

Motorola RF CATV Distribution Amplifiers

Since the very inception of the cable TV distribution industry, Motorola has excelled as a leading supplier of innovative technical products for the CATV market. Continuing our history of leadership in the CATV market, this selector guide premieres 10 new products, with industry leading distortion performance, utilizing the latest sub-micron geometry transistors.

Forward Amplifiers

40–1000 MHz Hybrids, $V_{CC} = 24$ Vdc, Class A

Device	Hybrid Gain (Nom.) @ 50 MHz dB	Channel Loading Capacity	Maximum Distortion Specifications				Noise Figure @ 1000 MHz dB Max	Package/Style
			Output Level dBmV	2nd Order Test dB	Composite Triple Beat	Cross Modulation		
					dB 152 CH	dB 152 CH		
MHW9182B ⁽⁵⁴⁾ ★	18.5	152	+38	-63 ⁽⁴⁰⁾	-61	-61	7.5	714Y/1
MHW9242A ⁽⁵⁵⁾ ★	24	152	+38	-61 ⁽⁴⁰⁾	-58	-59	8.0	714Y/1

40–860 MHz Hybrids

Device	Gain (Typ) @ 50 MHz dB	Frequency MHz	V_{CC} Volts	2nd Order IMD @ $V_{out} = 50$ dBmV/ch Max	DIN45004B @ f=860 MHz dB μ V Min	Noise Figure @ 860 MHz dB Max	Package/Style
CA901 ⁽⁵⁶⁾	17	40 – 860	24	-60	120	8.0	714P/2
CA901A ⁽⁵⁶⁾	17	40 – 860	24	-64	120	8.0	714P/2

Power Doubling Hybrids

CA922 ⁽⁵⁶⁾	17	40 – 860	24	-63	123	9.5	714P/2
CA922A ⁽⁵⁶⁾	17	40 – 860	24	-67	123	9.5	714P/2

⁽⁴⁰⁾Composite 2nd Order; $V_{out} = +38$ dBmV/ch

⁽⁵⁴⁾Refer to Figure 2 for circuit configuration information.

⁽⁵⁵⁾Refer to Figure 3 for circuit configuration information.

⁽⁵⁶⁾Refer to Figure 4 for circuit configuration information.

★New Product

Forward Amplifiers (continued)

40–860 MHz Hybrids, V_{CC} = 24 Vdc, Class A

Device	Hybrid Gain (Nom.) @ 50 MHz dB	Channel Loading Capacity	Maximum Distortion Specifications				Noise Figure @ 860 MHz dB	Pkg/ Style
			Output Level dBmV	2nd Order Test dB	Composite Triple Beat dB	Cross Modulation FM = 55.25 MHz dB		
							128 CH	
MHW8182B ⁽⁵⁴⁾	18.5	128	+38	-64 ⁽⁴⁰⁾	-66	-65	7.5	714Y/1
MHW8222B ^(46b, 54)	21.9	128	+38	-60 ⁽⁴⁰⁾	-64	-63	7.0	1302/1
MHW8242B ^{(55)★}	24	128	+38	-62 ⁽⁴⁰⁾	-64	-60	7.5	714Y/1
MHW8272A ⁽⁵⁵⁾	27.2	128	+38	-64 ⁽⁴⁰⁾	-64	-62	7.0	714Y/1
MHW8292 ⁽⁵⁵⁾	29	128	+38	-56 ⁽⁴⁰⁾	-60	-60	7.0	714Y/1

