

# The RF Line

## 450 MHz CATV

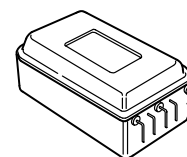
### Feedforward Amplifier

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 450 MHz CATV Applications
- Distortion Components Reduced more than 20 dB from Conventional CATV Hybrid Amplifiers
- Specified for 60-Channel Performance
- Fully Shielded Metal Package

**MFF124B**

**24 dB**  
**40–450 MHz**  
**60-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)

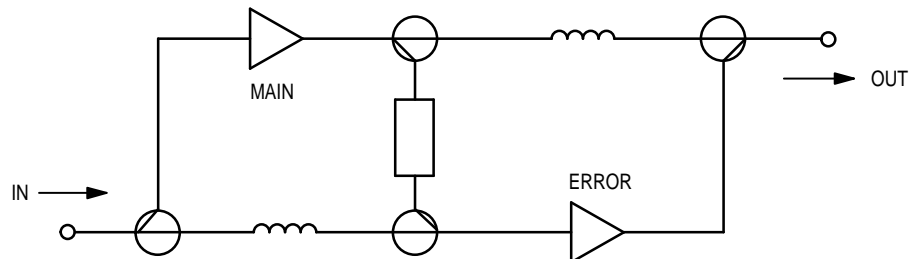
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	550	MHz
Power Gain — 50 MHz	$G_P$	23.4	24	24.6	dB
Slope	S	+0.2	—	+1.4	dB
Gain Flatness	—	—	—	$\pm 0.2$	dB
Return Loss — Input ( $f = 40$ – $450$ MHz)	IRL	18	—	—	dB
Return Loss — Output ( $f = 40$ – $450$ MHz)	ORL	18	—	—	dB
Second Order Intermodulation Distortion ( $V_{out} = +50$ dBmV per ch., ch. A, H2, H22)	IMD	—	—	–80	dB
Cross Modulation Distortion ( $V_{out} = 46$ dBmV per ch., ch. 2, 60-channels) ( $V_{out} = 46$ dBmV per ch., ch. 2, —, H22)	$XMD_{60}$	— —	–80 —	— –75	dB
Composite Triple Beat ( $V_{out} = 46$ dBmV per ch., ch. 2, 60-channels) ( $V_{out} = 46$ dBmV per ch., ch. 2, —, H22)	CTB	— —	–85 —	— –79	dB
Noise Figure ( $f = 50$ MHz) ( $f = 450$ MHz)	NF	— —	— —	9 10	dB
DC Current	$I_{DC}$	—	660	725	mA



# 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

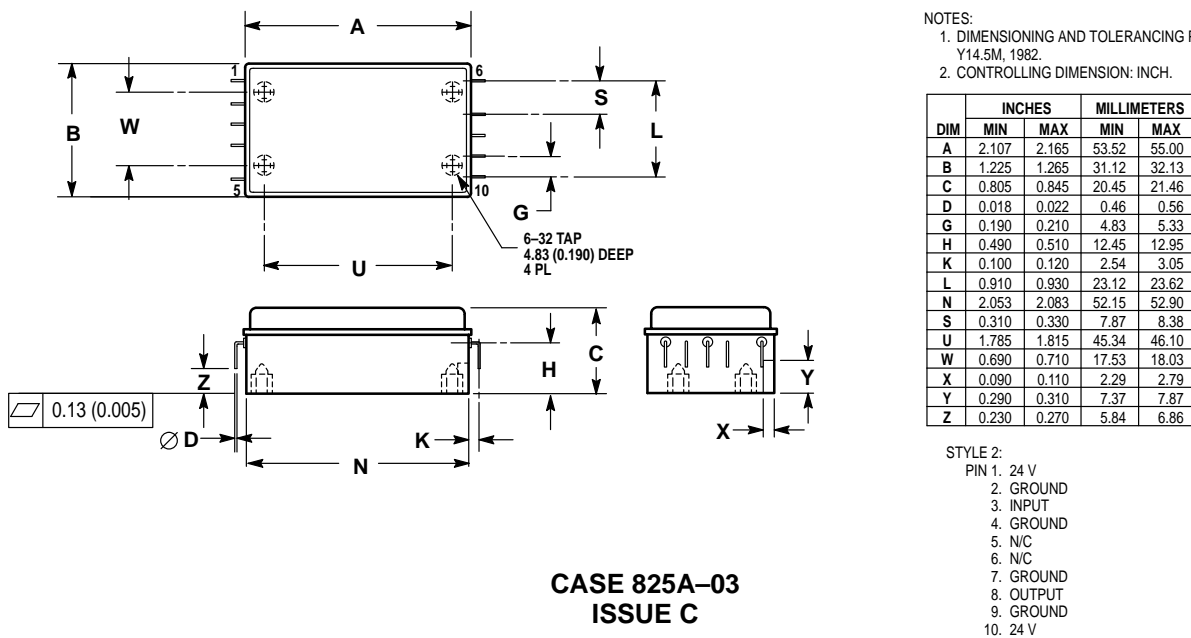
## CIRCUITRY BLOCK DIAGRAM



## PERFORMANCE MEASUREMENT

Motorola test fixture: P/N MFF124BTF is necessary for accurate measurement.

## PACKAGE DIMENSIONS



## CASE 825A-03 ISSUE C

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters can and do vary in different applications. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

### How to reach us:

USA/EUROPE: Motorola Literature Distribution;  
P.O. Box 20912; Phoenix, Arizona 85036. 1-800-441-2447

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, Toshikatsu Otsuki,  
6F Seibu-Butsuryu-Center, 3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 03-3521-8315

MFAX: RMFAX0@email.sps.mot.com - TOUCHTONE (602) 244-6609  
INTERNET: <http://Design-NET.com>

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



MFF124B/D

