

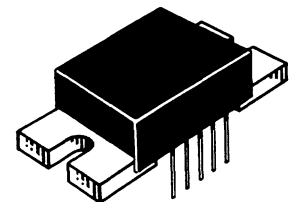
The RF Line
VHF Power Amplifier

MHW2001-15

... designed specifically for 15 volt Sonobouy applications in the frequency region of 135 to 175 MHz.

- Specified 15 Volt, VHF Characteristics:
 Output Power — 1.0 Watt Min
 Gain — 27 dB Min @ $P_{in} = 2.0$ mW
 Harmonics — -38 dBc Max ($2.0 f_o$)
- 50 Ω Input/Output Impedances
- Guaranteed Stability and Ruggedness
- Automated Surface Mount Construction Gives Consistent Performance and Reliability
- Gain Control Pin for Manual or Automatic Output Level Control

27 dB
135-175 MHz
1.5 WATT
SONOBOUY
POWER AMPLIFIER



CASE 297C-01

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	V_{CC}	18	Vdc
RF Input Power	P_{in}	8.0	mW
RF Output Power	P_{out}	2.0	W
Storage Temperature Range	T_{stg}	-40 to +80	$^{\circ}C$
Operating Case Temperature	T_C	-20 to +80	$^{\circ}C$

ELECTRICAL CHARACTERISTICS ($V_{CC} = V_{DRIVE} = 15$ V; $Z_o = 50 \Omega$, $T_C = 25^{\circ}C$. All characteristics guaranteed over bandwidth specified under "Frequency Range" unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	135	—	175	MHz
Gain @ $P_{in} = 2.0$ mW (Note 1)	G_p	27	29	33	dB
Input VSWR @ $P_{in} = 2.0$ mW	$VSWR_{in}$	—	—	2.5:1	—
Efficiency @ $P_{in} = 2.0$ mW	η	40	45	—	%
Harmonics @ $P_o = 1.5$ W	—	—	-45	-38	dBc
Stability @ $P_{in} = 0$ to 4.0 mW $V_{CC} = V_{dr} = 12$ to 16 V Source and Load VSWR = 4:1	—	All spurious outputs more than 60 dB below desired signal level			
Load Mismatch @ Load VSWR = 4:1 $V_{CC} = V_{dr} = 16$ V $P_{out} = 1.5$ W	—	No degradation in output power after return to initial operating conditions			
Standby Current @ $P_{in} = 0$ mW	I_s	—	—	50	mA
Operating Current @ $P_{out} = 1.5$ W	I_{CC}	—	—	250	mA

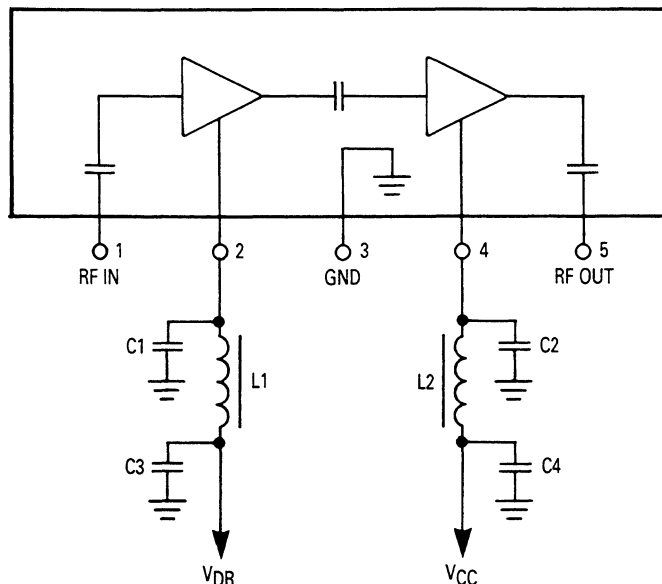
Note 1: Not designed for continuous operation. Duty cycle typical of Sonobouy applications. Consult factory for other conditions of operation.



DECOUPLING

Pins 2 and 4 are internally bypassed with a 0.018 μF chip capacitor which is effective for frequencies from 5.0 MHz to 175 MHz. For bypassing frequencies below

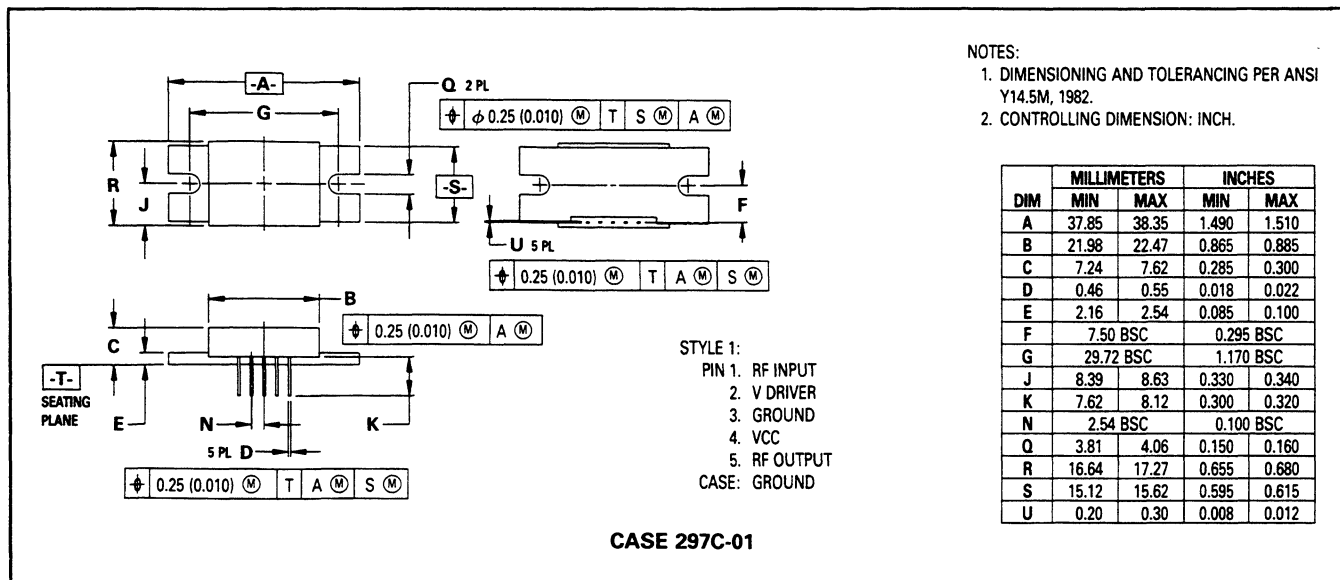
5.0 MHz, networks equivalent to that shown in Figure 1 are recommended. Inadequate decoupling may result in spurious outputs at certain operating frequencies and certain phase angles of input and output VSWR.



L1 = L2 = 0.2 μH (ferrite loaded)
 C1 = C2 = 0.1 μF
 C3 = C4 = 1 μF Tantalum

Figure 1. Decoupling Networks

OUTLINE DIMENSIONS



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