The RF Line

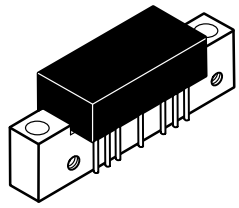
110-Channel (750 MHz), 128-Channel (860 MHz) & 152-Channel (1000 MHz) CATV Amplifiers

MHW7182
MHW8182
MHW9182

18 dB GAIN
750/860/1000 MHz
110/128/152 CHANNEL
CATV AMPLIFIERS

The MHW7182, MHW8182, and MHW9182 are designed specifically for up to 1000 MHz CATV systems as output amplifiers in trunk and line extender applications. These amplifiers feature ion–implanted, arsenic emitter transistors and an all gold metallization system.

- Specified for 110/128/152–Channel Performance
- Broadband Power Gain — @ f = 40–1000 MHz
  G_p = 18.2 dB Min @ 750, 860 & 1000 MHz
- Broadband Noise Figure
  NF = 5.5 dB Typ — MHW7182
  6.0 dB Typ — MHW8182
  6.5 dB Typ — MHW9182
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization



CASE 714–06, STYLE 1

MAXIMUM RATINGS

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

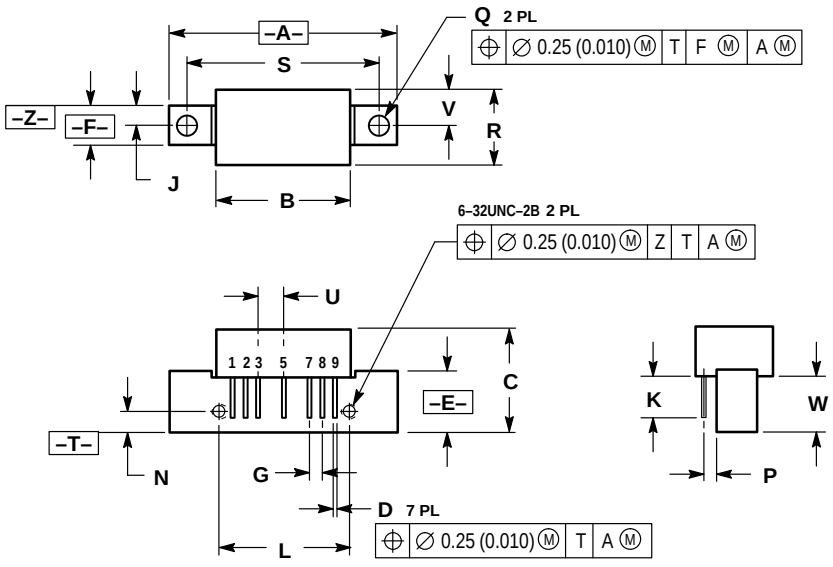
Characteristic			Symbol	Min	Typ	Max	Unit
Frequency Range		MHW7182	BW	40	—	750	MHz
		MHW8182		40	—	860	
		MHW9182		40	—	1000	
Power Gain	50 MHz	All	G_p	17.6	18.2	18.8	dB
	750 MHz	MHW7182		18.2	18.9	20.5	
	860 MHz	MHW8182		18.2	19.0	20.5	
	1000 MHz	MHW9182		18.2	19.2	20.7	
Slope		MHW7182, MHW8182, MHW9182	S	0	1.0	2.5	—
Gain Flatness (Peak To Valley)			G_f	—	0.4	0.6	—
		MHW7182, MHW8182		—	0.4	0.8	
		MHW9182					
Input/Output Return Loss @ f = 40 MHz		MHW7182, MHW8182, MHW9182	IRL/ORL	20	24	—	dB
Derate Return Loss @ f > 40 MHz		MHW7182	RLD	—	—	0.007	dB/MHz
		MHW8182		—	—	0.008	
(Ref = 20 dB @ 40 MHz)		MHW9182		—	—	0.009	
Composite Second Order							dB
(V_{out} = +40 dBmV/ch; 110 Channels)		MHW7182	CSO_{110}	—	–67	–62	
(V_{out} = +38 dBmV/ch; 128 Channels)		MHW8182	CSO_{128}	—	–67	–60	
(V_{out} = +38 dBmV/ch; 152 Channels)		MHW9182	CSO_{152}	—	–67	–59	

(continued)

ELECTRICAL CHARACTERISTICS — continued (V_{CC} = 24 Vdc; T_C = +30°C, 75 ohm system, unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion						dBc
(V_{out} = +40 dBmV/ch, 110–Channel @ Fm = 55.25 MHz)	MHW7182	XMD_{110}	—	–68	–64	
(V_{out} = +38 dBmV/ch, 128–Channel @ Fm = 55.25 MHz)	MHW8182	XMD_{128}	—	–68	–60	
(V_{out} = +38 dBmV/ch, 152–Channel @ Fm = 55.25 MHz)	MHW9182	XMD_{152}	—	–68	–59	
Composite Triple Beat						dBc
(V_{out} = +40 dBmV/ch, 110–Channels, Worst Case)	MHW7182	CTB_{110}	—	–64	–62	
(V_{out} = +38 dBmV/ch, 128–Channels, Worst Case)	MHW8182	CTB_{128}	—	–62	–60	
(V_{out} = +38 dBmV/ch, 152–Channels, Worst Case)	MHW9182	CTB_{152}	—	–61	–59	
Noise Figure f = 50 MHz		NF	—	3.6	5.0	dB
f = 750 MHz	MHW7182		—	5.5	6.5	
f = 860 MHz	MHW8182		—	6.0	7.0	
f = 1000 MHz	MHW9182		—	6.5	8.0	
DC Current		I_{DC}	180	210	240	mA

PACKAGE DIMENSIONS



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS	
DIM	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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