

# The RF Line

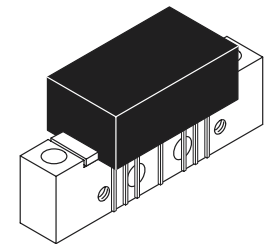
## 110-Channel (750 MHz) CATV Amplifier

**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.

**22 dB GAIN  
750 MHz  
110 CHANNEL  
CATV AMPLIFIER**

- Specified for 110-Channel Performance
- Broadband Power Gain — @ f = 40–750 MHz  
G<sub>p</sub> = 22.3 dB Typ @ 750 MHz
- Broadband Noise Figure  
NF = 5.5 dB Typ
- All Gold Metallization



CASE 714Y-03, STYLE 1

### ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	V <sub>CC</sub>	+28	Vdc
RF Input Voltage (Single Tone)	V <sub>in</sub>	+70	dBmV
Operating Case Temperature Range	T <sub>C</sub>	-20 to +100	°C
Storage Temperature Range	T <sub>stg</sub>	-40 to +100	°C

### ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 24 Vdc, T<sub>C</sub> = +30°C, 75 Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	750	MHz
Power Gain	G <sub>p</sub>	f = 50 MHz 20.8 f = 750 MHz 22	21.5 22.3	22.2 24	dB
Slope (f = 40–750 MHz)	S	0	1	2	—
Gain Flatness (Peak To Valley)	G <sub>f</sub>	—	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					dB
(V <sub>out</sub> = +40 dBmV/ch; 110 Channels)	CSO <sub>110</sub>	—	-65	-57	
(V <sub>out</sub> = +44 dBmV/ch; 77 Channels)	CSO <sub>77</sub>	—	-65	—	

(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	— —	3.6 5 7	dB
DC Current	$I_{DC}$	180	220	240	mA

**PACKAGE DIMENSIONS**

**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		4.19 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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