

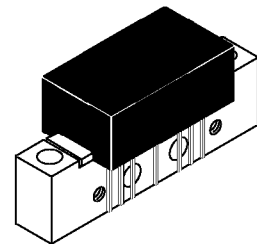
## The RF Line 110-Channel (750 MHz) CATV Amplifier

**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 — @  $f = 40\text{--}750\text{ MHz}$   
     $G_p = 22.3\text{ dB Typ @ }750\text{ MHz}$
- Broadband Noise Figure  
     $NF = 5.5\text{ dB Typ}$
- 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 ( $V_{CC} = 24\text{ Vdc}$ , $T_C = +30^\circ\text{C}$ , $75\ \Omega$ system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	750	MHz
Power Gain $f = 50\text{ MHz}$ $f = 750\text{ MHz}$	$G_p$	20.8 22	21.5 22.3	22.2 24	dB
Slope ( $f = 40\text{--}750\text{ MHz}$ )	S	0	1	2	—
Gain Flatness (Peak To Valley) $(f = 40\text{--}750\text{ MHz})$	$G_f$	—	0.4	0.6	—
Input/Output Return Loss @ $f = 40\text{ MHz}$	IRL/ORL	20	24	—	dB
Derate Return Loss @ $f > 40\text{ MHz}$	RLD	—	—	0.008	dB/MHz
Composite Second Order ( $V_{out} = +40\text{ dBmV/ch}$ ; 110 Channels) ( $V_{out} = +44\text{ dBmV/ch}$ ; 77 Channels)	CSO <sub>110</sub> CSO <sub>77</sub>	— —	-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 <sub>110</sub> XMD <sub>77</sub>	—	-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 <sub>110</sub> CTB <sub>77</sub>	—	-63 -62	-60 —	dBc
Noise Figure $f = 50$ MHz $f = 750$ MHz	NF	—	3.6 5.5	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**  
 $\text{Ø } 0.51 (0.020) \text{ (M) T A (M) X}$

**TABLE OF DIMENSIONS:**

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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