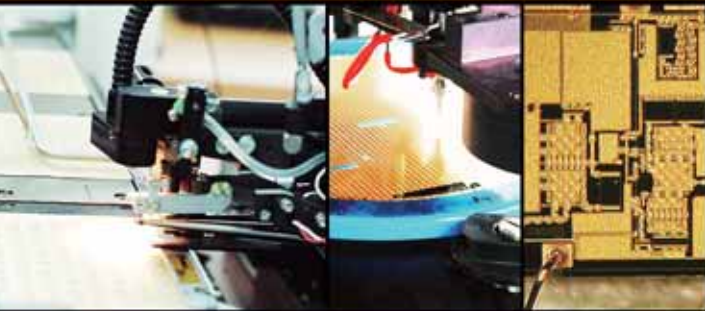


2007 AUTUMN



# CATV · DIGITAL TV BROADBAND AMPLIFIER

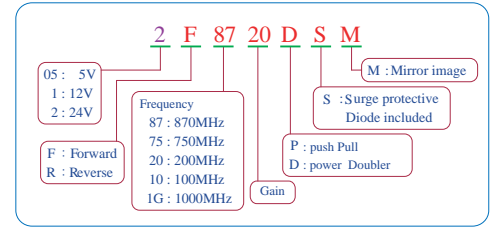
**RFHIC**  
[www.rfhic.com](http://www.rfhic.com)

# CATV & DTV Broadband Amplifier

## » Cable TV Line Amplifier

### Product Features

- GaAs MMIC
- Very Low Distortion
- Guaranteed Broadband Power Gain
- Excellent Thermal Conductivity
- Single Supply Voltage @ 24V or 12V
- Heatsink 99.9% Copper, Ag or Gold Plate
- Internal TVS
- No External Circuits Needed



### Applications

- CATV Trunk Amplifier
- Optical Drive Amplifier

## 24V Power Doubler (870MHz)

Part Number	Frequency (MHz)	Power Gain (dB)	Return Loss (min)(dB)	CH@Vo (Flat)(dBmV)	Distortion (typical)			Noise Figure (dB)(typ)	Current (mA)(typ)
					CTB	CSO	XMD		
2F7522D	45 ~ 750	22	-17	110@48	-61	-64	-62	5	400
2F8718DS	45 ~ 870	18	-18	135@44	-65	-70	-66	7	400
2F8719DS	45 ~ 870	19	-18	135@44	-65	-70	-66	6	400
2F8720DS	45 ~ 870	20	-18	135@48	-60	-63	-60	5.5	400
2F8720DSM	45 ~ 870	20	-18	135@48	-60	-63	-60	5.5	400
2F8722D	45 ~ 870	22	-16	135@48	-58	-60	-60	5	400
2F8722DS	45 ~ 870	22	-18	135@48	-61	-65	-60	5	400
2F8722DSM	45 ~ 870	22	-18	135@48	-61	-65	-60	5	400
2F8725D	45 ~ 870	25	-16	135@48	-62	-64	-62	3.5	400
2F8727D	45 ~ 870	27	-16	135@48	-62	-64	-62	3.6	400
2F8729D	45 ~ 870	29	-16	135@48	-58	-57	-60	3.5	400

## 24V Push-Pull (870MHz)

Part Number	Frequency (MHz)	Power Gain (dB)	Return Loss (min)(dB)	CH@Vo (Flat)(dBmV)	Distortion (typical)			Noise Figure (dB)(typ)	Current (mA)(typ)
					CTB	CSO	XMD		
2F7523P	45 ~ 750	23	-17	110@40	-68	-66	-61	4.7	220
2F8718P	45 ~ 870	18	-16	135@40	-60	-62	-55	5.5	220
2F8720P	45 ~ 870	20	-16	135@40	-66	-66	-59	5.5	220
2F8723P	45 ~ 870	23	-16	135@40	-65	-66	-60	4.7	220
2F8725P	45 ~ 870	25	-16	135@40	-63	-62	-61	3.5	300
2F8727P	45 ~ 870	27	-16	135@40	-63	-62	-61	3.6	300
2F8734P	45 ~ 870	34	-16	135@45	-60	-56	-60	3.3	400

## 24V Power Doubler (1000MHz)

Part Number	Frequency (MHz)	Power Gain (dB)	Return Loss (min)(dB)	CH@Vo (Flat)(dBmV)	Distortion (typical)			Noise Figure (dB)(typ)	Current (mA)(typ)
					CTB	CSO	XMD		
2F1G20DS	45 ~ 1000	20	-16	79@52	-65	-63	-68	5.5	400
2F1G22DS	45 ~ 1000	22	-16	79@52	-68	-70	-68	5	400
2F1G24D	45 ~ 1000	24	-16	79@52	-70	-66	-68	4.5	400

◀ Test Condition : 79 Channel, NTSC frequency raster : 55.25MHz to 547.25MHz, +45dBmV to +52dBmV tilted.

