

The RF Line

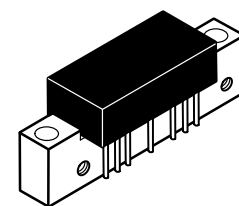
110-Channel (750 MHz) and 128-Channel (860 MHz) CATV Amplifiers

MHW7222
MHW8222

22 dB GAIN
750/860 MHz
110/128 CHANNEL
CATV AMPLIFIERS

The MHW7222 and MHW8222 are designed specifically for up to 860 MHz CATV systems as amplifiers in trunk and line extender applications. These amplifiers feature ion-implanted, arsenic emitter transistors and an all gold metallization system.

- Specified for 110/128-Channel Performance
- Broadband Power Gain — @ $f = 40\text{--}860$ MHz
 $G_p = 22$ dB Typ @ 750 and 860 MHz
- Broadband Noise Figure
NF = 5.5 dB Typ — MHW7222
6.4 dB Typ — MHW8222
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization



CASE 714-06, STYLE 1

ABSOLUTE 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
		40	—	860	
Power Gain	G_p	20.8	21.5	22.2	dB
$f = 50$ MHz	All	22	22.3	24	
$f = 750$ MHz	MHW7222	21.8	22.3	24	
$f = 860$ MHz	MHW8222				
Slope ($f = 40\text{--}750$ MHz)	S	0	1	2	—
Gain Flatness (Peak To Valley)	G_f	—	0.4	0.6	—
($f = 40\text{--}750$ MHz)		—	0.4	0.8	
Input/Output Return Loss @ $f = 40$ MHz	IRL/ORL	20	24	—	dB
Derate Return Loss @ $f > 40$ MHz	RLD	—	—	0.008	dB/MHz
		—	—	0.009	
Composite Second Order	CSO ₁₁₀	—	-63	-55	dB
($V_{out} = +40$ dBmV/ch; 110 Channels)	CSO ₁₂₈	—	-63	-56	
($V_{out} = +38$ dBmV/ch; 128 Channels)					

(continued)

ELECTRICAL CHARACTERISTICS — continued

Characteristic	Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion ($V_{out} = +40$ dBmV/ch, 110-Channel @ $F_m = 55.25$ MHz) ($V_{out} = +38$ dBmV/ch, 128-Channel @ $F_m = 55.25$ MHz)	MHW7222 MHW8222 XMD ₁₁₀ XMD ₁₂₈	—	-64 -68	-60 -60	dBc
Composite Triple Beat ($V_{out} = +40$ dBmV/ch, 110-Channels, Worst Case) ($V_{out} = +38$ dBmV/ch, 128-Channels, Worst Case)	MHW7222 MHW8222 CTB ₁₁₀ CTB ₁₂₈	—	-62 -62	-60 -60	dBc
Noise Figure	$f = 50$ MHz All $f = 750$ MHz MHW7222 $f = 860$ MHz MHW8222	—	3.6 5.5 6.4	5 7 7.5	dB
DC Current	I_{DC}	180	220	240	mA

PACKAGE DIMENSIONS

Q 2 PL
 $\text{⌀ } 0.25 (0.010) \text{ (M) T F (M) A (M)}$

6-32UNC-2B 2 PL
 $\text{⌀ } 0.25 (0.010) \text{ (M) Z T A (M)}$

D 7 PL
 $\text{⌀ } 0.25 (0.010) \text{ (M) T A (M)}$

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	4.10 BSC		
P	0.100 BSC	2.54 BSC		
Q	0.148	0.168	3.76	4.27
R	—	0.595	—	15.11
S	1.500 BSC	38.10 BSC		
U	0.200 BSC	5.08 BSC		
V	0.280 BSC	7.11 BSC		
W	0.435	0.450	11.05	11.43

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

**CASE 714-06
 ISSUE K**

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MHW7222/D