Power Doubling Hybrids

MHW8185L ^(21, 54)	18.5	128	+40	-62 ⁽³⁹⁾	-63	-64	8.5*	714Y/1
MHW8185LR ^(28, 54)	18.5	128	+40	-62 ⁽³⁹⁾	-63	-64	8.5*	714Y/2
MHW8185 ⁽⁵⁴⁾	18.8	128	+40	-62 ⁽³⁹⁾	-64	-64	8.0	714Y/1
MHW8185R ^(14, 54)	18.8	128	+40	-62 ⁽³⁹⁾	-64	-64	8.0	714Y/2
MHW8205L ^(22, 54)	19.5	128	+40	-60 ⁽³⁹⁾	-63	-64	8.5*	714Y/1
MHW8205 ⁽⁵⁴⁾	19.8	128	+40	-60 ⁽³⁹⁾	-63	-64	8.0	714Y/1
MHW8205R ^(24, 54)	19.8	128	+40	-60 ⁽³⁹⁾	-63	-64	8.0	714Y/2
MHW8205LR ^(29,46b, 54)	19.5	128	+40	-60 ⁽³⁹⁾	-63	-64	8.5*	714Y/2

*@ 870 MHz

40–750 MHz Hybrids, V_{CC} = 24 Vdc, Class A

Device	Hybrid Gain (Nom.) @ 50 MHz dB	Channel Loading Capacity	Maximum Distortion Specifications				Noise Figure @ 750 MHz dB	Pkg/ Style
			Output Level dBmV	2nd Order Test dB	Composite Triple Beat dB	Cross Modulation FM = 55.25 MHz dB		
							110 CH	
MHW7182B ⁽⁵⁴⁾	18.5	110	+40	-63 ⁽³⁹⁾	-66	-64	6.5	714Y/1
MHW7222A ⁽⁵⁴⁾	21.5	110	+40	-57 ⁽³⁹⁾	-60	-60	7.0	714Y/1
MHW7222B ^(46b, 54)	21.9	110	+40	-60 ⁽³⁹⁾	-61	-60	6.5	1302/1
MHW7242B ^{(55)★}	24	110	+40	-62 ⁽³⁹⁾	-63	-58	7.0	714Y/1
MHW7272A ⁽⁵⁵⁾	27.2	110	+40	-64 ⁽³⁹⁾	-64	-60	6.5	714Y/1
MHW7292 ⁽⁵⁵⁾	29	110	+40	-60 ⁽³⁹⁾	-60	-60	6.5	714Y/1

Power Doubling Hybrids

MHW7185CL ^(23, 54)	18.5	110	+44	-64 ⁽³⁶⁾	-61	-63	7.5	714Y/1
MHW7185C ⁽⁵⁴⁾	18.8	110	+44	-64 ⁽³⁶⁾	-62	-63	7.5	714Y/1
MHW7205CL ^(27, 54)	19.5	110	+44	-63 ⁽³⁶⁾	-61	-62	7.5	714Y/1
MHW7205C ⁽⁵⁴⁾	19.8	110	+44	-63 ⁽³⁶⁾	-61	-62	7.5	714Y/1

(14)Mirror Amplifier Version of MHW8185

(21)Low DC Current Version of MHW8185;

Typical I_{CC} @ V_{dc} = 24 V is 365 mA.

(22)Low DC Current Version of MHW8205;

Typical I_{CC} @ V_{dc} = 24 V is 365 mA.

(23)Low I_{CC} Version of MHW7185C;

Typical I_{CC} @ V_{dc} = 24 V is 365 mA.

(24)Mirror Amplifier Version of MHW8205

(27)Low I_{CC} Version of MHW7205C;

Typical I_{CC} @ V_{dc} = 24 V is 365 mA.

(28)Mirror Amplifier Version of MHW8185L

(29)Mirror Amplifier Version of MHW8205L

(39)Composite 2nd order; V_{out} = +40 dBmV/ch

(40)Composite 2nd Order; V_{out} = +38 dBmV/ch

(46)To be introduced: a) 1Q00; b) 2Q00; c) 3Q00

(54)Refer to Figure 2 for circuit configuration information.

(55)Refer to Figure 3 for circuit configuration information.

