

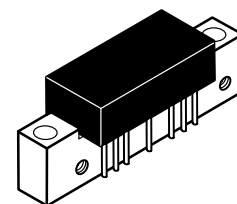
The RF Line 450 MHz CATV Amplifier

... designed for broadband applications requiring low distortion characteristics. Specified for use as a CATV trunk-line amplifier. Features ion-implanted arsenic emitter transistors with 7.0 GHz f_T and an all gold metallization system.

- Specified for 53- and 60-Channel Performance
- Broadband Power Gain — @ $f = 40\text{--}450\text{ MHz}$
 $G_p = 12.5\text{ dB (Typ)}$
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 $G_p = 12.5\text{ dB (Typ)}$
- Broadband Noise Figure — @ $f = 450\text{ MHz}$
 $NF = 7.0\text{ dB (Typ)}$
- Superior Gain, Return Loss and DC Current Stability with Temperature

MHW5122A

**12.5 dB GAIN
450 MHz
60-CHANNEL
CATV TRUNK AMPLIFIER**



CASE 714-06, STYLE 1

ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V_{in}	+70	dBmV
DC Supply Voltage	V_{CC}	+28	Vdc
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 Ω system unless otherwise noted)

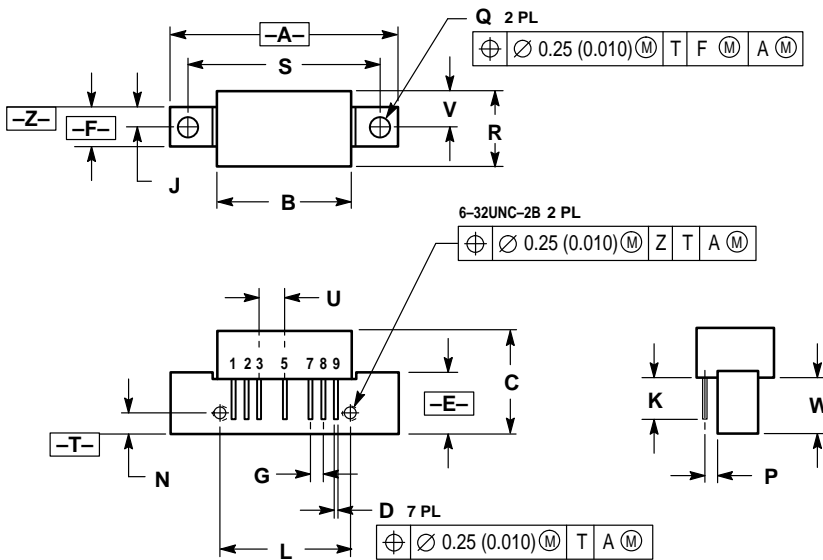
Characteristic	Symbol	Min	Typ	Max	Unit	
Frequency Range	BW	40	—	450	MHz	
Power Gain — 50 MHz	G _p	12	12.5	13	dB	
Slope	S	+0.2	+0.7	+1.5	dB	
Gain Flatness (Peak To Valley)	—	—	0.2	0.4	dB	
Return Loss — Input/Output (Z ₀ = 75 Ohms)	IRL/ORL	18	—	—	dB	
Second Order Intermodulation Distortion (V _{out} = +46 dBmV per ch., Ch 2, M6, M15) (V _{out} = +46 dBmV per ch., Ch 2, M13, M22)	IMD	— —	—78 —	— —72	dB	
Cross Modulation Distortion (V _{out} = +46 dBmV per ch.)	53–Channel FLAT 60–Channel FLAT	XMD ₅₃ XMD ₆₀	— —	—63 —63	— —61	dB
Composite Triple Beat (V _{out} = +46 dBmV per ch.)	53–Channel FLAT 60–Channel FLAT	CTB ₅₃ CTB ₆₀	— —	—63 —61	— —58	dB
DIN (European Applications Only)* 300 MHz — (CH V + Q – P @ W) 400 MHz — (CH M8 + M15 – M9 @ M14) 450 MHz — (CH M20 + M23 – M22 @ M21)	DIN1 DIN2 DIN3	— — —	125 124 123	— — —	dBμV**	
Noise Figure (f = 450 MHz)	NF	—	7.0	8.0	dB	
DC Current	I _{DC}	—	200	240	mA	

***DIN (European Applications Only)**

NCTA Channel Designation	Frequency (MHz)	DIN Output Level (dBmV)** (Typ)	DIN Beat Level dB Relative to Ref. Ch.
P	253.25	+59	≤ -60
Q	259.25	+59	
V	289.25	+65	
W (Ref.)	295.25	+65	
M8	361.25	+58	≤ -60
M9	367.25	+58	
M14 (Ref.)	397.25	+64	
M15	403.25	+64	
M20	433.25	+63	≤ -60
M21 (Ref.)	439.25	+63	
M22	445.25	+57	
M23	451.25	+57	

** DIN (dB μ V) = Reference Channel Level (dBmV) + 60 dB

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		4.10 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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MOTOROLA



MHW5122A/D

