

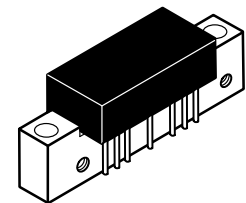
The RF Line 450 MHz CATV Amplifier

... 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 — @ $f = 40-450$ MHz
 $G_p = 22$ dB (Typ)
- Broadband Noise Figure — @ $f = 40-450$ 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 Ω system unless otherwise noted)

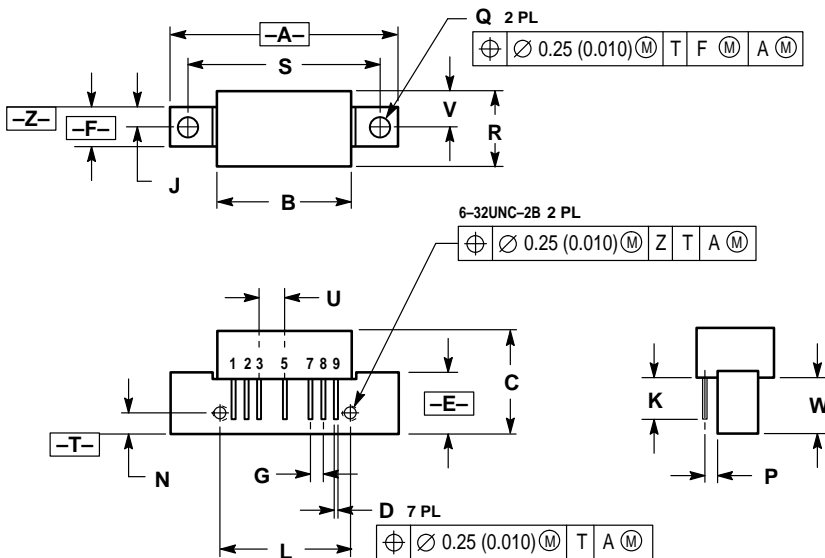
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	450	MHz
Power Gain — 50 MHz	G_p	21.4	22	22.6	dB
Power Gain — 450 MHz	G_p	22.0	22.9	23.5	dB
Slope	S	0.2	0.5	1.5	dB
Gain Flatness (Peak To Valley)	—	—	0.2	0.4	dB
Return Loss — Input/Output ($Z_o = 75$ Ohms)	40-450 MHz IRL/ORL	18	—	—	dB
Second 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 ₅₃ XMD ₆₀	—	-60 -60	— -59	dB
Composite Triple Beat ($V_{out} = +46$ dBmV)	53-Channel FLAT 60-Channel FLAT CTB ₅₃ CTB ₆₀	—	-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 μ 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	253.25	+59.5	≤ -60
Q	259.25	+59.5	
V	289.25	+65.5	
W (Ref.)	295.25	+65.5	
M8	361.25	+59	≤ -60
M9	367.25	+59	
M14 (Ref.)	397.25	+65	
M15	403.25	+65	
M20	433.25	+64	≤ -60
M21 (Ref.)	439.25	+64	
M22	445.25	+58	
M23	451.25	+58	

**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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MHW5222A/D

