

The RF Line

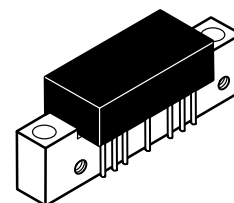
110-Channel (750 MHz), 128-Channel (860 MHz) & 152-Channel (1000 MHz) CATV Amplifiers

MHW7182
MHW8182
MHW9182

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 — @ $f = 40\text{--}1000\text{ MHz}$
 $G_p = 18.2\text{ dB Min @ } 750, 860 \text{ \& } 1000\text{ MHz}$
- 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

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



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 ($V_{CC} = 24\text{ Vdc}$; $T_C = +30^\circ\text{C}$, 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)		MHW7182, MHW8182 MHW9182	G _f	— —	0.4 0.4	0.6 0.8	—
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							
(V _{out} = +40 dBmV/ch; 110 Channels)	MHW7182		CSO ₁₁₀	—	−67	−62	dB
(V _{out} = +38 dBmV/ch; 128 Channels)	MHW8182		CSO ₁₂₈	—	−67	−60	
(V _{out} = +38 dBmV/ch; 152 Channels)	MHW9182		CSO ₁₅₂	—	−67	−59	

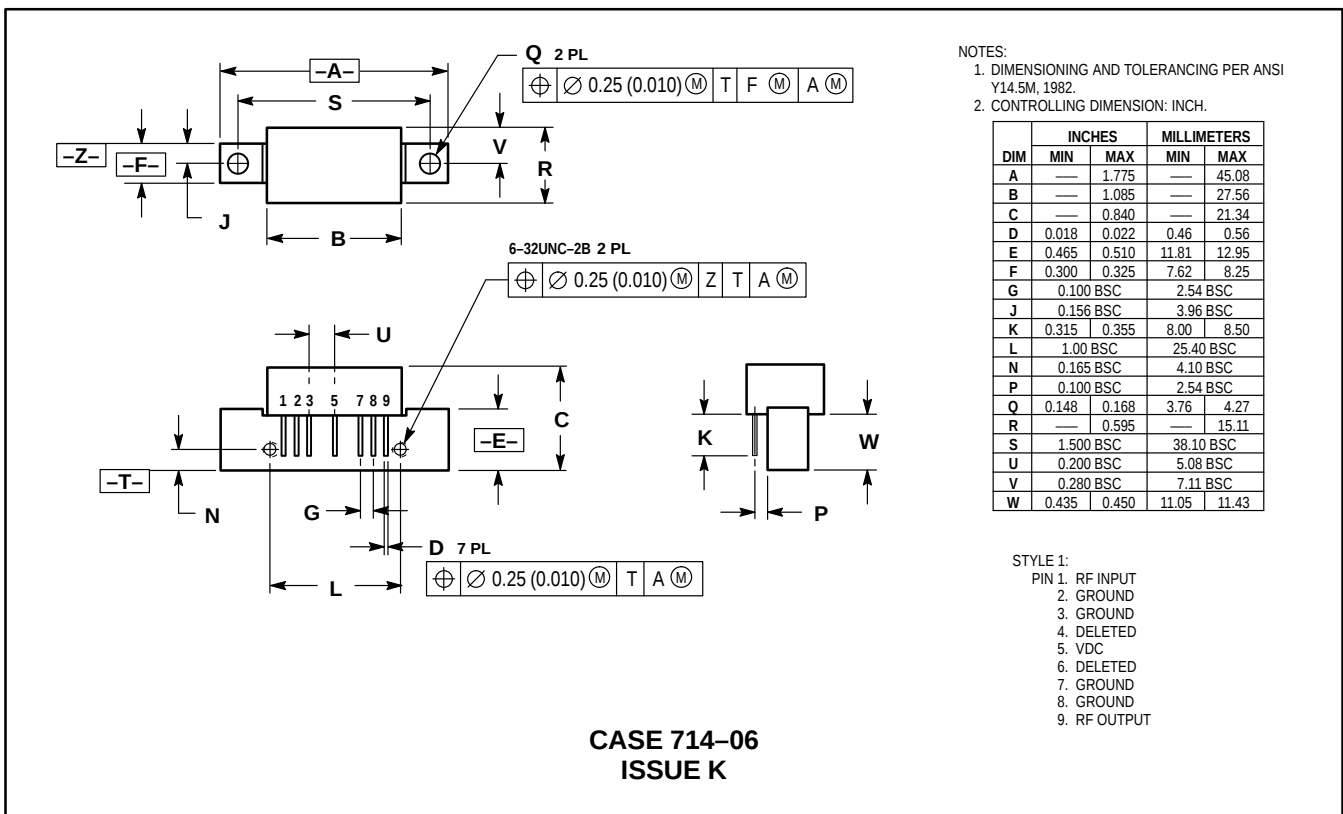
(continued)



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

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

PACKAGE DIMENSIONS



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How to reach us:

USA / EUROPE: Motorola Literature Distribution;
P.O. Box 20912; Phoenix, Arizona 85036. 1-800-441-2447

MFAX: RMFAX0@email.sps.mot.com – TOUCHTONE (602) 244-6609
INTERNET: http://Design-NET.com

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, Toshikatsu Otsuki,
6F Seibu-Butsuryu-Center, 3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 03-3521-8315

HONG KONG: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298



MOTOROLA

MHW7182/D

