The RF Line

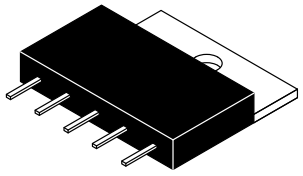
Low Distortion Wideband Reverse Amplifier Modules

Designed specifically for broadband applications requiring low distortion characteristics. Specified for use as return amplifiers for low–split 2–way cable TV systems. Features all gold metallization system.

- Guaranteed Broadband Power Gain
- Guaranteed Broadband Noise Figure
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization

MHW1254LC
MHW1304LC

12 Vdc
200 MHz
25/30 dB
CATV LOW CURRENT AMPLIFIER



CASE 431A–02, STYLE 1

MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
DC Supply Voltage	V_{CC}	+16	Vdc
RF Input Voltage (Single Tone)	V_{in}	+50	dBmV
Operating Case Temperature Range	T_C	– 20 to +100	°C
Storage Temperature Range	T_{stg}	– 40 to +100	°C

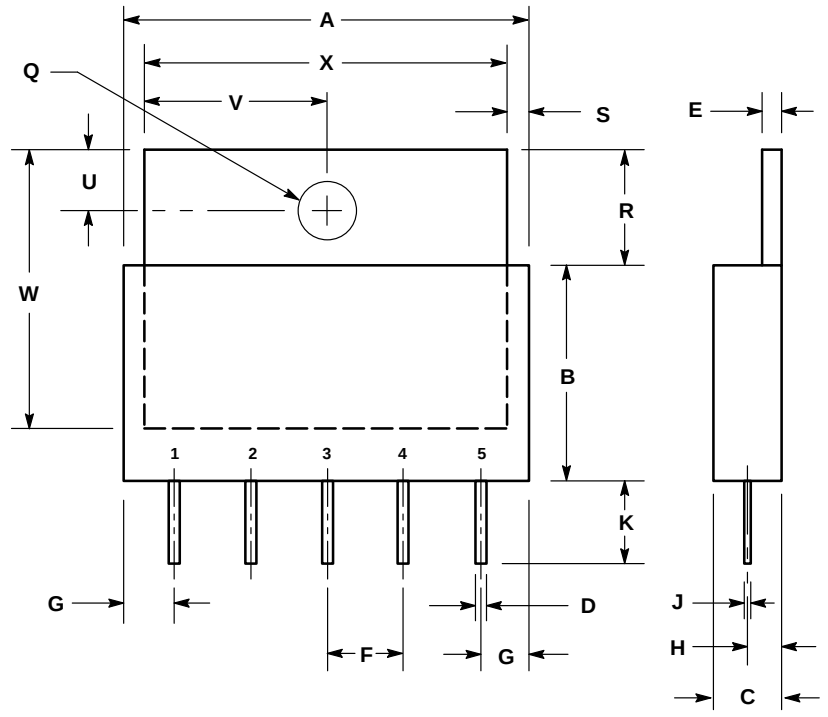
ELECTRICAL CHARACTERISTICS (V_{CC} = 12 Vdc, T_C = 30°C, 75 Ω system, unless otherwise noted)

Characteristic			Symbol	Min	Typ	Max	Unit
Frequency Range			BW	5.0	—	200	MHz
Power Gain	(f = 5.0 MHz)	MHW1254LC	Gp	24.2	24.8	25.6	dB
	(f = 50 MHz)			24.2	24.8	25.6	
	(f = 175 MHz)			24	24.7	25.6	
	(f = 200 MHz)			23.8	24.6	25.6	
	(f = 5.0 MHz)	MHW1304LC		29	29.8	31	
	(f = 50 MHz)			29	30	31	
	(f = 175 MHz)			29	29.8	31	
	(f = 200 MHz)			28.8	29.8	31	
Gain Slope	(f = 5.0 – 200 MHz)		S	—	–0.2	—	dB
Gain Flatness	(f = 5.0 – 200 MHz, Peak–to–Valley)		—	—	0.25	—	dB
Return Loss	(f = 5.0–200 MHz)	MHW1254LC	RL	20	25	—	dB
		MHW1304LC		18	25	—	
Second Order Intermodulation Distortion			IMD				dBc
(12 MHz + 43.25 MHz @ 55.25 MHz, V_{out} = 50 dBmV/ch)				—	–68	—	
(54 MHz + 121.25 MHz @ 175.25 MHz, V_{out} = 50 dBmV/ch)				—	–59	—	
(54 MHz + 145.25 MHz @ 199.25 MHz, V_{out} = 50 dBmV/ch)				—	–57	–54	
Composite Triple Beat							dBc
(V_{out} = 44 dBmV/ch, 22–Channel, @175.25 MHz)		MHW1254LC	CTB_{22}	—	–71	—	
(V_{out} = 44 dBmV/ch, 26–Channel, @199.25 MHz)			CTB_{26}	—	–67	—	
(V_{out} = 44 dBmV/ch, 22–Channel, @175.25 MHz)		MHW1304LC	CTB_{22}	—	–69	—	
(V_{out} = 44 dBmV/ch, 26–Channel, @199.25 MHz)			CTB_{26}	—	–66	—	

ELECTRICAL CHARACTERISTICS (V_{CC} = 12 Vdc, T_C = 30°C, 75 Ω system, unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Triple Beat Distortion (187.25–181.25 MHz+193.25 MHz @ 199.25 MHz, V_{out} = +50 dBmV/ch)		TB_3	—	–71	–68	dBc
Noise Figure	(f = 200 MHz)	NF	—	4.5	5.0	dB
DC Current	(Vdc = 12.0 V, T_C = 30 °C)	I_{DC}	90	100	110	mA

PACKAGE DIMENSIONS



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

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	1.055	1.065	26.80	27.05
B	0.550	0.565	13.97	14.35
C	0.175	0.185	4.45	4.70
D	0.020	—	0.51	—
E	0.045	0.055	1.14	1.40
F	0.195	0.205	4.95	5.21
G	0.125	0.135	3.18	3.43
H	0.080	0.090	2.03	2.29
J	0.010	—	0.25	—
K	0.215	0.225	5.46	5.72
Q	0.145	0.155	3.68	3.94
R	0.300	0.320	7.62	8.13
S	0.045	0.055	1.14	1.40
U	0.155	0.165	3.94	4.19
V	0.470	0.480	11.94	12.19
W	0.730	0.740	18.54	18.80
X	0.945	0.955	24.00	24.26

STYLE 1:
PIN 1. V_{in}
2. GROUND
3. $+V_{CC}$
4. GROUND
5. Vout

CASE 431A–02
ISSUE A

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