

# The RF Line

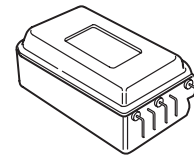
## 550 MHz CATV Feedforward Amplifier

Designed for broadband applications requiring low-distortion amplification. Specifically intended for CATV market requirements. Two hybrid amplifiers along with couplers and delay lines are packaged together to provide extremely low distortion products at conventional CATV amplifier output levels.

- Specifically Designed to Provide Improved Performance in 550 MHz CATV Applications
- Distortion Components Reduced more than 20 dB from Conventional CATV Hybrid Amplifiers
- Specified for 77-Channel Performance
- Fully Shielded Metal Package

**MFF224B**

**24 dB  
40–550 MHz  
77-CHANNEL  
CATV  
FEEDFORWARD  
AMPLIFIER**



**CASE 825A-03, STYLE 2**

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	$V_{in}$	+55	dBmV
DC Supply Voltage	$V_{CC}$	28	Vdc
Operating Case Temperature Range	$T_C$	-20 to +100	°C
Storage Temperature Range	$T_{stg}$	-40 to +100	°C

### ELECTRICAL CHARACTERISTICS ( $V_{CC} = 24$ V, $T_C = 50^\circ\text{C}$ , 75 $\Omega$ system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	550	MHz
Power Gain — 50 MHz	$G_p$	23.4	24	24.6	dB
Slope	S	+0.2	—	+1.8	dB
Gain Flatness	—	—	—	$\pm 0.25$	dB
Return Loss — Input (f = 40–550 MHz)	IRL	18	—	—	dB
Return Loss — Output (f = 40–550 MHz)	ORL	18	—	—	dB
Second Order Intermodulation Distortion ( $V_{out} = +50$ dBmV per ch., ch. A, H2, H22)	IMD	—	—	-80	dB
Cross Modulation Distortion ( $V_{out} = 44$ dBmV per ch., ch. 2, 77-channels) ( $V_{out} = 44$ dBmV per ch., ch. 2, —, H39)	$XMD_{77}$	—	-80	—	dB
Composite Triple Beat ( $V_{out} = 44$ dBmV per ch., ch. 2, 77-channels) ( $V_{out} = 44$ dBmV per ch., ch. 2, —, H39)	CTB	—	-85	—	dB
Noise Figure (f = 50 MHz) (f = 550 MHz)	NF	—	—	9 11	dB
DC Current	$I_{DC}$	—	660	725	mA



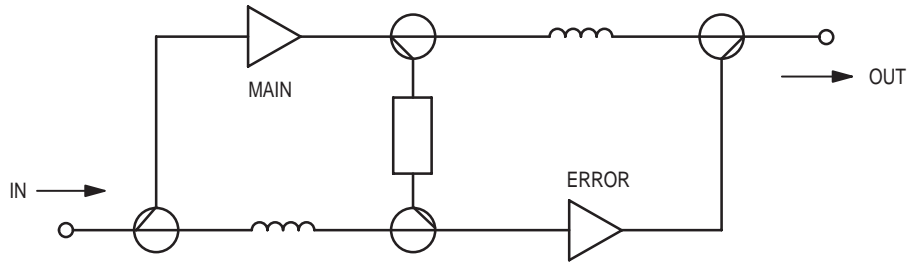
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LAST SHIP 06/04/00  
LAST ORDER 06/10/99

**PERFORMANCE DERATE versus TEMPERATURE (TYP)**

Symbol	Characteristics	Test Conditions	-20 +80°C	-20 +100°C
G	Gain	50 MHz	±0.5 dB	±0.6 dB

**CIRCUITRY BLOCK DIAGRAM**



**PERFORMANCE MEASUREMENT**

Motorola test fixture: P/N FF124BTF is necessary for accurate measurement.

**PACKAGE DIMENSIONS**

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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	2.107	2.165	53.52	55.00
B	1.225	1.265	31.12	32.13
C	0.805	0.845	20.45	21.46
D	0.018	0.022	0.46	0.56
G	0.190	0.210	4.83	5.33
H	0.490	0.510	12.45	12.95
K	0.100	0.120	2.54	3.05
L	0.910	0.930	23.12	23.62
N	2.053	2.083	52.15	52.90
S	0.310	0.330	7.87	8.38
U	1.785	1.815	45.34	46.10
W	0.690	0.710	17.53	18.03
X	0.090	0.110	2.29	2.79
Y	0.290	0.310	7.37	7.87
Z	0.230	0.270	5.84	6.86

**STYLE 2:**  
 PIN 1. 24 V  
 2. GROUND  
 3. INPUT  
 4. GROUND  
 5. N/C  
 6. N/C  
 7. GROUND  
 8. OUTPUT  
 9. GROUND  
 10. 24 V

**CASE 825A-03  
 ISSUE C**

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