★New Product

Forward Amplifiers (continued)

40–550 MHz Hybrids, $V_{CC} = 24$ Vdc, Class A

Device	Hybrid Gain (Nom.) @ 50 MHz dB	Channel Loading Capacity	Maximum Distortion Specifications				Noise Figure @ 550 MHz dB Max	Pkg/ Style	
			Output Level dBmV	2nd Order Test dB	Composite Triple Beat				Cross Modulation
					dB				dB
				77 CH	77 CH				
MHW6182T ^(46b,57)	18.2	77	+44	-72 ⁽³⁵⁾	-58	-57	7.0	1302/1	
MHW6222T ^(46b,57)	22	77	+44	-66 ⁽³⁵⁾	-57	-57	6.0	1302/1	
MHW6272T ^(46b,58)	27	77	+44	-64 ⁽³⁵⁾	-57	-57	6.5	1302/1	
MHW6342T ⁽⁵⁸⁾	34.5	77	+44	-64 ⁽³⁵⁾	-57	-57	6.5	1302/1	

Power Doubling Hybrids

MHW6185T ^(46b,57)	18.5	77	+44	-65 ⁽³⁶⁾	-65	-68	7.5	1302/1
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Reverse Amplifiers

5–200 MHz Hybrids, $V_{CC} = 24$ Vdc, Class A

Device	Hybrid Gain (Nom.) dB	Channel Loading Capacity	Maximum Distortion Specifications						Noise Figure @ 175 MHz dB Max	Pkg/ Style
			Output Level dBmV	2nd Order Test ⁽³⁰⁾ dB	Composite Triple Beat		Cross Modulation			
					dB		dB			
				22 CH	26 CH	22 CH	26 CH			
MHW1224 ⁽⁵⁷⁾	22	22	+50	-72	-69	-68.5 ⁽¹⁹⁾	-62	-62 ⁽¹⁹⁾	5.5	714Y/1
MHW1244 ⁽⁵⁷⁾	24	22	+50	-72	-68	-67.5 ⁽¹⁹⁾	-61	-61 ⁽¹⁹⁾	5.0	714Y/1

Low Current Amplifiers — 5–65 MHz Hybrids, $V_{CC} = 24$ Vdc, Class A

Device	Hybrid Gain (Nom.) dB	Channel Loading Capacity	Maximum Distortion Specifications						Noise Figure @ 65 MHz dB Max	Pkg/ Style	
			Output Level dBmV	2nd Order Test		Composite Triple Beat		Cross Modulation			
				dB		dB		dB			
				6 CH	10 CH	6 CH	10 CH	6 CH	10 CH		
MHW1224LA ^(34,46b)	22.5	6,10	50	-68	-65	-75	-66	-65	-60	7.0	1302/1
MHW1254LA ^(34,46b)	25.5	6,10	50	-68	-66	-75	-66	-65	-61	6.5	1302/1
MHW1304LA ^(34,46b)	30.5	6,10	50	-68	-65	-74	-64	-64	-58	5.7	1302/1
MHW1354LA ^(34,46b)	35	6,10	50	-68	-65	-73	-62	-63	-57	5.2	1302/1

⁽¹⁹⁾Typical

⁽³⁴⁾Specifications are preliminary.

⁽³⁵⁾Channels 2 and M30 @ M39

⁽³⁶⁾Composite 2nd order; $V_{out} = +44$ dBmV/ch

⁽⁴⁶⁾To be introduced: a) 1Q00; b) 2Q00; c) 3Q00

⁽⁵⁷⁾Refer to Figure 1 for circuit configuration information.

⁽⁵⁸⁾Refer to Figure 5 for circuit configuration information.

★New Product

Reverse Amplifiers (continued)

Low Current Amplifiers — 5–50 MHz Hybrids, $V_{CC} = 24$ Vdc, Class A

Device	Hybrid Gain (Nom.) dB	Channel Loading Capacity	I _{DC} mA Max	Maximum Distortion Specifications				Noise Figure @ 50 MHz dB Max	Package/ Style
				Output Level dBmV	2nd Order Test ⁽³⁰⁾ dB	Composite Triple Beat	Cross Modulation		
						dB	dB	4 CH	
MHW1254L ⁽⁵⁷⁾	25	4	135	+50	-70	-70	-62	4.5	714Y/1
MHW1304L ⁽⁵⁷⁾	30	4	135	+50	-70	-66	-57	4.5	714Y/1

⁽³⁰⁾Channels 2 and A @ 7

⁽⁵⁷⁾Refer to Figure 1 for circuit configuration information.

