

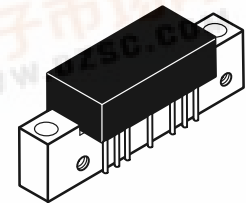
## The RF Line 450 MHz CATV Amplifier

... designed for broadband applications requiring low distortion characteristics. Specifically intended for CATV market requirements. Features ion-implanted arsenic emitter transistors with 7.0 GHz  $f_T$ , and an all gold metallization system.

- Broadband Power Gain — @  $f = 40\text{--}450$  MHz  
 $G_p = 22$  dB (Typ)
- Broadband Noise Figure — @  $f = 40\text{--}450$  MHz  
 $NF = 4.5$  dB (Typ)
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization
- 7.0 GHz Ion-Implanted Transistors

**MHW5222A**

**22 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, $T_C = +30^\circ\text{C}$ , $75 \Omega$ system unless otherwise noted)

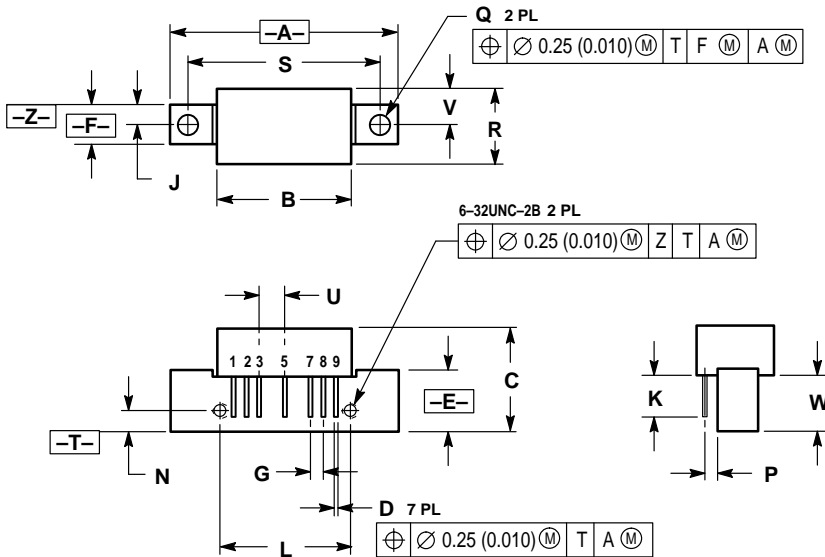
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	450	MHz
Power Gain — 50 MHz	$G_p$	21.4	22	22.6	dB
Power Gain — 450 MHz	$G_p$	22.0	22.9	23.5	dB
Slope	S	0.2	0.5	1.5	dB
Gain Flatness (Peak To Valley)	—	—	0.2	0.4	dB
Return Loss — Input/Output ( $Z_0 = 75$ Ohms)	40-450 MHz IRL/ORL	18	—	—	dB
Second Order Intermodulation Distortion ( $V_{out} = +46$ dBmV, Ch 2, M6, M15) ( $V_{out} = +44$ dBmV, Ch 2, M13, M22)	IMD	— —	-80 -78	— -72	dB
Cross Modulation Distortion ( $V_{out} = +46$ dBmV)	53-Channel FLAT 60-Channel FLAT XMD <sub>53</sub> XMD <sub>60</sub>	—	-60 -60	— -59	dB
Composite Triple Beat ( $V_{out} = +46$ dBmV)	53-Channel FLAT 60-Channel FLAT CTB <sub>53</sub> CTB <sub>60</sub>	—	-63 -61	— -60	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	— — —	125.5 125 124	— — —	dB $\mu$ V
Noise Figure ( $f = 450$ MHz)	NF	—	4.5	5.0	dB
DC Current	$I_{DC}$	—	210	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	+59.5 +59.5 +65.5 +65.5	≤ -60
M8 M9 M14 (Ref.) M15	361.25 367.25 397.25 403.25	+59 +59 +65 +65	≤ -60
M20 M21 (Ref.) M22 M23	433.25 439.25 445.25 451.25	+64 +64 +58 +58	≤ -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
- GROUND
- GROUND
- DELETED
- VDC
- DELETED
- GROUND
- GROUND
- RF OUTPUT

## CASE 714-06 ISSUE K

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