### 24V Push Pull (1000MHz)

Part Number	Frequency (MHz)	Power Gain (dB)	Return Loss (min)(dB)	CH@Vo (Flat)(dBmV)	Distortion (typical)			Noise Figure (dB)(typ)	Current (mA)(typ)
					CTB	CSO	XMD		
2F1G18P	45 ~ 1000	18	-15	135@40	-59	-60	-57	5.5	220
2F1G20P	45 ~ 1000	20	-16	135@40	-60	-64	-63	5.5	220
2F1G23P	45 ~ 1000	23	-16	135@40	-65	-67	-66	4.7	220
2F1G27P	45 ~ 1000	27	-16	135@40	-66	-70	-66	4.5	310

### 12V Power Doubler

Part Number	Frequency (MHz)	Power Gain (dB)	Return Loss (min)(dB)	CH@Vo (Flat)(dBmV)	Distortion (typical)			Noise Figure (dB)(typ)	Current (mA)(typ)
					CTB	CSO	XMD		
1F8719D	50 ~ 870	19	-16	135@44	-63	-63	-63	6	560

### 12V Push-Pull

Part Number	Frequency (MHz)	Power Gain (dB)	Return Loss (min)(dB)	CH@Vo (Flat)(dBmV)	Distortion (typical)			Noise Figure (dB)(typ)	Current (mA)(typ)
					CTB	CSO	XMD		
1F8734P	50 ~ 870	34	-16	135@44	-58	-58	-60	4.5	580
1F7534P	50 ~ 750	34	-16	110@44	-60	-62	-62	4.5	580
	50 ~ 750	34	-16	79@46	-61	-62	-61	4.5	580
1F8719P	50 ~ 870	19	-16	135@40	-65	-65	-62	5.5	360

## » GaN Cable TV Line Amplifier

#### Product Features

- GaN HEMT
- High Breakdown Voltage
- High Power, P1dB 4W
- Low Noise Figure

#### Applications

- CATV Trunk Amplifier
- Optical Drive Amplifier

### 24V Power Doubler (1000MHz)

Part Number	Frequency (MHz)	Power Gain (dB)	Return Loss (min)(dB)	CH@Vo (Flat)(dBmV)	Distortion (typical)			Noise Figure (dB)(typ)	Current (mA)(typ)
					CTB	CSO	XMD		
 3F1G20DG	50 ~ 1000	20	-16	79 @52/10dB Tilt	-62	-60	-60	3	500

### 24V Push Pull (1000MHz)

Part Number	Frequency (MHz)	Power Gain (dB)	Return Loss (min)(dB)	CH@Vo (Flat)(dBmV)	Distortion (typical)			Noise Figure (dB)(typ)	Current (mA)(typ)
					CTB	CSO	XMD		
 3F1G20PG	50 ~ 1000	20	-16	79 @44/10dB Tilt	-62	-62	-62	3	220

 : Under Development

# CATV & DTV Broadband Amplifier

## » MMIC (75Ω)

### Product Features

- GaAs MMIC
- High IP3
- Lower Noise Figure

### Application

- CATV Amplifier
- Satellite Transceiver Application
- Repeater
- Base Station



Part Number	Frequency (MHz)	Power Gain (dB)	Return Loss (dB)	CH@Vo (dBmV)	Distortion (typical)			Noise Figure (dB)(typ)	Current (mA)(typ)	Package
					CTB	CSO	XMD			
AP112	3 ~ 2500	18	-12	135@30	-67	-53	-65	3.5	110	SOT-89
AP230	3 ~ 1000	15	-11	135@37	-60	-63	-55	4	220	SOIC-8
AP2301	30 ~ 2000	15	-10	135@37	-60	-63	-55	4.5	220	SP-12
AP211	30 ~ 870	12	-6.5	135@40	-70	-63	-53	2.5	205	SOIC-8
AP201	30 ~ 870	12	-8	135@30	-72	-50	-80	2.5	120	SOT-89
AP222	30 ~ 870	12	-11	135@40	-52	-55	-52	4.5	220	SOIC-8
AE308	50 ~ 1000	22	-15	135@16	-64	-58	-67	2	55	SOT-89

