

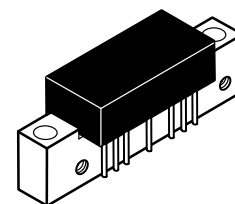
## The RF Line 450 MHz CATV Amplifier

... 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 — @  $f = 40-450$  MHz  
 $G_p = 12.5$  dB (Typ)
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 $G_p = 12.5$  dB (Typ)
- Broadband Noise Figure — @  $f = 450$  MHz  
 $NF = 7.0$  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 ( $V_{CC} = 24$ Vdc, $T_C = +30$ °C, 75 $\Omega$ system unless otherwise noted)

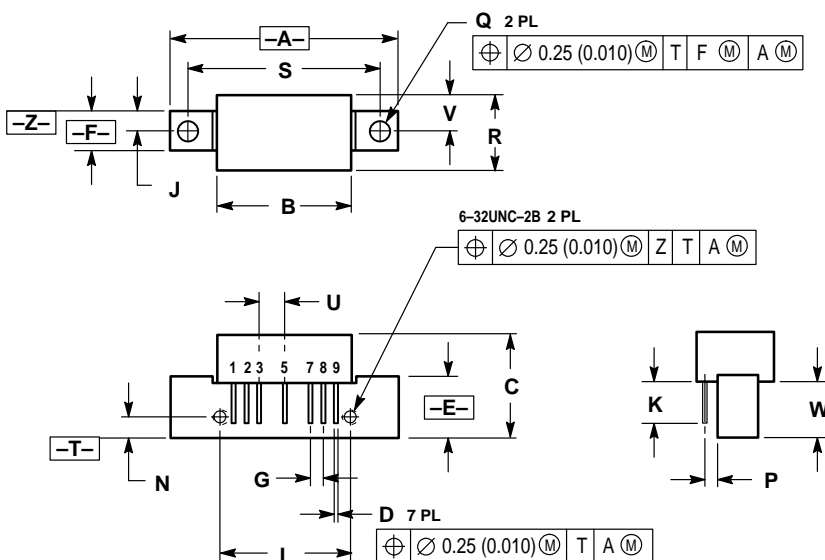
Characteristic	Symbol	Min	Typ	Max	Unit	
Frequency Range	BW	40	—	450	MHz	
Power Gain — 50 MHz	$G_p$	12	12.5	13	dB	
Slope	S	+0.2	+0.7	+1.5	dB	
Gain Flatness (Peak To Valley)	—	—	0.2	0.4	dB	
Return Loss — Input/Output ( $Z_0 = 75$ Ohms)	IRL/ORL	18	—	—	dB	
Second Order Intermodulation Distortion ( $V_{out} = +46$ dBmV per ch., Ch 2, M6, M15) ( $V_{out} = +46$ dBmV per ch., Ch 2, M13, M22)	IMD	—	-78	—	dB	
Cross Modulation Distortion ( $V_{out} = +46$ dBmV per ch.)	53-Channel FLAT 60-Channel FLAT	XMD <sub>53</sub> XMD <sub>60</sub>	— —	-63 -63	— -61	dB
	Composite Triple Beat ( $V_{out} = +46$ dBmV per ch.)	53-Channel FLAT 60-Channel FLAT	CTB <sub>53</sub> CTB <sub>60</sub>	— —	-63 -61	— -58
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	— — —	dB $\mu$ V**	
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 Q V W (Ref.)	253.25 259.25 289.25 295.25	+59 +59 +65 +65	≤ -60
M8 M9 M14 (Ref.) M15	361.25 367.25 397.25 403.25	+58 +58 +64 +64	≤ -60
M20 M21 (Ref.) M22 M23	433.25 439.25 445.25 451.25	+63 +63 +57 +57	≤ -60

\*\* DIN (dBμV) = 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