Philips to Motorola Cross Reference – Linear Modules

POWER DOUBLERS

Philips Part Number	Motorola Closest Replacement
BGD502	MHW6185T
BGD702	MHW7185C
BGD704	MHW7205C
BGD802	MHW8185
BGD802MI	MHW8185R
BGD804	MHW8205
BGD804MI	MHW8205R
NONE	MHW7185CL
NONE	MHW7205CL
BGD902L	MHW8185L
NONE	MHW8185LR
BGD904L	MHW8205L
NONE	MHW8205LR

FORWARD AMPLIFIERS

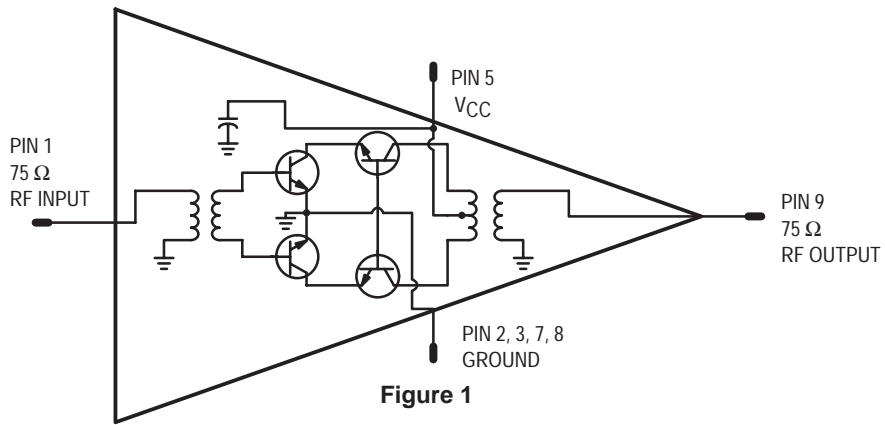
Philips Part Number	Motorola Closest Replacement
BGY584A	MHW6182T
BGY585A	MHW6182T
BGY586	MHW6222T
BGY587	MHW6222T
BGY587B	MHW6272T
BGY588	MHW6342T
BGY785A	MHW7182B
BGY787	MHW7222B
NONE	MHW7242B
NONE	MHW7272A
NONE	MHW7292
BGY885A	MHW8182B
BGY885B	MHW8222B
NONE	MHW8242B
NONE	MHW8272A
BGY887B	MHW8292
BGY1085A	MHW9182B
NONE	MHW9242A