: Under Development

## » Wideband Amplifier



Part Number	Frequency (MHz)	Gain (dB)	N.F (Typ.)(dB)	P1dB (Typ.)(dBm)	OIP3 (Typ.)(dBm)	Vd (V)	Id (Typ.)(mA)	Package
RFC041	400 ~ 800	19	7.5	30	47	12	550	DP-27
RFC042	400 ~ 800	23	4	30	50	24	400	
RFC091	800 ~ 1000	20	7	29	45	12	550	
RFC092	800 ~ 1000	23	5	30	50	24	400	
1F5500	5 ~ 500	19	6.5	31	49	12	500	
RFC1G19-12	5 ~ 1000	19	7	30	46	12	500	
RFC1G22-24	20 ~ 1000	22	3.5	30	50	24	400	
RFC1G30-24	20 ~ 1000	30	3.3	30	46	24	400	
RFC1G18H4-12	20 ~ 1000	19	3	33	43	12	700	
RFC1G18H4-24	20 ~ 1000	19	3	36	46	24	700	
RFC3020H4-12	100 ~ 300	20	4	35	46	12	700	

◀ Test Condition : 800MHz, 20 dBm each tone : GaN Power Transistor

## » High Power Wideband Amplifier



Part Number	Frequency (MHz)	Gain (dB)	Return Loss (dB)	P3dB (dBm)	OIP3 (dBm)	Voltage (V)	Current (A)	Package
RFW2500H10-28	20 ~ 2500	13	-	36	41	28	0.9	DP-75
RFW7735H20-28	450 ~ 770	33	-15 / -15	43	48	28	1.9	
RFW1G35H20-28	20 ~ 1000	33	-10 / -5	41	47	28	1.8	
RFW5035H40-28	20 ~ 500	35	-8 / -2	45	51	28	3.1	
RFW8835H40-28	450 ~ 880	33	-13 / -8	45	51	28	3.1	
RFW1G33H40-28	20 ~ 1000	32	-6 / -2	44	48	28	3.1	

» **PASSIVE FILTER**

**Product Features**

- SOT-89 Type Packages
- Passive Integration on Silicon
- Small Size
- High Power Handling
- Low Cost

**Application**

- Digital TV
  - Sub-Systems
- CATV Set Top Box
- CATV Trunk Amp.



Part Number	Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Handling Power (W)	Rejection (dB)	Impedance (Ω)	Package
BWF870	270 ~ 470	0.9	13	2	-35	75	BGA Type (3 in 1)
	470	1.9	12	2	-20	75	
	470	1	10	2	-20	75	
LPF708	870	0.5	11	5	-40	75	SOT-89
LPF722	2200	0.5	12	5	-25	75	SOT-89

: Under Development

» **CATV LOW NOISE AMPLIFIER**

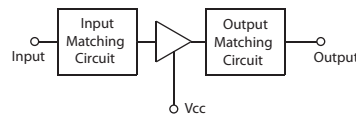
**Product Features**

- GaAs p-HEMT Chip On Board
- No Matching Circuit Needed
- High IP3
- Good Gain Flatness
- Hybrid Amplifier
- Small Size
- SMD Type

**Application**

- Distribution / Drop Amplifiers
- Digital TV
- Digital Set Top Box
- TV Antenna

**Functional Diagram**



Part Number	Frequency (MHz)	Power Gain (dB)	Return Loss (dB)	CH@Vo (dBmV)	Distortion (typical)			Noise Figure (dB)(typ)	Current (mA)(typ)	Package
					CTB	CSO	XMD			
CAL8716	50 ~ 870	18	-8/3.5	110@25	-65	-60	-80	1.5	155	CP-16
CAL1G20	50 ~ 1000	20	-12	110@15	-60	-54	-68	1.8	40	CP-16

» **BAND SWITCH FILTER (75Ω)**

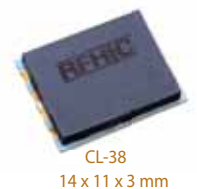
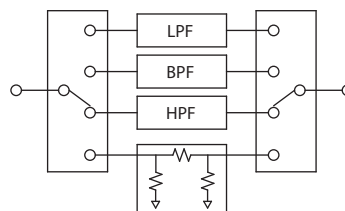
**Product Features**

- MCM Sub-Module
- High Dynamic Range
- Digital Control
- Low Insertion Loss
- Low Current
- Chip On Board
- Low Cost

**Applications**

- Tuner
- Digital TV
- DVD
- Trunk Amp.
- Camcorder
- Broadband System Set Top Box

**Functional Diagram**



Part Number	Frequency (MHz)	Output Freq. (MHz)	Insertion Loss (dB)	OIP3 (dBm)	RF Input Power (W)	Digital On/Off (V)	Current (mA)	Package (mm)
SF8700	45~870	45~270	-1 ~ -30	65	10	3~5 / 0	0	CL-38