

The RF Line CATV Amplifier Module

Features

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

Applications

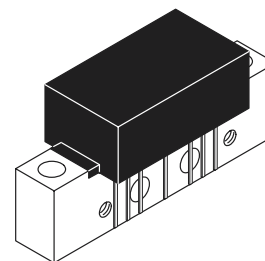
- CATV Systems Operating in the 40 to 750 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

Description

- 24 Vdc Supply, 40 to 750 MHz, CATV Forward Amplifier

MHW7222B

**750 MHz
22.7 dB GAIN
110-CHANNEL
CATV 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, $T_C = +30^\circ\text{C}$, 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

Freescale Semiconductor, Inc.

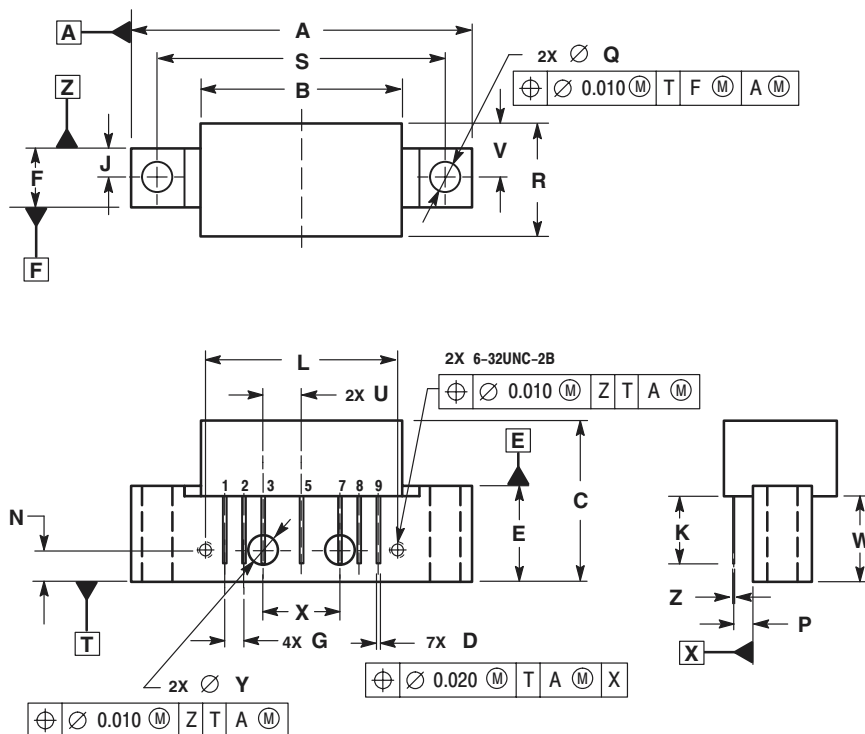
ELECTRICAL CHARACTERISTICS — continued ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

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

NOTES

Freescall Semiconductor, Inc.

PACKAGE DIMENSIONS



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

DIM	INCHES		MILLIMETERS	
	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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