

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

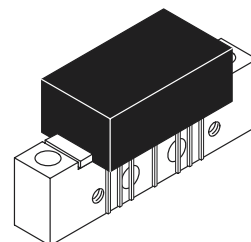
- CATV Systems Operating in the 40 to 870 MHz Frequency Range
- Output Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Amplifiers Requiring Lower Power Dissipation While Maintaining Excellent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

Description

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

MHW8205L

**870 MHz
20.4 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)

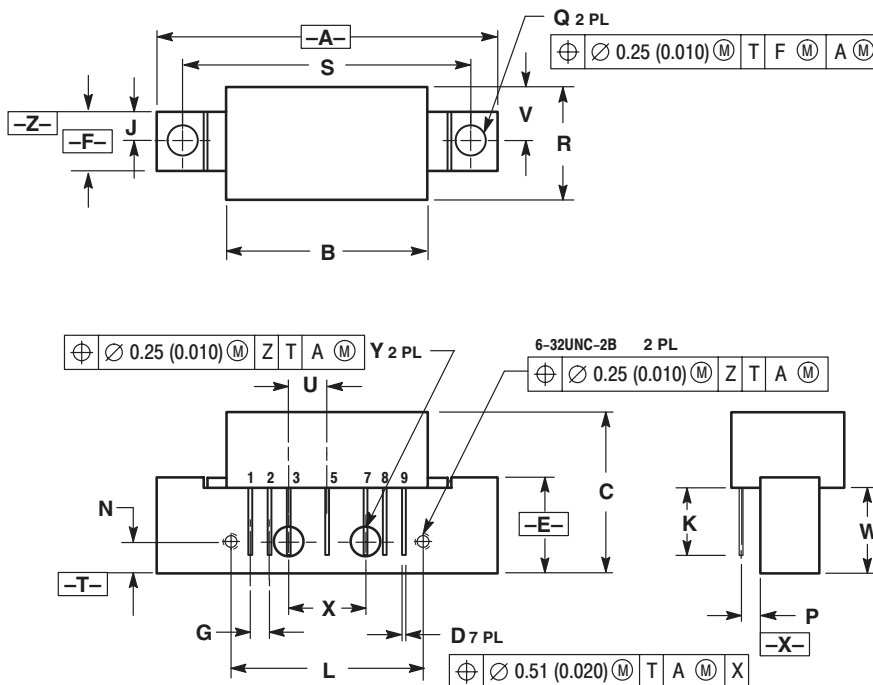
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	870	MHz
Power Gain 50 MHz 870 MHz	G_p	19 19.8	19.5 20.4	20 21.3	dB
Slope 40–870 MHz	S	0.2	0.8	1.7	dB
Gain Flatness (40–870 MHz, Peak to Valley)	G_F	—	0.5	1.0	dB
Return Loss — Input/Output ($Z_0 = 75$ Ohms) @ 40 MHz @ $f > 40$ MHz (Derate)	IRL/ORL	20 —	— —	— 0.007	dB dB/MHz
Composite Second Order ($V_{out} = +40$ dBmV/ch., Worst Case) ($V_{out} = +44$ dBmV/ch., Worst Case)	CSO_{128} CSO_{110} CSO_{77}	— — —	-69 -70 -80	-60 -63 -67	dBc

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) ($V_{out} = +44 \text{ dBmV/ch.}$, FM = 55 MHz)	128-Channel FLAT	XMD_{128}	—	-72	-64	dBc
	110-Channel FLAT	XMD_{110}	—	-65	-62	
	77-Channel FLAT	XMD_{77}	—	-69	-66	
Composite Triple Beat ($V_{out} = +40 \text{ dBmV/ch.}$, Worst Case) ($V_{out} = +44 \text{ dBmV/ch.}$, Worst Case)	128-Channel FLAT	CTB_{128}	—	-66	-63	dBc
	110-Channel FLAT	CTB_{110}	—	-63	-61	
	77-Channel FLAT	CTB_{77}	—	-70	-68	
Noise Figure	50 MHz	NF	—	5.0	6.2	dB
	550 MHz		—	5.8	—	
	750 MHz		—	6.2	—	
	870 MHz		—	7.7	8.5	
DC Current ($V_{DC} = 24 \text{ V}$, $T_C = -20^\circ\text{C}$ 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

CASE 714Y-03 ISSUE D

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How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

JAPAN: Motorola Japan Ltd.; SPS, Technical Information Center, 3-20-1, Minami-Azabu. Minato-ku, Tokyo 106-8573 Japan. 81-3-3440-3569

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre, 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T. Hong Kong. 852-26668334

Technical Information Center: 1-800-521-6274

HOME PAGE: <http://www.motorola.com/semiconductors/>



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