

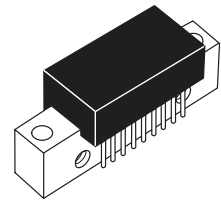
## The RF Line VHF/UHF CATV Amplifiers

Designed for broadband applications requiring low-distortion amplification. Specifically intended for CATV/MATV market requirements. These amplifiers feature ion-implanted arsenic emitter transistors and an all gold metal system.

- Specified Characteristics at  $V_{CC} = 24\text{ V}$ ,  $T_C = 25^\circ\text{C}$ :
  - Frequency Range — 40 to 860 MHz
  - Power Gain — 17 dB Typ @  $f = 40\text{ MHz}$
  - Noise Figure — 6.5 dB Typ @  $f = 500\text{ MHz}$
  - 120 dB $\mu\text{V}$  DIN45004B @ 860 MHz
- All Gold Metallization for Improved Reliability
- Superior Gain, Return Loss and DC Current Stability with Temperature

**CA901**

17 dB  
 40–860 MHz  
 VHF/UHF  
 CATV/MATV  
 AMPLIFIERS



CASE 714P-03, STYLE 2

### MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	$V_{in}$	+14	dBm
Supply Voltage	$V_{CC}$	26	Vdc
Operating Case Temperature Range	$T_C$	-20 to +100	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40 to +100	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ , $V_{CC} = 24\text{ V}$ , 75 $\Omega$ system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	860	MHz
Power Gain ( $f = 40\text{ MHz}$ )	$P_G$	16.5	17	17.5	dB
Slope (40–860 MHz)	S	0.2	0.8	1.5	dB
Gain Flatness	—	—	—	0.6	dB
Input/Output Return Loss $f = 40\text{--}100\text{ MHz}$ $f = 100\text{--}800\text{ MHz}$ $f = 800\text{--}860\text{ MHz}$	IRL/ORL	20 15 10/15	— 17 12/18	— — —	dB
Second Order Intermodulation Distortion ( $V_{out} = +50\text{ dBmV}$ per ch.)	$IMD_2$	—	—	-60	dB
DIN45004B (See Figure 1) $f = 40\text{--}400\text{ MHz}$ $f = 400\text{--}860\text{ MHz}$	DIN	121 120	— —	— —	dB $\mu\text{V}$
Noise Figure $f = 500\text{ MHz}$ $f = 860\text{ MHz}$	NF	— —	6.5 7.0	7.5 8.0	dB
Supply Current	$I_{DC}$	—	235	255	mA



Freescale Semiconductor, Inc. ARCHIVE INFORMATION

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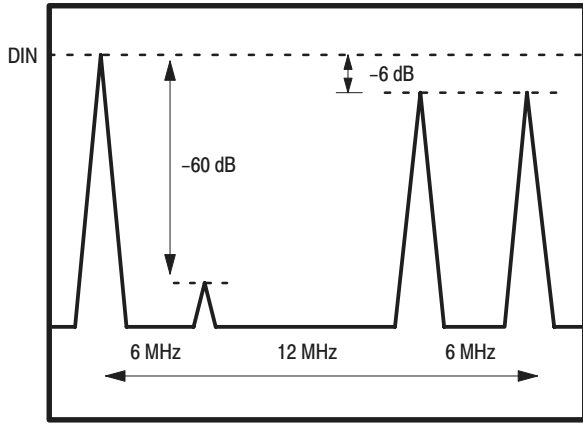


