The RF Line

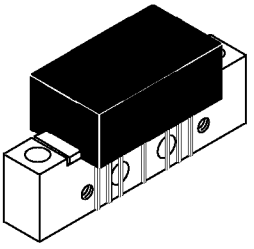
110-Channel (750 MHz) CATV Amplifier

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)

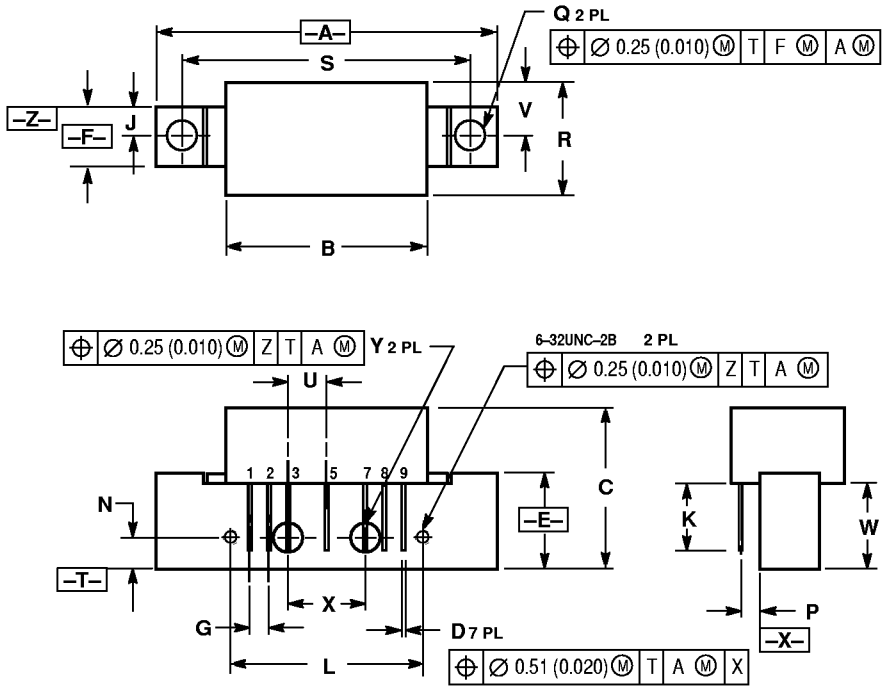
Characteristic		Symbol	Min	Typ	Max	Unit
Frequency Range		BW	40	—	750	MHz
Power Gain	f = 50 MHz f = 750 MH	G_p	20.8 22	21.5 22.3	22.2 24	dB
Slope (f = 40–750 MHz)		S	0	1	2	—
Gain Flatness (Peak To Valley)	(f = 40–750 MHz)	G_f	—	0.4	0.6	—
Input/Output Return Loss @ f = 40 MHz		IRL/ORL	20	24	—	dB
Derate 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 @ Fm = 55.25 MHz) (V_{out} = +44 dBmV/ch, 77–Channel @ Fm = 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	NF	— —	3.6 5.5	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.

	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		4.19 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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