

**MOTOROLA**  
**SEMICONDUCTOR**  
**TECHNICAL DATA**

**The RF Line**  
**Wideband Linear Amplifiers**

... designed for amplifier applications in 50 to 100 ohm systems requiring wide bandwidth, low noise and low distortion. This hybrid provides excellent gain stability with temperature and linear amplification as a result of the push-pull circuit design.

- Specified Characteristics at  $V_{CC} = 24\text{ V}$ ,  $T_C = 25^\circ\text{C}$ 
  - Frequency Range — 40 to 450 MHz
  - Output Power — 800 mW Min @ 1 dB Compression,  $f = 200\text{ MHz}$
  - Power Gain — 38.5 dB Typ @  $f = 50\text{ MHz}$
  - Noise Figure — 6 dB Typ @  $f = 450\text{ MHz}$
  - ITO — 40 dBm Typ @  $f = 450\text{ MHz}$
- All Gold Metallization for Improved Reliability

**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
DC Supply Voltage	$V_{CC}$	28	Vdc
RF Power Input	$P_{in}$	-5	dBm
Operating Case Temperature Range	$T_C$	-20 to +90	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40 to +100	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS** ( $T_C = 25^\circ\text{C}$ ,  $V_{CC} = 24\text{ V}$ , 50 ohm system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	450	MHz
Gain Flatness ( $f = 40\text{--}450\text{ MHz}$ ) ( $f = 10\text{--}550\text{ MHz}$ )	—	—	—	$\pm 0.5$ $\pm 3$	dB
Power Gain ( $f = 50\text{ MHz}$ )	$P_G$	38	38.5	39	dB
Noise Figure, Broadband ( $f = 450\text{ MHz}$ )	NF	—	6	—	dB
Power Output — 1 dB Compression ( $f = 200\text{ MHz}$ )	$P_{o1\text{ dB}}$	800	—	—	mW
Third Order Intercept (See Figure 1, $f_1 = 450\text{ MHz}$ )	ITO	—	40	—	dBm
Input/Output VSWR ( $f = 40\text{--}450\text{ MHz}$ )	VSWR	—	2:1	—	—
Second Harmonic Distortion (Tone at 10 mW, $f_{2H} = 10\text{--}300\text{ MHz}$ )	$d_{so}$	—	-66	—	dB
Reverse Isolation ( $f = 40\text{--}450\text{ MHz}$ )	—	—	40	—	dB
Supply Current	$I_{CC}$	—	—	325	mA

**CA2890**  
**CA2890B**  
**CA2890H**

38.5 dB  
 40-450 MHz  
 800 mWATT  
**WIDEBAND**  
**LINEAR AMPLIFIERS**

CA (POS. SUPPLY)  
 CASE 714F-01, STYLE 1  
 CA2890

CA (POS. BENT PIN OPTION)  
 CASE 714J-01, STYLE 1  
 CA2890B

SIP  
 CASE 826-01, STYLE 1  
 CA2890H

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