

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

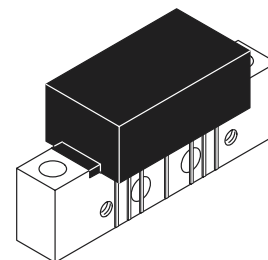
- CATV Systems Operating in the 40 to 860 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

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

[illegible]

Technical drawing of a shaft-hub assembly. The shaft is shown with a diameter of $\varnothing 0.010$ (M) and a tolerance zone of \oplus . The hub is shown with a diameter of $\varnothing 0.020$ (M) and a tolerance zone of \oplus . The fit is specified as 2X 6-32UNC-2B. The drawing includes dimensions for length (L), width (U), height (C), and various fit parameters (E, Z, P, X, T, A, M, X). The shaft is labeled with 1, 2, 3, 5, 7, 8, 9. The hub is labeled with 1, 2, 3, 5, 7, 8, 9. The fit is specified as 2X 6-32UNC-2B. The drawing includes dimensions for length (L), width (U), height (C), and various fit parameters (E, Z, P, X, T, A, M, X).

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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