The RF Line
CATV Amplifier Module

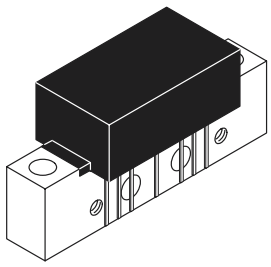
MHW7222B

750 MHz
22.7 dB GAIN
110–CHANNEL
CATV AMPLIFIER

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

Applications
- CATV Systems Operating in the 40 to 750 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 750 MHz, CATV Forward Amplifier



CASE 1302–01, STYLE 1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	V_{CC}	+28	Vdc
RF Input Voltage (Single Tone)	V_{in}	+70	dBmV
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°C, 75 Ω system unless otherwise noted)

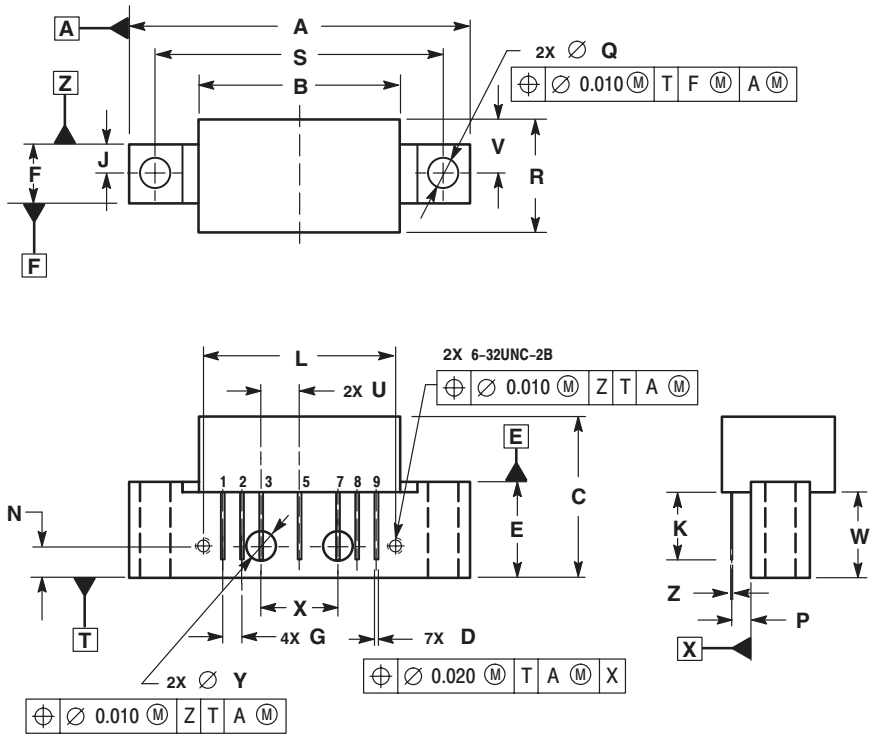
Characteristic		Symbol	Min	Typ	Max	Unit
Frequency Range		BW	40	—	750	MHz
Power Gain	f = 50 MHz f = 750 MHz	G_p	21.4 22.2	21.9 22.7	22.4 23.2	dB
Slope (f = 40–750 MHz)		S	0.2	0.7	1.2	—
Gain Flatness (Peak To Valley)	(f = 40–750 MHz)	G_F	—	0.4	0.6	—
Input/Output Return Loss @ f = 40 MHz		IRL/ORL	20	25	—	dB
Derate Return Loss @ f > 40 MHz		RLD	—	—	0.006	dB/MHz
Composite Second Order (V_{out} = +40 dBmV/ch; 110 Channels) (V_{out} = +44 dBmV/ch; 77 Channels)		 CSO_{110} CSO_{77}	 — —	 –67 –67	 –60 –60	dBc

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

Characteristic	Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion					dBc
(V_{out} = +40 dBmV/ch, 110–Channel @ Fm = 55.25 MHz)	XMD_{110}	—	–63	–60	
(V_{out} = +44 dBmV/ch, 77–Channel @ Fm = 55.25 MHz)	XMD_{77}	—	–59	–56	
Composite Triple Beat					dBc
(V_{out} = +40 dBmV/ch, 110–Channels, Worst Case)	CTB_{110}	—	–64	–61	
(V_{out} = +44 dBmV/ch, 77–Channels, Worst Case)	CTB_{77}	—	–65	–62	
Noise Figure f = 50 MHz	NF	—	3.7	4.5	dB
f = 750 MHz		—	5	6.5	
DC Current	I_{DC}	180	220	240	mA

NOTES

PACKAGE DIMENSIONS



NOTES:
1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	---	1.775	---	45.085
B	---	1.085	---	27.559
C	---	0.840	---	21.336
D	0.015	0.021	0.381	0.533
E	0.465	0.510	11.811	12.954
F	0.300	0.325	7.62	8.255
G	0.100 BSC		2.540 BSC	
J	0.156 BSC		3.962 BSC	
K	0.315	0.355	8.001	9.017
L	1.000 BSC		25.400 BSC	
N	0.165 BSC		4.191 BSC	
P	0.100 BSC		2.540 BSC	
Q	0.148	0.168	3.759	4.267
R	---	0.600	---	15.24
S	1.500 BSC		38.100 BSC	
U	0.200 BSC		5.080 BSC	
V	---	0.250	---	6.350
W	0.435	---	11.049	---
X	0.400 BSC		10.160 BSC	
Y	0.152	0.163	3.861	4.140
Z	0.009	0.011	0.229	0.279

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

CASE 1302–01
ISSUE B

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