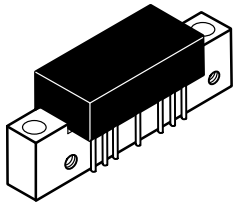
The RF Line
550 MHz CATV Amplifier

. . . 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 = 40–550 MHz
  G_p = 14 dB (Typ) @ 50 MHz
  14.5 dB (Min) @ 550 MHz
- Broadband Noise Figure
  NF = 7.5 dB (Max)
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization
- 7.0 GHz Ion–Implanted Transistors

MHW6142

14 dB GAIN
550 MHz
77–CHANNEL
CATV INPUT/OUTPUT
TRUNK AMPLIFIER



CASE 714–06, STYLE 1

ABSOLUTE MAXIMUM RATINGS

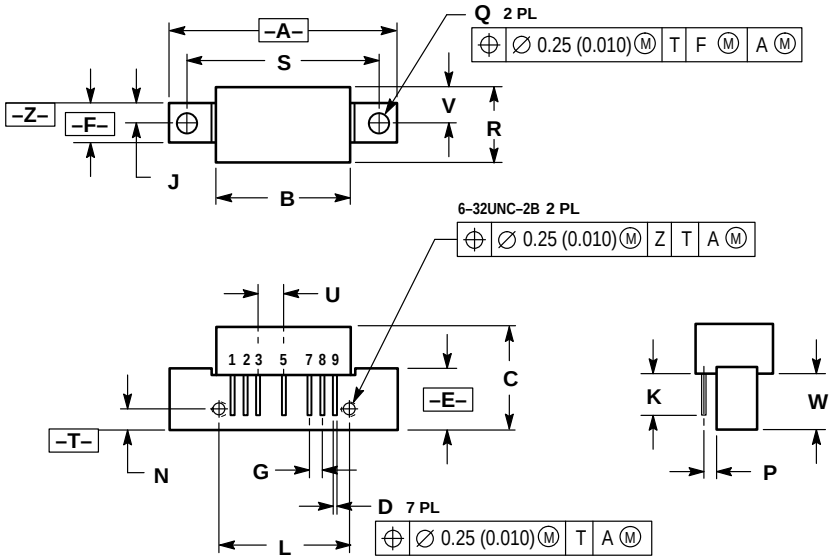
Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V_{in}	+70	dBmV
DC Supply Voltage	V_{CC}	+28	Vdc
Operating Case Temperature Range	T_C	–20 to +100	°C
Storage Temperature Range	T_{stg}	–40 to +100	°C

ELECTRICAL CHARACTERISTICS (V_{CC} = 24 Vdc, T_C = +30°C, 75 Ω system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Frequency Range		BW	40	—	550	MHz
Power Gain — 50 MHz		G_p	13.5	14	14.5	dB
Power Gain — 550 MHz		G_p	14.5	—	—	dB
Slope		S	0.2	—	1.5	dB
Gain Flatness (Peak To Valley)		—	—	0.2	0.5	dB
Return Loss — Input/Output (Z_o = 75 Ohms)	40–550 MHz	IRL/ORL	18	—	—	dB
Second Order Intermodulation Distortion		IMD				dB
(V_{out} = +46 dBmV per ch., Ch 2, M13, M22)			—	–78	—	
(V_{out} = +44 dBmV per ch., Ch 2, M30, M39)			—	–75	–72	
Cross Modulation Distortion						dB
(V_{out} = +46 dBmV per ch.)	60–Channel FLAT	XMD_{60}	—	–64	—	
(V_{out} = +44 dBmV per ch.)	77–Channel FLAT	XMD_{77}	—	–65	–62	
Composite Triple Beat						dB
(V_{out} = +46 dBmV per ch.)	60–Channel FLAT	CTB_{60}	—	–62	—	
(V_{out} = +44 dBmV per ch.)	77–Channel FLAT	CTB_{77}	—	–65	–59	
Noise Figure (f = 550 MHz)		NF	—	6.5	7.5	dB
DC Current		I_{DC}	—	210	240	mA

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PACKAGE DIMENSIONS



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

	INCHES		MILLIMETERS	
DIM	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

CASE 714–06
ISSUE K

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