

The RF Line

750/860/1000 MHz CATV

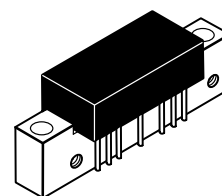
Conventional Hybrid Amplifiers

Designed specifically for 750/860/1000 MHz CATV applications. Features ion-implanted arsenic emitter transistors with an all gold metallization system.

- Supply Voltage = 24 Vdc
- 5th Generation Die Technology
- Specified for 110/128/152 Channel Performance
- Power Gain = 14.5 dB max @ f = 50 MHz
- Superior Gain, Return Loss and DC Current Stability
- All Gold Metallization

MHW7142
MHW8142
MHW9142

24 Vdc
750/860/1000 MHz
110/128/152 – CHANNEL
CATV AMPLIFIERS



CASE 714-06, Style 1

MAXIMUM RATINGS

Parameter	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

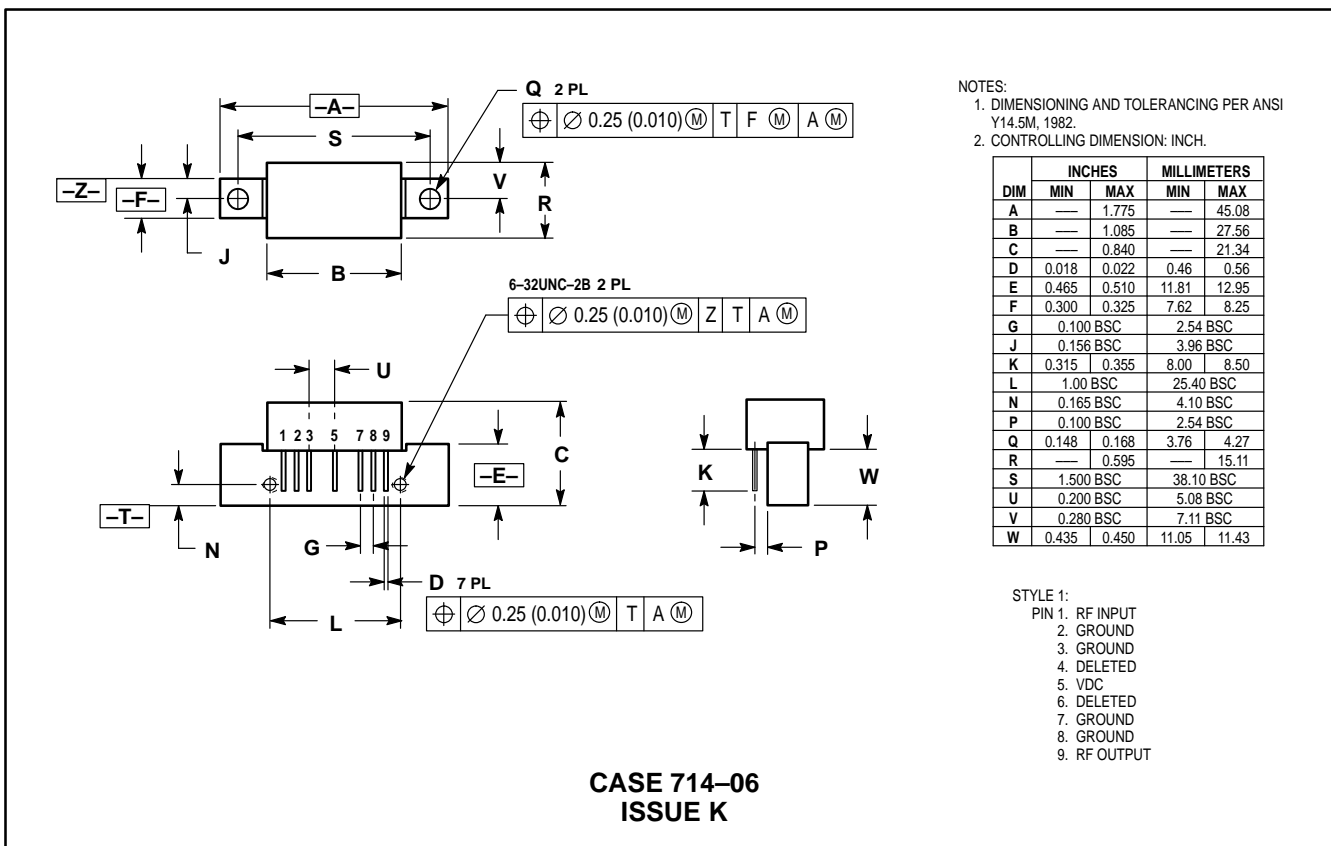
ELECTRICAL CHARACTERISTICS (V_{CC} = 24Vdc, T_C = 25°C, 75 ohm system, unless otherwise noted)


Characteristic	Symbol	Min	Max	Unit
Frequency	MHW7142 MHW8142 MHW9142	40 40 40	750 860 1000	MHz
Power Gain (f = 50 MHz)	All	13.5	14.5	dB
Power Gain (f = 750 MHz)	MHW7142	14.2	15.2	dB
(f = 860 MHz)	MHW8142	14.2	15.5	
(f = 1000 MHz)	MHW9142	14.2	15.7	
Slope (f = 40 – 750 MHz)	MHW7142	0.3	1.5	dB
(f = 40 – 860 MHz)	MHW8142	0.3	1.8	
(f = 40 – 1000 MHz)	MHW9142	0.3	2.0	
Gain Flatness (f = 40 – 750 MHz, Peak to Valley)	MHW7142	—	0.6	dB
(f = 40 – 860 MHz, Peak to Valley)	MHW8142	—	0.6	
(f = 40 – 1000 MHz, Peak to Valley)	MHW9142	—	0.8	
Return Loss (@ f = 40 MHz)	All	20	—	dB
Return Loss Derate (@ f > 40 MHz)	MHW7142	—	.006	dB/MHz
MHW8142	—	.007		
MHW9142	—	.008		
Composite Second Order (V _{out} = +40 dBmV/ch)	MHW7142	—	–60	dBc
(V _{out} = +38 dBmV/ch)	MHW8142	—	–60	
(V _{out} = +38 dBmV/ch)	MHW9142	—	–59	

(continued)

ELECTRICAL CHARACTERISTICS — continued ($V_{CC} = 24V_{dc}$, $T_C = 25^\circ C$, 75 ohm system, unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Cross Modulation ($V_{out} = +40$ dBmV/ch, FM = 55.25 MHz) ($V_{out} = +38$ dBmV/ch, FM = 55.25 MHz) ($V_{out} = +38$ dBmV/ch, FM = 55.25 MHz)	MHW7142 MHW8142 MHW9142 XMD ₁₁₀ XMD ₁₂₈ XMD ₁₅₂	— — —	—66 —66 —63	dBc
Composite Triple Beat ($V_{out} = +40$ dBmV/ch) ($V_{out} = +38$ dBmV/ch) ($V_{out} = +38$ dBmV/ch)	MHW7142 MHW8142 MHW9142 CTB ₁₁₀ CTB ₁₂₈ CTB ₁₅₂	— — —	—62 —61 —59	dBc
Noise Figure (f = 50 MHz)	All NF ₁	—	6.0	dB
Noise Figure (f = 750 MHz) (f = 860 MHz) (f = 1000 MHz)	MHW7142 MHW8142 MHW9142 NF ₂	—	7.5 8.0 8.5	dB
DC Current	All IDC	180	240	mA

PACKAGE DIMENSIONS


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MOTOROLA

MHW7142/D

