

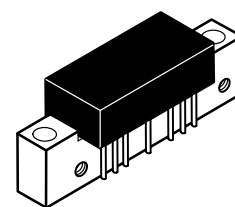
# The RF Line

## 110-Channel (750 MHz) CATV Line Extender Amplifier

- Specified for 110-Channel Performance
- Broadband Power Gain — @  $f = 40\text{--}750\text{ MHz}$   
 $G_p = 24\text{ dB (Typ)}$
- Broadband Noise Figure  
 $NF = 7\text{ dB (Max) @ } 750\text{ MHz}$
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization
- 7 GHz  $f_T$  Ion-Implanted Transistors

**MHW7242**

**24 dB GAIN  
750 MHz  
110-CHANNEL  
CATV AMPLIFIER**



**CASE 714-06, STYLE 1**

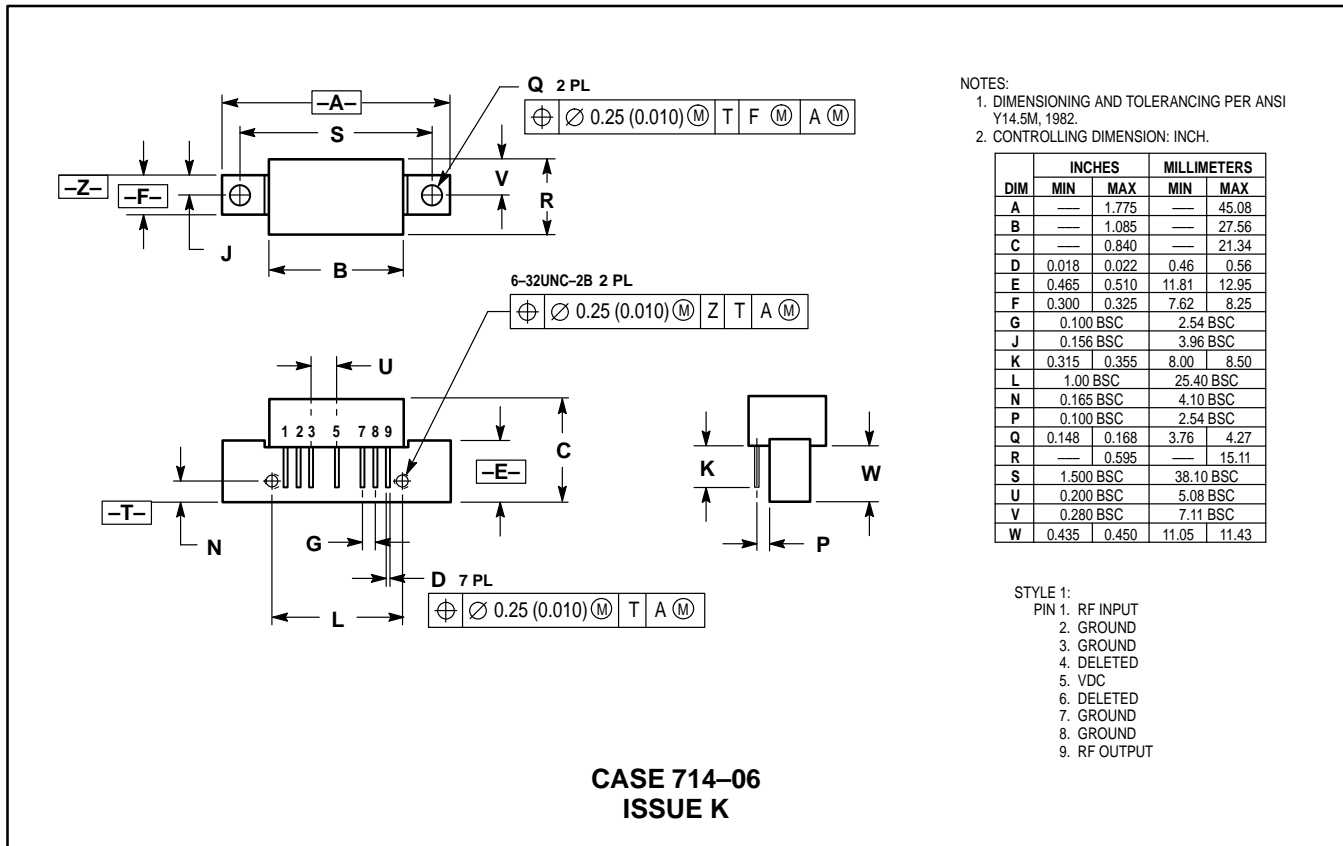
### MAXIMUM RATINGS

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 ( $V_{CC} = 24\text{ Vdc}$ , $T_C = +30^\circ\text{C}$ , 75 $\Omega$ system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	750	MHz
Power Gain	$G_p$	50 MHz	23.2	24.8	dB
		750 MHz	24	26	
Slope	S	0	0.7	2	dB
Gain Flatness (40-750 MHz, Peak To Valley)	—	—	0.4	0.8	dB
Return Loss — Input/Output ( $Z_o = 75\text{ Ohms}$ )	IRL/ORL	@ 40 MHz	20	—	dB
		@ $f > 40\text{ MHz}$ (Derate)	—	—	0.007
Composite Second Order ( $V_{out} = +40\text{ dBmV/ch.}$ , Worst Case)	CSO <sub>110</sub>	—	-65	-60	dBc
Cross Modulation Distortion @ Ch 2 ( $V_{out} = +40\text{ dBmV/ch.}$ , FM = 55 MHz)	XMD <sub>110</sub>	—	-63	-60	dBc
Composite Triple Beat ( $V_{out} = +40\text{ dBmV/ch.}$ , Worst Case)	CTB <sub>110</sub>	—	-63	-60	dBc
Noise Figure	NF	50 MHz	—	5.5	dB
		750 MHz	—	7	
DC Current	$I_{DC}$	280	—	350	mA

## PACKAGE DIMENSIONS



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 (M) 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

