The RF Line Low Distortion Wideband Amplifiers

... designed specifically for broadband applications requiring low distortion characteristics. Specified for use as return amplifiers for mid–split and high–split 2–way cable TV systems. Features all gold metallization system.

- Guaranteed Broadband Power Gain @ f = 5.0-200 MHz
- Guaranteed Broadband Noise Figure @ f = 5.0–175 MHz
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization
- All Ion–Implanted Arsenic Emitter Transistor Chips with 6.0 GHz fT's
- Circuit Design Optimized for Good RF Stability Under High VSWR Load Conditions
- Transformers Designed to Insure Good Low Frequency Gain Stability versus Temperature

MHW1134 MHW1184 MHW1224 MHW1244

13.0 dB 18.0 dB 22.0 dB 24.0 dB 5.0-200 MHz CATV HIGH-SPLIT REVERSE AMPLIFIERS



CASE 714-06, STYLE 1

ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V _{in}	+65	dBmV
DC Supply Voltage	VCC	+28	Vdc
Operating Case Temperature Range	т _С	-20 to +100	°C
Storage Temperature Range		-40 to +100	°C

ELECTRICAL CHARACTERISTICS (V_{CC} = 24 Vdc, T_C = +30°C, 75 Ω system)

Characteristic	Symbol	MHW1134	MHW1184	MHW1224	MHW1244	Units
Power Gain @ 10 MHz	GP	13.0 ± 0.5	18.5 ± 0.5	22.0 ± 0.5	24.0 ± 0.5	dB
Frequency Range (Response/Return Loss) Note 1	BW	5.0–200			MHz	
Cable Slope Equivalent (5.0-200 MHz)	S	-0.2 Min/+0.8 Max			dB	
Gain Flatness (5.0–200 MHz)	F	±0.2 Max			dB	
Input/Output Return Loss (5.0–200 MHz) Note 1	IRL/ORL	18.0 Min			dB	
Cross Modulation Distortion @ +50 dBmV per ch. 12–Channel FLAT (5.0–120 MHz) 22–Channel FLAT (5.0–175 MHz) (2) (3) 26–Channel FLAT (5.0–200 MHz)	XM ₁₂ XM ₂₂ XM ₂₆	–70 Тур –65 Мах –65 Тур	–68 Тур –64 Мах –64 Тур	–67 Тур –62 Мах –62 Тур	–66 Тур –61 Мах –61 Тур	dB dB dB

NOTES:

1. Response and return loss characteristics are tested and guaranteed for the full 5.0–200 MHz frequency range.

2. Motorola 100% distortion and noise figure testing is performed over the 5.0 – 175 MHz frequency range. Cross modulation and composite triple beat testing are with 22–channel loading; Video carriers used are:

T7-T13	7.0-43.0 MHz	7–Channels
2-6	55.25-83.25 MHz	5–Channels
A-7	121.25–175.25 MHz	10–Channels

3. Video carriers used for 12–Channel typical performances are T7–6; For 26–Channel typical performance, Channels 8, 9, 10 and 11 are added to the 22–Channel carriers listed above.



ELECTRICAL CHARACTERISTICS — continued (V_{CC} = 24 Vdc, T_C = +30°C, 75 Ω system)

Characteristic	Symbol	MHW1134	MHW1184	MHW1224	MHW1244	Units
Composite Triple Beat Distortion @ +50 dBmV per ch. 22–Channel FLAT (5.0–175 MHz) 26–Channel FLAT (5.0–200 MHz)	СТВ ₂₂ СТВ ₂₆	–73 Мах –71 Тур	–72 Мах –70 Тур	–69 Мах –68.5 Тур	–68 Мах –67.5 Тур	dB dB
Individual Triple Beat Distortion @ +50 dBmV per ch. Mid–Split (5.0–120 MHz) T11, T12 and CH2 @ 123.25 MHz High–Split (5.0–175 MHz) T13, CH2 and CH5 @ 175.5 MHz	тв _з тв _з	—90 Тур —87 Тур	—88 Тур —85 Тур	—88 Тур —85 Тур	—87 Тур —84 Тур	dB dB
Second Order Distortion @ +50 dBmV per ch. High–Split (5.0–175 MHz) CH2, CHA @ 176.5 MHz	IMD	-72 Max	-72 Max	-72 Max	-72 Max	dB
Noise Figure High–Split (5.0–175 MHz) Note 2	NF	7.0 Max	5.5 Max	5.5 Max	5.0 Max	dB
DC Current	IDC	210 Typ/240 Max		mAdc		

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3. Video carriers used for 12–Channel typical performances are T7–6; For 26–Channel typical performance, Channels 8, 9, 10 and 11 are added to the 22–Channel carriers listed above.

PACKAGE DIMENSIONS



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