Figure 1. DIN45004B Test

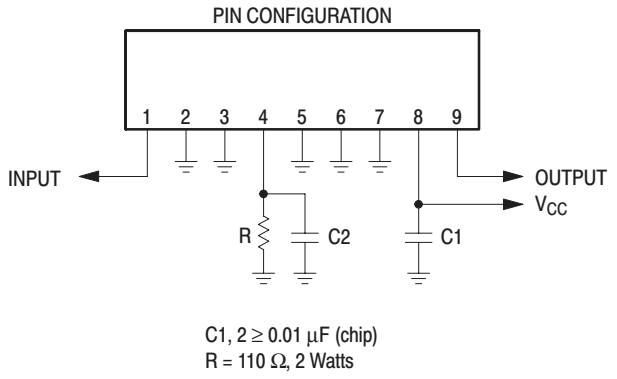


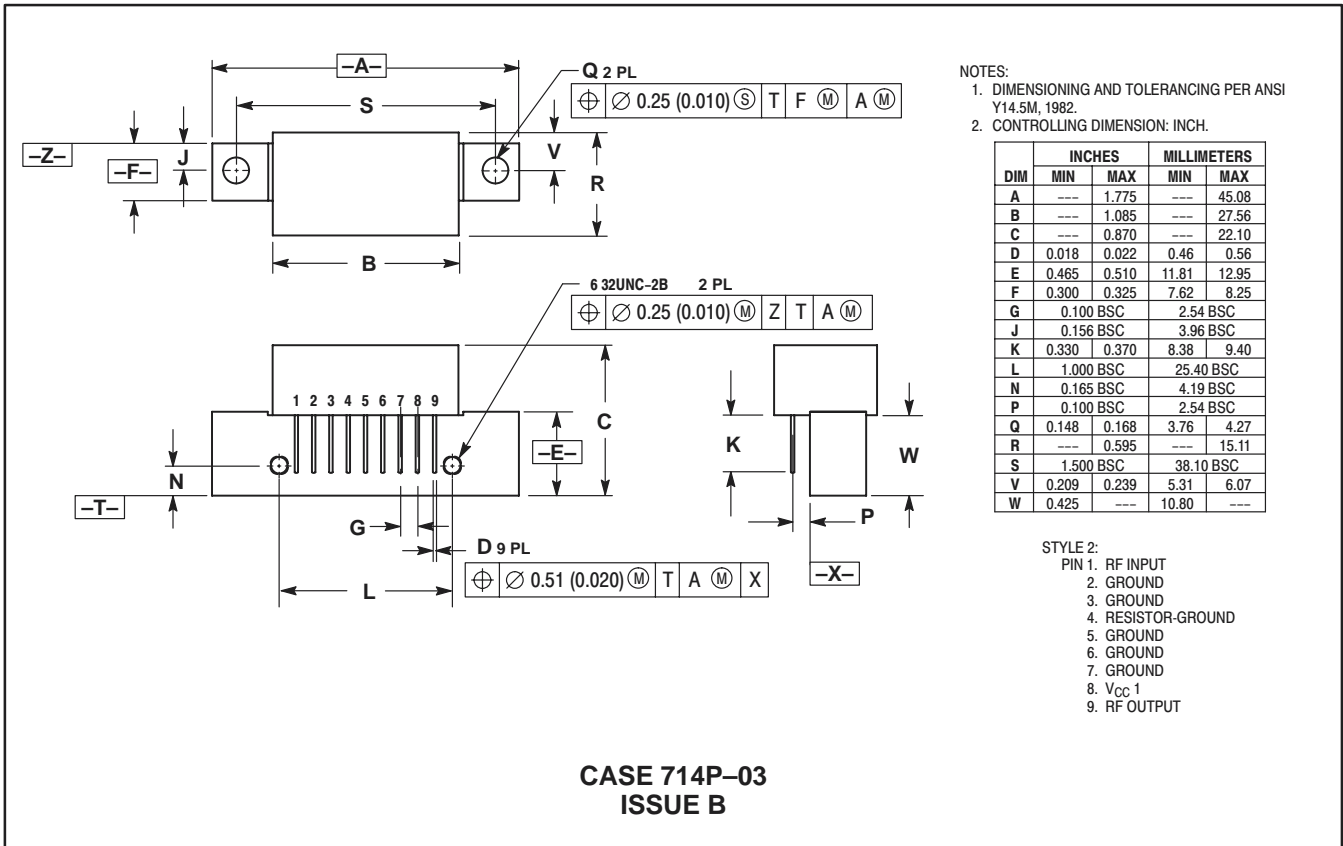
Figure 2. External Connections

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# Freescale Semiconductor, Inc.

## PACKAGE DIMENSIONS




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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	---	1.775	---	45.08
B	---	1.085	---	27.56
C	---	0.870	---	22.10
D	0.018	0.022	0.46	0.56
E	0.465	0.510	11.81	12.95
F	0.300	0.325	7.62	8.25
G	0.100 BSC		2.54 BSC	
J	0.156 BSC		3.96 BSC	
K	0.330	0.370	8.38	9.40
L	1.000 BSC		25.40 BSC	
N	0.165 BSC		4.19 BSC	
P	0.100 BSC		2.54 BSC	
Q	0.148	0.168	3.76	4.27
R	---	0.595	---	15.11
S	1.500 BSC		38.10 BSC	
V	0.209	0.239	5.31	6.07
W	0.425	---	10.80	---

- STYLE 2:  
 PIN 1. RF INPUT  
 2. GROUND  
 3. GROUND  
 4. RESISTOR-GROUND  
 5. GROUND  
 6. GROUND  
 7. GROUND  
 8. V<sub>CC</sub> 1  
 9. RF OUTPUT

CASE 714P-03  
 ISSUE B

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**USA/EUROPE/Locations Not Listed:** Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

**JAPAN:** Motorola Japan Ltd.; SPS, Technical Information Center, 3-20-1, Minami-Azabu. Minato-ku, Tokyo 106-8573 Japan. 81-3-3440-3569

**ASIA/PACIFIC:** Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre, 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong. 852-2668334

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