

The RF Line

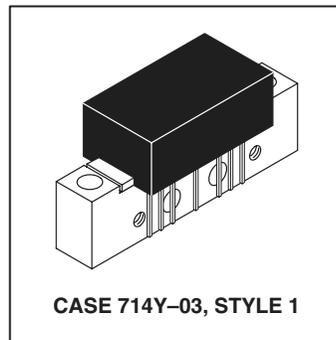
110-Channel (750 MHz) CATV Amplifier

MHW7222A

The MHW7222A is designed specifically for up to 750 MHz CATV systems as amplifiers in trunk and line extender applications. This amplifier features ion-implanted, arsenic emitter transistors, an all gold metallization system and offers improved ruggedness and distortion performance.

22 dB GAIN
750 MHz
110 CHANNEL
CATV AMPLIFIER

- Specified for 110-Channel Performance
- Broadband Power Gain — @ f = 40–750 MHz
 $G_p = 22.3$ dB Typ @ 750 MHz
- Broadband Noise Figure
 NF = 5.5 dB Typ
- All Gold Metallization



ARCHIVE INFORMATION

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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 ($V_{CC} = 24$ 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
Power Gain f = 50 MHz f = 750 MHz	G_p	20.8 22	21.5 22.3	22.2 24	dB
Slope (f = 40–750 MHz)	S	0	1	2	—
Gain Flatness (Peak To Valley) (f = 40–750 MHz)	G_f	—	0.4	0.6	—
Input/Output Return Loss @ f = 40 MHz	IRL/ORL	20	24	—	dB
Derate Return Loss @ f > 40 MHz	RLD	—	—	0.008	dB/MHz
Composite Second Order ($V_{out} = +40$ dBmV/ch; 110 Channels) ($V_{out} = +44$ dBmV/ch; 77 Channels)	CSO_{110} CSO_{77}	— —	-65 -65	-57 —	dB

(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) ($V_{out} = +44$ dBmV/ch, 77-Channel @ $F_m = 55.25$ MHz)	XMD ₁₁₀ XMD ₇₇	—	-64 -60	-60 —	dBc
Composite Triple Beat ($V_{out} = +40$ dBmV/ch, 110-Channels, Worst Case) ($V_{out} = +44$ dBmV/ch, 77-Channels, Worst Case)	CTB ₁₁₀ CTB ₇₇	—	-63 -62	-60 —	dBc
Noise Figure			$f = 50$ MHz $f = 750$ MHz	3.6 5 7	dB
DC Current	I_{DC}	180	220	240	mA

PACKAGE DIMENSIONS

Q 2 PL
 $\text{⌀ } 0.25 (0.010) \text{ (M) T F (M) A (M)}$

6-32UNC-2B 2 PL
 $\text{⌀ } 0.25 (0.010) \text{ (M) Z T A (M)}$

D 7 PL
 $\text{⌀ } 0.51 (0.020) \text{ (M) T A (M) X}$

Y 2 PL
 $\text{⌀ } 0.25 (0.010) \text{ (M) Z T A (M)}$

NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	----	1.775	----	45.08
B	----	1.085	----	27.56
C	----	0.840	----	21.34
D	0.018	0.022	0.46	0.56
E	0.465	0.510	11.81	12.95
F	0.300	0.325	7.62	8.25
G	0.100 BSC		2.54 BSC	
J	0.156 BSC		3.96 BSC	
K	0.315	0.355	8.00	8.50
L	1.00 BSC		25.40 BSC	
N	0.165 BSC		4.19 BSC	
P	0.100 BSC		2.54 BSC	
Q	0.148	0.168	3.76	4.27
R	----	0.600	----	15.24
S	1.500 BSC		38.10 BSC	
U	0.200 BSC		5.08 BSC	
V	----	0.250	----	6.35
W	0.435	0.450	11.05	11.43
X	0.400 BSC		10.16 BSC	
Y	0.152	0.163	3.85	4.15

STYLE 1:
 PIN 1. RF INPUT
 2. GROUND
 3. GROUND
 4. DELETED
 5. VDC
 6. DELETED
 7. GROUND
 8. GROUND
 9. RF OUTPUT

**CASE 714Y-03
 ISSUE D**

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How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution;
 P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

JAPAN: Nippon Motorola Ltd.: SPD, Strategic Planning Office, 4-32-1,
 Nishi-Gotanda, Shinagawa-ku, Tokyo 141, Japan. 81-3-5487-8488

Customer Focus Center: 1-800-521-6274

Mfax™: RMFAX0@email.sps.mot.com – TOUCHTONE 1-602-244-6609
 Motorola Fax Back System – US & Canada ONLY 1-800-774-1848
 – http://sps.motorola.com/mfax/

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

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