

The RF Line CATV Amplifier Module

Features

- Specified for 77-, 110- and 128-Channel Loading
- Excellent Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

Applications

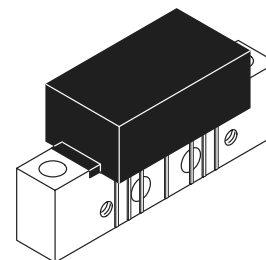
- CATV Systems Operating in the 40 to 860 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

Description

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

MHW8222B

**860 MHz
22.7 dB GAIN
128-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	—	860	MHz
Power Gain $f = 50$ MHz $f = 860$ MHz	G_p	21.4 21.8	21.9 22.7	22.4 24	dB
Slope ($f = 40$ –860 MHz)	S	0.1	0.8	1.5	—
Gain Flatness (Peak To Valley) ($f = 40$ –860 MHz)	G_F	—	0.4	0.6	—
Input/Output Return Loss @ $f = 40$ MHz	IRL/ORL	20	24	—	dB
Derate Return Loss @ $f > 40$ MHz	RLD	—	—	0.009	dB/MHz
Composite Second Order ($V_{out} = +38$ dBmV/ch; 128 Channels) ($V_{out} = +40$ dBmV/ch; 110 Channels) ($V_{out} = +44$ dBmV/ch; 77 Channels)	CSO_{128} CSO_{110} CSO_{77}	— — —	-68 -64 -65	-60 -61 -62	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 ($V_{out} = +38$ dBmV/ch, 128–Channel @ $F_m = 55.25$ MHz) ($V_{out} = +40$ dBmV/ch, 110–Channel @ $F_m = 55.25$ MHz) ($V_{out} = +44$ dBmV/ch, 77–Channel @ $F_m = 55.25$ MHz)	XMD ₁₂₈ XMD ₁₁₀ XMD ₇₇	— — —	–65 –63 –59	–63 –60 –56	dBc
Composite Triple Beat ($V_{out} = +38$ dBmV/ch, 128–Channels, Worst Case) ($V_{out} = +40$ dBmV/ch, 110–Channels, Worst Case) ($V_{out} = +44$ dBmV/ch, 77–Channels, Worst Case)	CTB ₁₂₈ CTB ₁₁₀ CTB ₇₇	— — —	–66 –64 –65	–64 –61 –62	dBc
Noise Figure $f = 50$ MHz $f = 750$ MHz $f = 860$ MHz	NF	— — —	3.7 5 5.6	4.5 6.5 7	dB
DC Current	I_{DC}	180	220	240	mA

NOTES

