

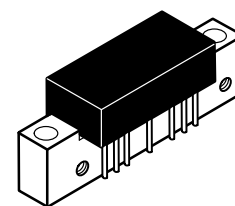
## The RF Line 550 MHz CATV Amplifier

**MHW6182**

. . . designed specifically for 550 MHz CATV applications. Features ion-implanted arsenic emitter transistors with 7.0 GHz  $f_T$  and an all gold metallization system.

- Specified for 77 Channel Performance
- Broadband Power Gain — @  $f = 40\text{--}550$  MHz  
 $G_p = 18.2$  dB (Typ) @ 50 MHz  
 $18.8$  dB (Min) @ 550 MHz
- Broadband Noise Figure @ 550 MHz  
 $NF = 7.0$  dB (Max)
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization
- 7.0 GHz Ion-Implanted Transistors

**18 dB GAIN**  
**550 MHz**  
**77-CHANNEL**  
**CATV INPUT/OUTPUT**  
**TRUNK AMPLIFIER**



**CASE 714-06, STYLE 1**

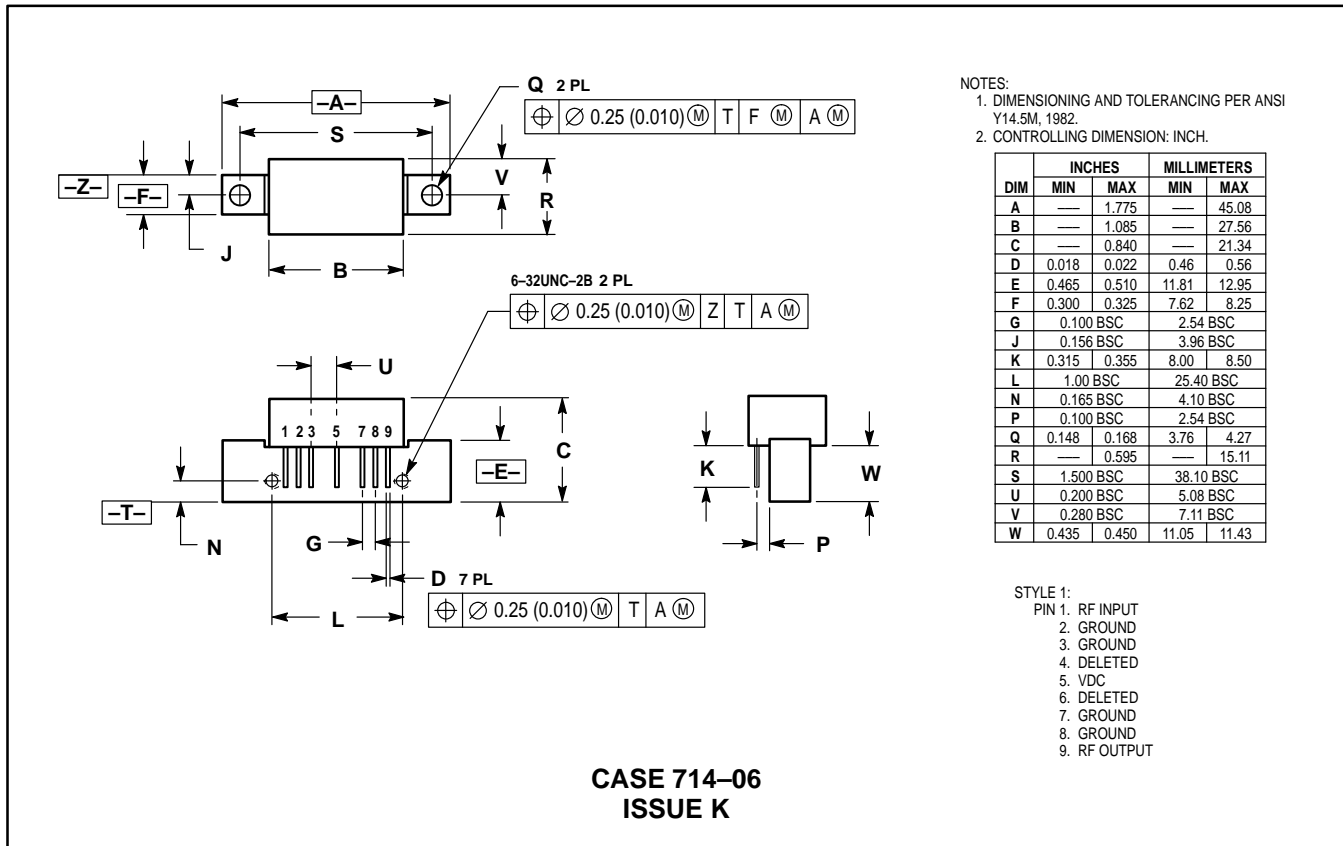
### ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	$V_{in}$	+70	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 ( $V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$ , 75 $\Omega$ system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit	
Frequency Range	BW	40	—	550	MHz	
Power Gain — 50 MHz	$G_p$	17.7	18.2	18.7	dB	
Power Gain — 550 MHz	$G_p$	18.8	19.2	20	dB	
Slope	S	0.5	—	2.5	dB	
Gain Flatness (Peak To Valley)	—	—	0.2	0.5	dB	
Return Loss — Input/Output ( $Z_0 = 75$ Ohms)	IRL/ORL	18	—	—	dB	
Second Order Intermodulation Distortion ( $V_{out} = +46$ dBmV per ch., Ch 2, M13, M22) ( $V_{out} = +44$ dBmV per ch., Ch 2, M30, M39)	IMD	—	-85 -80	— -72	dB	
Cross Modulation Distortion ( $V_{out} = +46$ dBmV per ch.) ( $V_{out} = +44$ dBmV per ch.)	60-Channel FLAT 77-Channel FLAT	XMD <sub>60</sub> XMD <sub>77</sub>	— —	-61 -64	— -62	dB
Composite Triple Beat ( $V_{out} = +46$ dBmV per ch.) ( $V_{out} = +44$ dBmV per ch.)	60-Channel FLAT 77-Channel FLAT	CTB <sub>60</sub> CTB <sub>77</sub>	— —	-62 -60	— -58	dB
Noise Figure ( $f = 550$ MHz)	NF	—	—	7.0	dB	
DC Current	$I_{DC}$	—	210	240	mA	

## 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	—	0.840	—	21.34
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	0.315	0.355	8.00	8.50
L	1.00 BSC	—	25.40 BSC	—
N	0.165 BSC	—	4.10 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	—
U	0.200 BSC	—	5.08 BSC	—
V	0.280 BSC	—	7.11 BSC	—
W	0.435	0.450	11.05	11.43

- STYLE 1:  
 PIN 1. RF INPUT  
 2. GROUND  
 3. GROUND  
 4. DELETED  
 5. VDC  
 6. DELETED  
 7. GROUND  
 8. GROUND  
 9. RF OUTPUT

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