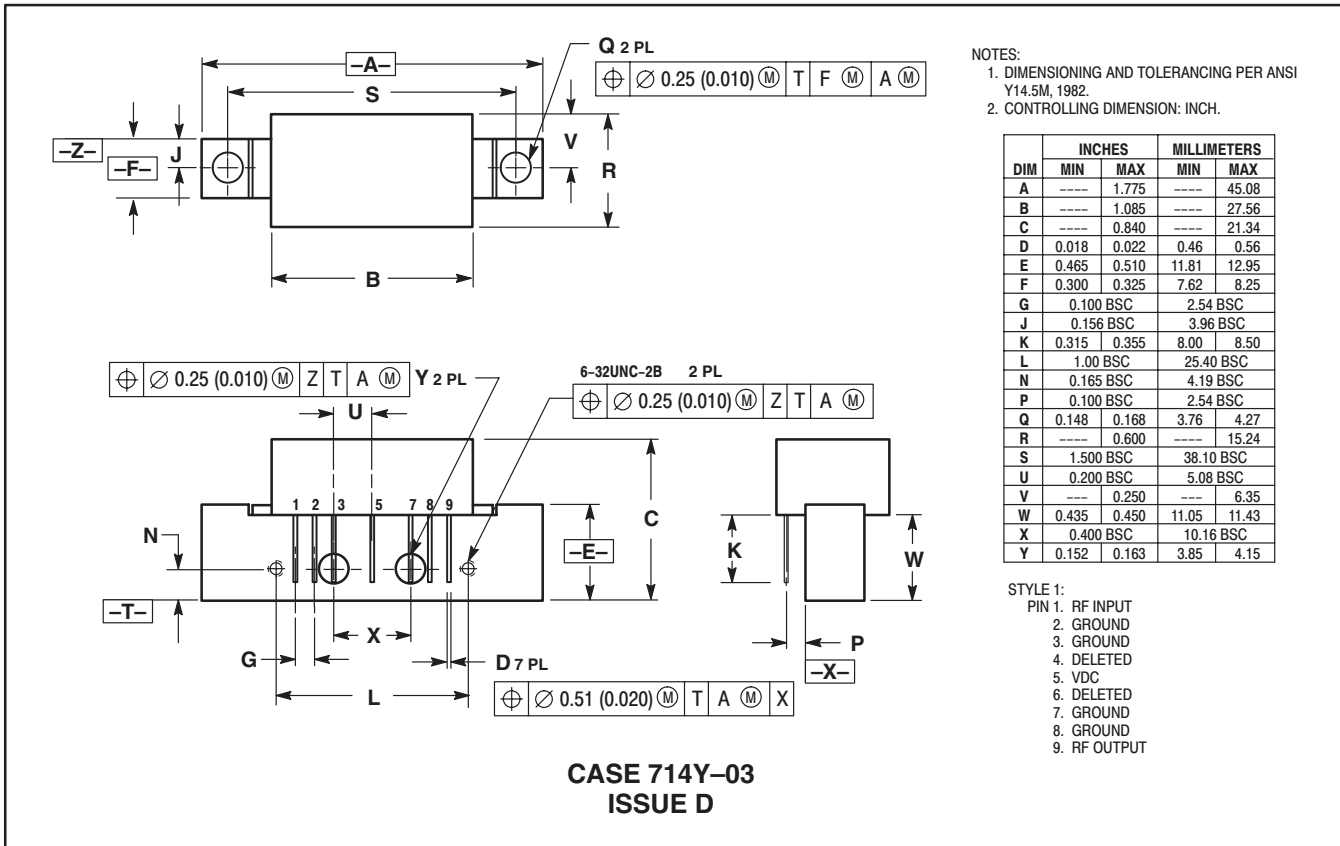
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	870	MHz
Power Gain	G_p	18	18.5	19	dB
		19	19.4	20.5	
Slope	S	0.4	0.9	1.4	dB
Gain Flatness (40–870 MHz, Peak-to-Valley)	G_F	—	0.3	0.8	dB
Return Loss — Input/Output ($Z_o = 75$ Ohms)	IRL/ORL				
		20	—	—	dB
		—	—	0.007	dB/MHz
Composite Second Order					dBc
($V_{out} = +40$ dBmV/ch., Worst Case) 128-Channel FLAT	CSO_{128}	—	-69	-62	
($V_{out} = +44$ dBmV/ch., Worst Case) 110-Channel FLAT	CSO_{110}	—	-70	-64	
($V_{out} = +44$ dBmV/ch., Worst Case) 77-Channel FLAT	CSO_{77}	—	-85	-68	

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

Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2 ($V_{out} = +40 \text{ dBmV/ch.}$, FM = 55 MHz)	128-Channel FLAT	XMD_{128}	—	-72	-64	dBc
	($V_{out} = +44 \text{ dBmV/ch.}$, FM = 55 MHz)	XMD_{110}	—	-66	-63	
	($V_{out} = +44 \text{ dBmV/ch.}$, FM = 55 MHz)	XMD_{77}	—	-69	-67	
Composite Triple Beat ($V_{out} = +40 \text{ dBmV/ch.}$, Worst Case)	128-Channel FLAT	CTB_{128}	—	-66	-63	dBc
	($V_{out} = +44 \text{ dBmV/ch.}$, Worst Case)	CTB_{110}	—	-63	-61	
	($V_{out} = +44 \text{ dBmV/ch.}$, Worst Case)	CTB_{77}	—	-70	-68	
Noise Figure	50 MHz	NF	—	5.3	6.2	dB
	550 MHz		—	5.8	—	
	750 MHz		—	6.6	—	
	870 MHz		—	7.8	8.5	
DC Current ($V_{DC} = 24 \text{ V}$, $T_C = -20 \text{ to } +100^\circ\text{C}$)		I_{DC}	345	365	385	mA

NOTES

PACKAGE DIMENSIONS



NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	----	1.775	----	45.08
B	----	1.085	----	27.56
C	----	0.840	----	21.34
D	0.018	0.022	0.46	0.56
E	0.465	0.510	11.81	12.95
F	0.300	0.325	7.62	8.25
G	0.100 BSC		2.54 BSC	
J	0.156 BSC		3.96 BSC	
K	0.315	0.355	8.00	8.50
L	1.00 BSC		25.40 BSC	
N	0.165 BSC		4.19 BSC	
P	0.100 BSC		2.54 BSC	
Q	0.148	0.168	3.76	4.27
R	----	0.600	----	15.24
S	1.500 BSC		38.10 BSC	
U	0.200 BSC		5.08 BSC	
V	----	0.250	----	6.35
W	0.435	0.450	11.05	11.43
X	0.400 BSC		10.16 BSC	
Y	0.152	0.163	3.85	4.15

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

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