REVERSE AMPLIFIERS

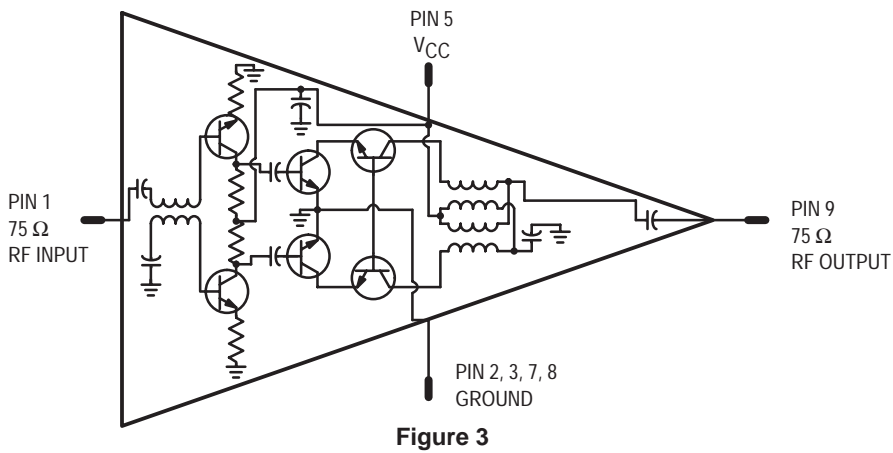
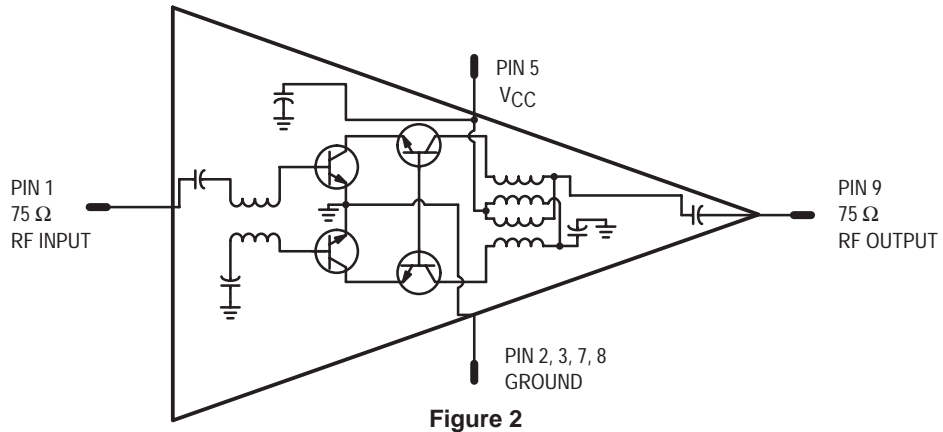
Philips Part Number	Motorola Closest Replacement
BGY67/04	MHW1224
BGY67A/04	MHW1244

