

The RF Line

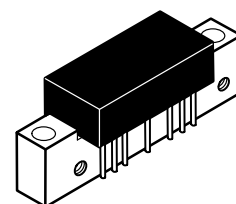
110-Channel (750 MHz) and 128-Channel (860 MHz) CATV Amplifiers

MHW7222
MHW8222

22 dB GAIN
750/860 MHz
110/128 CHANNEL
CATV AMPLIFIERS

The MHW7222 and MHW8222 are designed specifically for up to 860 MHz CATV systems as 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-Channel Performance
- Broadband Power Gain — @ $f = 40\text{--}860\text{ MHz}$
 $G_p = 22\text{ dB Typ @ } 750\text{ and } 860\text{ MHz}$
- Broadband Noise Figure
 $NF = 5.5\text{ dB Typ — MHW7222}$
 $6.4\text{ dB Typ — MHW8222}$
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization



CASE 714-06, STYLE 1

ABSOLUTE 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 Ω system unless otherwise noted)

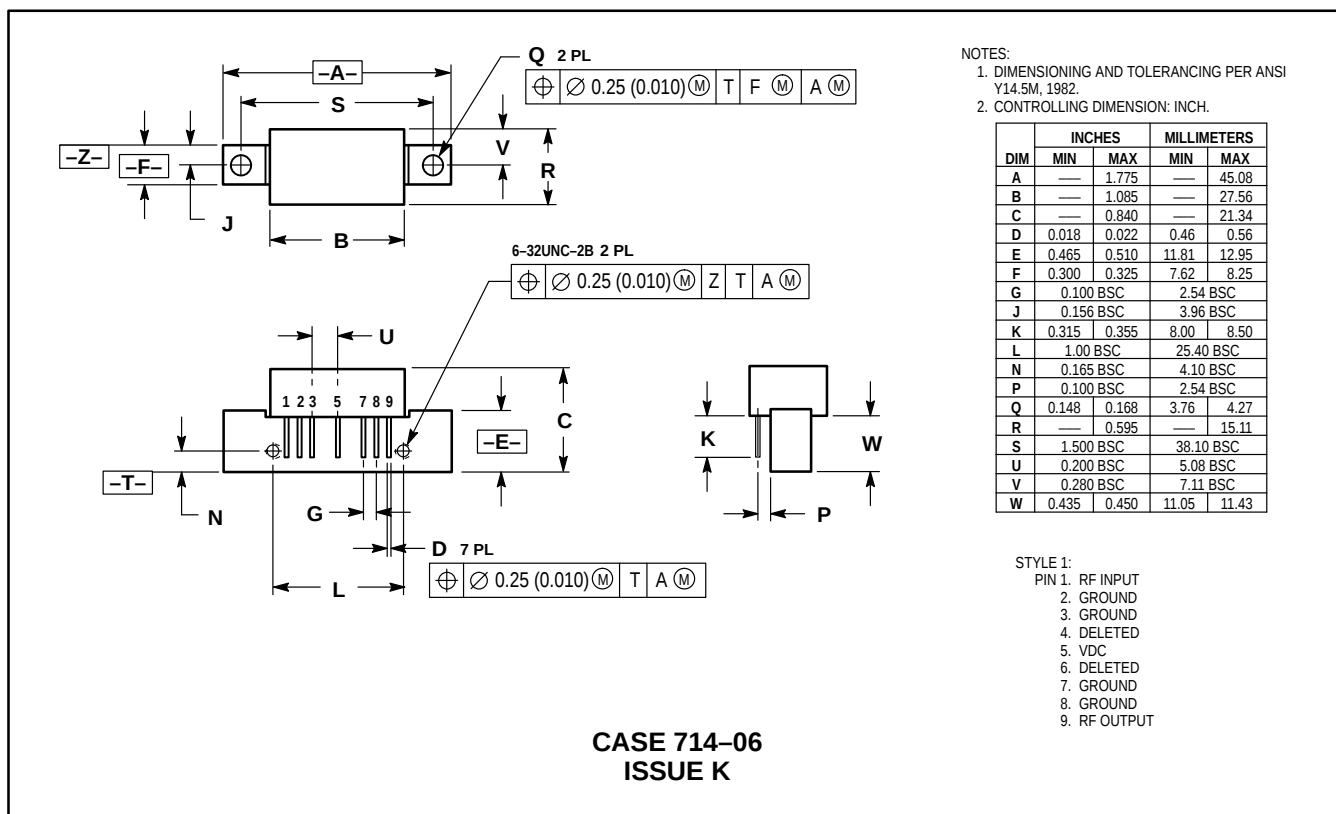
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	750	MHz
		40	—	860	
Power Gain	G_p	20.8	21.5	22.2	dB
$f = 50\text{ MHz}$		22	22.3	24	
$f = 750\text{ MHz}$		21.8	22.3	24	
$f = 860\text{ MHz}$					
Slope ($f = 40\text{--}750\text{ MHz}$)	S	0	1	2	—
Gain Flatness (Peak To Valley) ($f = 40\text{--}750\text{ MHz}$)	G_f	—	0.4	0.6	—
		—	0.4	0.8	
Input/Output Return Loss @ $f = 40\text{ MHz}$	IRL/ORL	20	24	—	dB
Derate Return Loss @ $f > 40\text{ MHz}$	RLD	—	—	0.008	dB/MHz
		—	—	0.009	
Composite Second Order ($V_{out} = +40\text{ dBmV/ch; } 110\text{ Channels}$)	CSO_{110}	—	-63	-55	dB
($V_{out} = +38\text{ dBmV/ch; } 128\text{ Channels}$)	CSO_{128}	—	-63	-56	

(continued)

ELECTRICAL CHARACTERISTICS — continued

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)	MHW7222 MHW8222 XMD ₁₁₀ XMD ₁₂₈	— —	—64 —68	—60 —60	dBc
Composite Triple Beat ($V_{out} = +40$ dBmV/ch, 110-Channels, Worst Case) ($V_{out} = +38$ dBmV/ch, 128-Channels, Worst Case)	MHW7222 MHW8222 CTB ₁₁₀ CTB ₁₂₈	— —	—62 —62	—60 —60	dBc
Noise Figure $f = 50$ MHz $f = 750$ MHz $f = 860$ MHz	All MHW7222 MHW8222 NF	— — —	3.6 5.5 6.4	5 7 7.5	dB
DC Current	I_{DC}	180	220	240	mA

PACKAGE DIMENSIONS



Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters can and do vary in different applications. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and  are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

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

MHW7222/D

