

The RF Line

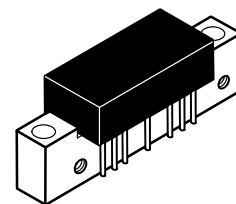
110-Channel (750 MHz) and 128-Channel (860 MHz) CATV Amplifiers

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)

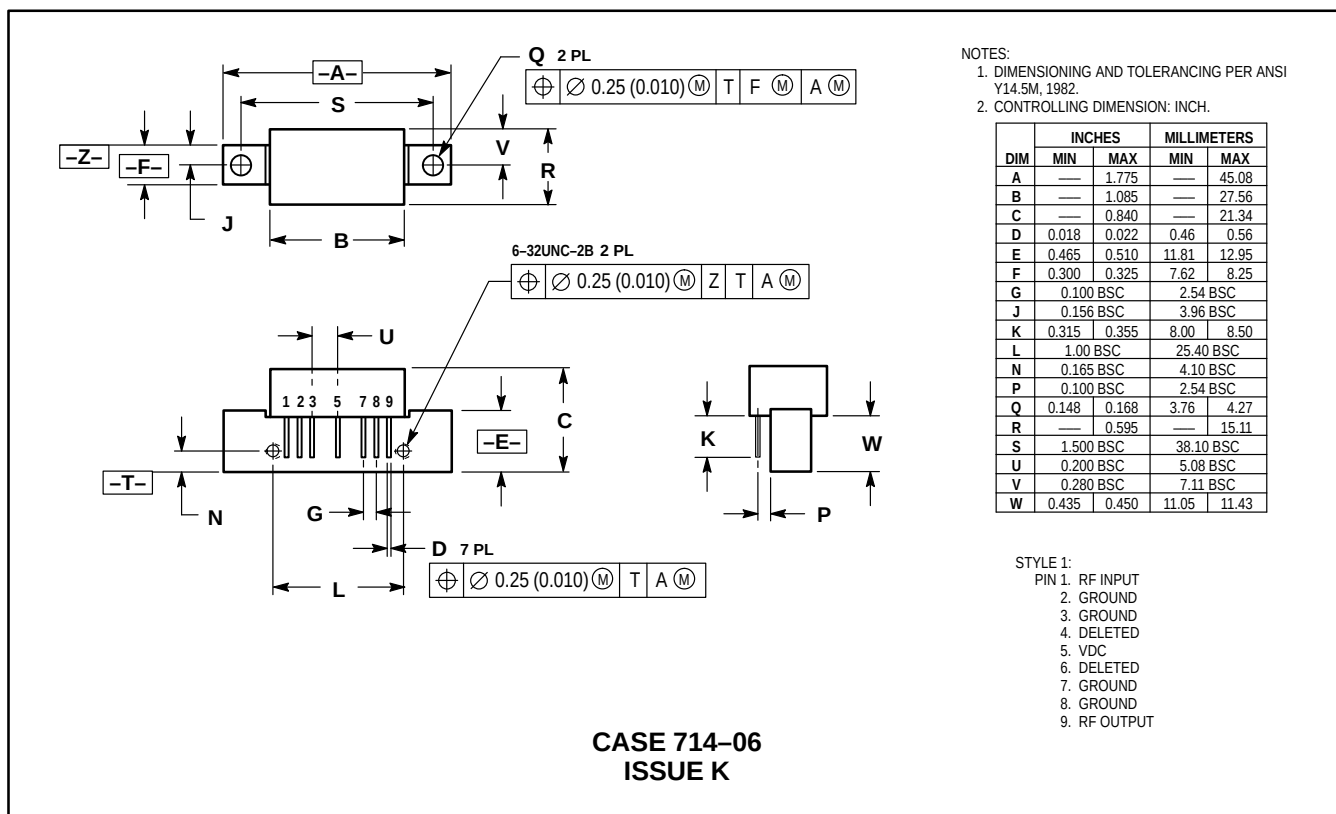
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	750	MHz
		40	—	860	
Power Gain	G_p	20.8	21.5	22.2	dB
$f = 50\text{ MHz}$		22	22.3	24	
$f = 750\text{ MHz}$		21.8	22.3	24	
$f = 860\text{ MHz}$					
Slope ($f = 40\text{--}750\text{ MHz}$)	S	0	1	2	—
Gain Flatness (Peak To Valley)	G_f	—	0.4	0.6	—
($f = 40\text{--}750\text{ MHz}$)		—	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					dB
($V_{out} = +40\text{ dBmV/ch}$; 110 Channels)	CSO_{110}	—	-63	-55	
($V_{out} = +38\text{ dBmV/ch}$; 128 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



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MOTOROLA

MHW7222/D

