

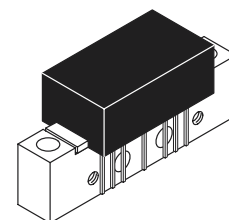
The RF Line 450 MHz CATV Amplifier

MHW5182A

. . . designed specifically for 450 MHz CATV applications. 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 — @ $f = 40\text{--}450$ MHz
 $G_p = 18.2$ dB (Typ) @ 50 MHz
 19.0 dB (Typ) @ 450 MHz
- Broadband Noise Figure
 $NF = 6.5$ dB (Max)
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization
- 7.0 GHz Ion-Implanted Transistors

18 dB GAIN
450 MHz
60-CHANNEL
CATV INPUT/OUTPUT
TRUNK AMPLIFIER



CASE 714Y-03, 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	17.8	18.2	18.8	dB	
Power Gain — 450 MHz	G_p	18.5	19	20	dB	
Slope	S	0.3	—	1.5	dB	
Gain Flatness (Peak To Valley)	—	—	0.2	0.4	dB	
Return Loss — Input/Output ($Z_o = 75$ 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	—	-85 -80	— -72	dB	
Cross Modulation Distortion ($V_{out} = +46$ dBmV per ch.)	53-Channel FLAT 60-Channel FLAT	XMD ₅₃ XMD ₆₀	— —	-62 -61	— -59	dB
Composite Triple Beat ($V_{out} = +46$ dBmV per ch.)	53-Channel FLAT 60-Channel FLAT	CTB ₅₃ CTB ₆₀	— —	-64 -62	— -61	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	— — —	126 126 125	— — —	dB μ V**	
Noise Figure ($f = 450$ MHz)	NF	—	5.5	6.5	dB	
DC Current	I_{DC}	—	210	240	mA	

***DIN (European Applications Only)**

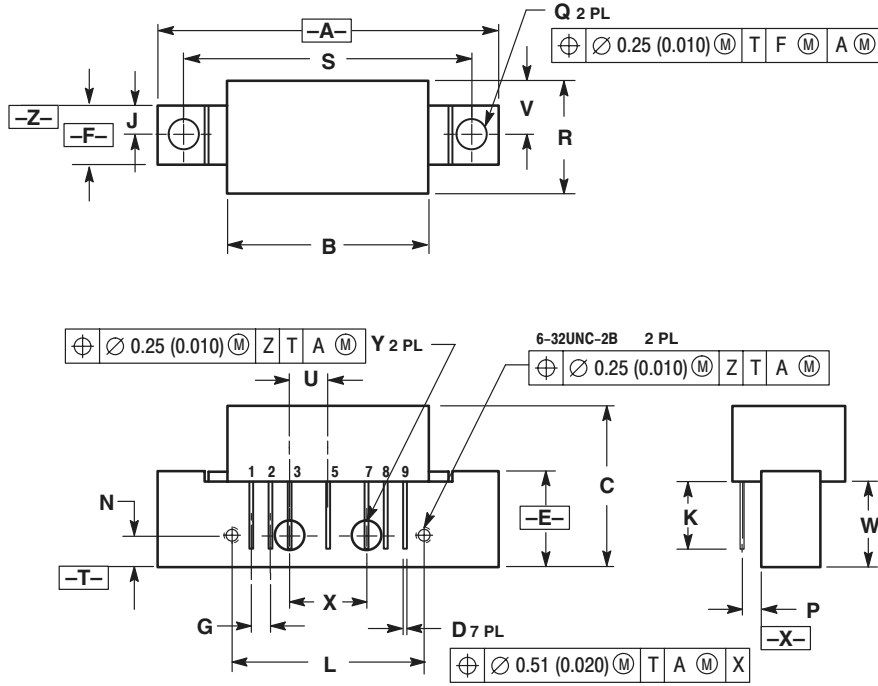
NCTA Channel Designation	Frequency (MHz)	DIN Output Level (dBmV)**(Typ)	DIN Beat Level dB Relative to Ref. Ch.
P	253.25	+60	≤ -60
Q	259.25	+60	
V	289.25	+66	
W (Ref.)	295.25	+66	
M8	361.25	+60	≤ -60
M9	367.25	+60	
M14 (Ref.)	397.25	+66	
M15	403.25	+66	
M20	433.25	+65	≤ -60
M21 (Ref.)	439.25	+65	
M22	445.25	+59	
M23	451.25	+59	

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

ARCHIVE INFORMATION

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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		4.19 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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