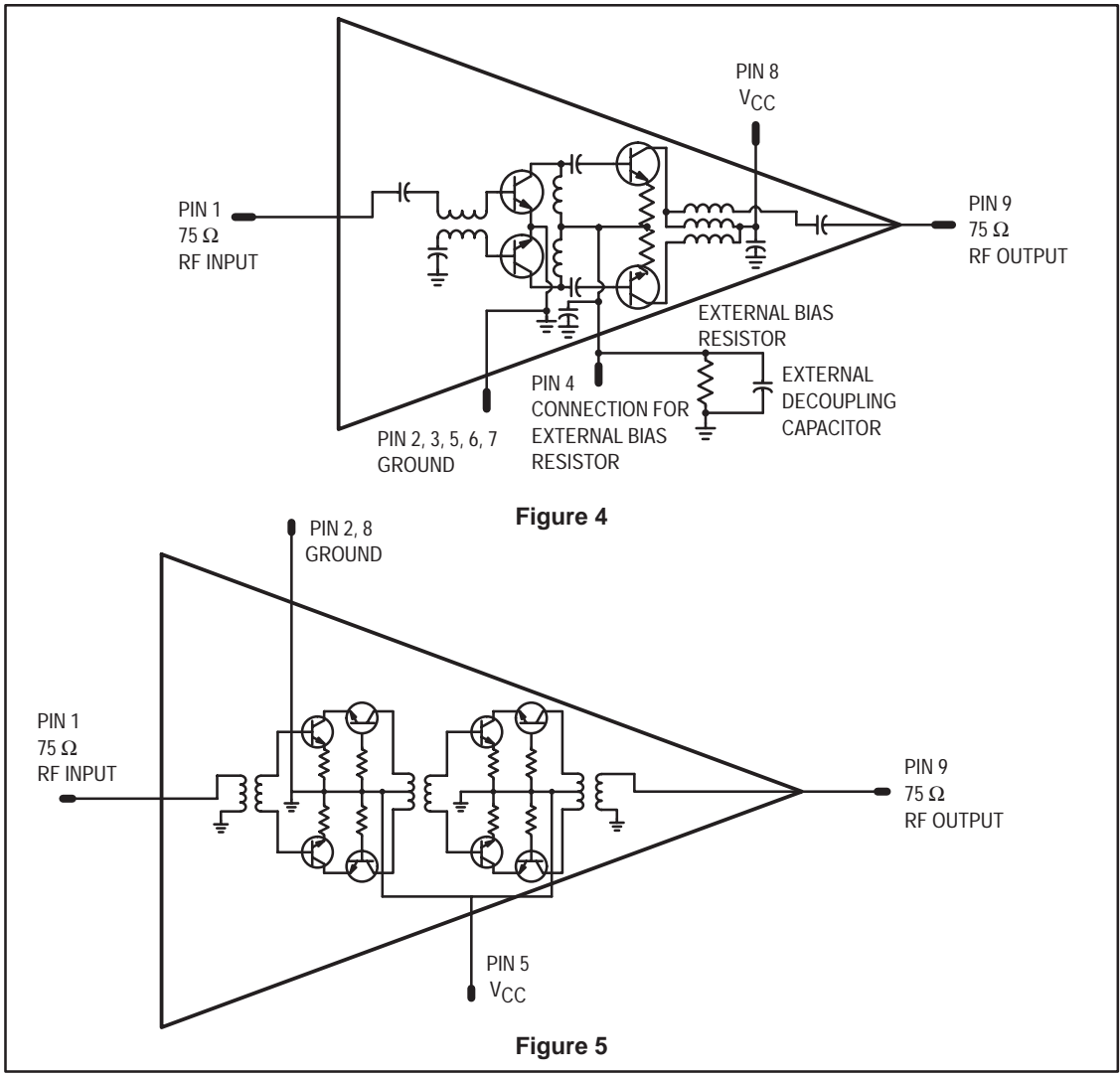
CATV AMPLIFIERS – OTHER

Philips Part Number	Motorola Closest Replacement
BGD885	CA922/A
BGX881	CA901/A
BGE885	CA901/A
BGX885N	CA901/A
BGE887	CA901/A

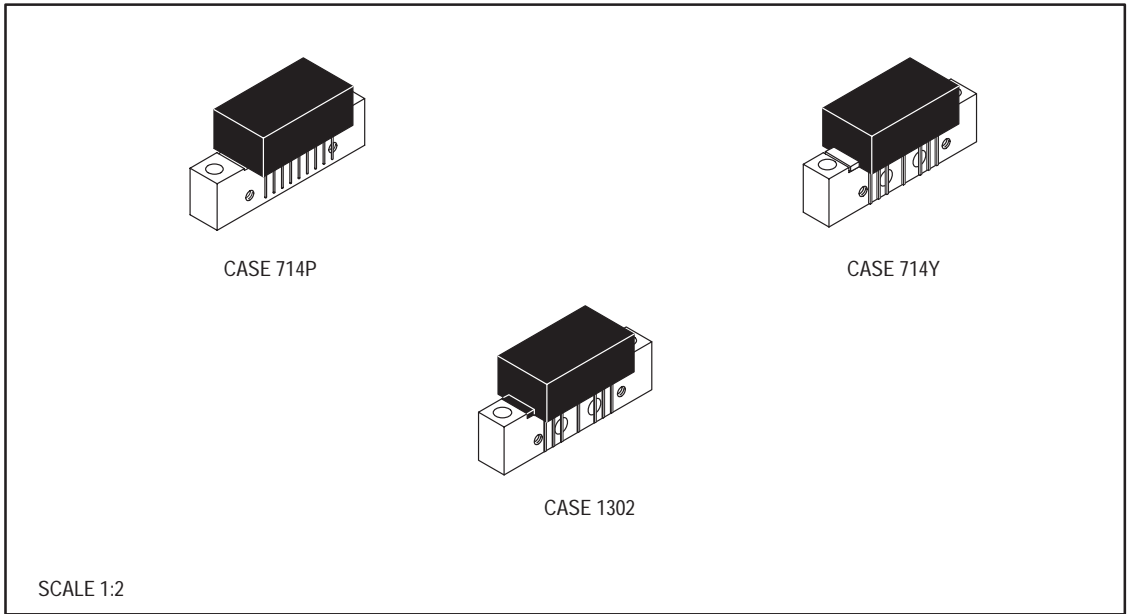


Note: Power doubler uses 2 transistors per slot.





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