The RF Line

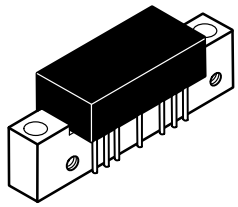
110-Channel (750 MHz) and 128-Channel (860 MHz) CATV Amplifiers

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 = 40–860 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°C, 75 Ω system unless otherwise noted)

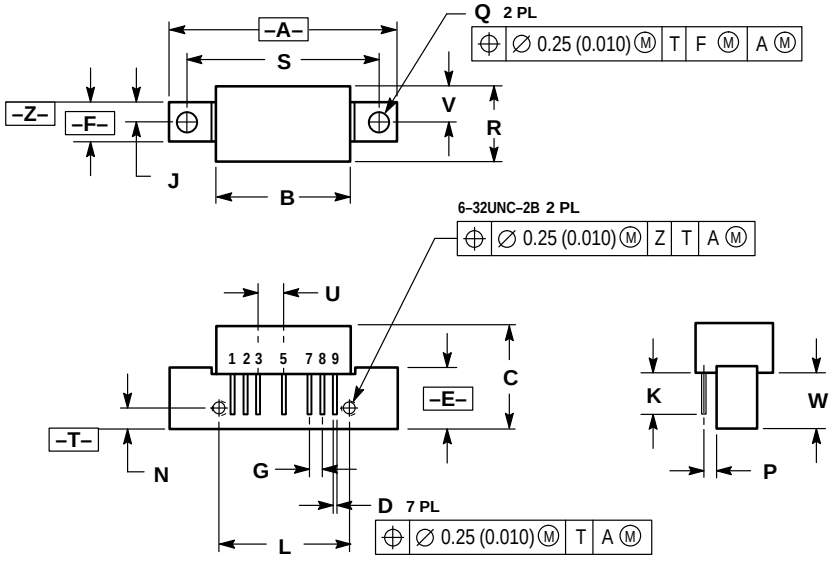
Characteristic			Symbol	Min	Typ	Max	Unit
Frequency Range		MHW7222 MHW8222	BW	40 40	— —	750 860	MHz
Power Gain	f = 50 MHz f = 750 MHz f = 860 MHz	All MHW7222 MHW8222	G_p	20.8 22 21.8	21.5 22.3 22.3	22.2 24 24	dB
Slope (f = 40–750 MHz)		MHW7222, MHW8222	S	0	1	2	—
Gain Flatness (Peak To Valley) (f = 40–750 MHz)		MHW7222 MHW8222	G_f	— —	0.4 0.4	0.6 0.8	—
Input/Output Return Loss @ f = 40 MHz		MHW7222, MHW8222	IRL/ORL	20	24	—	dB
Derate Return Loss @ f > 40 MHz		MHW7222 MHW8222	RLD	— —	— —	0.008 0.009	dB/MHz
Composite Second Order (V_{out} = +40 dBmV/ch; 110 Channels) (V_{out} = +38 dBmV/ch; 128 Channels)		 MHW7222 MHW8222	 CSO_{110} CSO_{128}	 — —	 –63 –63	 –55 –56	dB

(continued)

ELECTRICAL CHARACTERISTICS — continued

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

PACKAGE DIMENSIONS



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS	
DIM	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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