

The RF Line

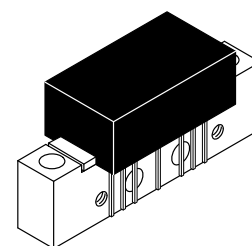
110-Channel (750 MHz) CATV Amplifier

MHW7222A

The MHW7222A is designed specifically for up to 750 MHz CATV systems as amplifiers in trunk and line extender applications. This amplifier features ion-implanted, arsenic emitter transistors, an all gold metallization system and offers improved ruggedness and distortion performance.

- Specified for 110-Channel Performance
- Broadband Power Gain — @ $f = 40-750$ MHz
 $G_p = 22.3$ dB Typ @ 750 MHz
- Broadband Noise Figure
NF = 5.5 dB Typ
- All Gold Metallization

22 dB GAIN
750 MHz
110 CHANNEL
CATV AMPLIFIER



CASE 714Y-03, 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	BW	40	—	750	MHz
Power Gain $f = 50$ MHz $f = 750$ MHz	G_p	20.8 22	21.5 22.3	22.2 24	dB
Slope ($f = 40-750$ MHz)	S	0	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	24	—	dB
Derate Return Loss @ $f > 40$ MHz	RLD	—	—	0.008	dB/MHz
Composite Second Order ($V_{out} = +40$ dBmV/ch; 110 Channels) ($V_{out} = +44$ dBmV/ch; 77 Channels)	CSO ₁₁₀ CSO ₇₇	— —	-65 -65	-57 —	dB

(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) ($V_{out} = +44$ dBmV/ch, 77-Channel @ $F_m = 55.25$ MHz)	XMD ₁₁₀ XMD ₇₇	—	-64 -60	-60 —	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	—	-63 -62	-60 —	dBc
Noise Figure			$f = 50$ MHz $f = 750$ MHz	3.6 5 7	dB
DC Current	I_{DC}	180	220	240	mA

PACKAGE DIMENSIONS

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

Y 2 PL
 $\text{Ø } 0.25 (0.010) \text{ (M) Z T A (M)}$

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

D 7 PL
 $\text{Ø } 0.51 (0.020) \text{ (M) T A (M) X}$

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	—	4.19 BSC	—
P	0.100 BSC	—	2.54 BSC	—
Q	0.148	0.168	3.76	4.27
R	—	0.600	—	15.24
S	1.500 BSC	—	38.10 BSC	—
U	0.200 BSC	—	5.08 BSC	—
V	—	0.250	—	6.35
W	0.435	0.450	11.05	11.43
X	0.400 BSC	—	10.16 BSC	—
Y	0.152	0.163	3.85	4.15

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

**CASE 714Y-03
 ISSUE D**

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