

# AMPLIFIERS TO 3 GHz

- AU SERIES
- AM SERIES



- LOW NOISE
- MEDIUM POWER
- WIDEBAND



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- AU SERIES
- AM SERIES



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- WIDEBAND



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## INTRODUCTION

This catalog:

- Summarizes guaranteed amplifier performance specifications.
- Provides typical performance data on some of our more popular models.
- Categorizes options to our standard catalog designs.
- Provides detailed outline drawings on all catalog models.

Although this catalog describes a vast array of standard designs, MITEQ supports custom designs based on individual system requirements.

## GENERAL SPECIFICATIONS

The following specifications are applied to all models within this catalog:

### POWER SUPPLY VARIATIONS

Most amplifiers include internal voltage regulators and reverse voltage protection diodes. They can, therefore, operate with an input voltage range from +15 V to +30 V and survive connection to a negative power supply without damage.

### TEMPERATURE RANGES

All specifications are guaranteed at +23°C. All small signal amplifiers are guaranteed to operate over a temperature range of -25 to +75°C with slightly degraded performance. Storage temperature for all models is -40 to +85°C. MITEQ will accept requirements for guaranteed electrical performance over this and other extended temperature ranges. Medium power and power amplifiers usually have a more restrictive upper temperature range. Guaranteed temperature specifications for power amplifiers vary by model.

### HEATSINKING

All power and medium power amplifiers (output power greater than +23 dBm) require adequate heatsinking. If your application does not allow for a mechanical heatsink, please contact MITEQ and request that one be supplied with the unit.

### CONNECTORS

All models are supplied with SMA-female connectors. SMA-male, BNC-female, N-male and N-female are optionally available on all current outlines. Connectors may be mixed. Please call with your specific connector requirements.

### STABILITY

All amplifiers are guaranteed to be unconditionally stable. Small signal amplifiers may be operated into any source or load impedance without damage. Power and medium power amplifiers must be terminated in 50 ohms at all times.

### SECOND AND THIRD ORDER INTERCEPT POINTS

The third order intercept point is typically 10 dB above the 1 dB compression point for most models. The second order intercept point is typically 20 dB above the 1 dB compression point.

### MAXIMUM INPUT SIGNAL LEVELS

The maximum input power level for survival without damage is +13 dBm CW. Most designs to 500 MHz can be modified to include an input limiter for protection up to 1 watt CW.

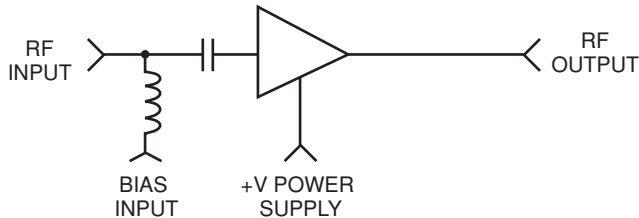
### ENVIRONMENTAL SPECIFICATIONS

Humidity.....Up to 95% at 40° noncondensing  
Vibration.....1.0 – 3.0 g's rms, 5 Hz – 50 kHz random,  
basic transportation, secured cargo,  
MIL-STD-810E, Method 514, Procedure 1

## OPTIONS FOR BIPOLAR AMPLIFIERS

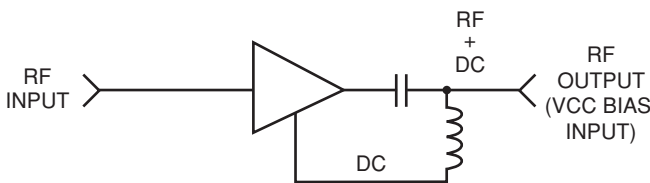
### INPUT BIAS TEE\* Add Suffix "-F"

Used to inject bias signal to photo diode or other type of device. Check for availability on your model before ordering. Available on most units operating above 1 MHz. Please contact MITEQ with your custom requirements.



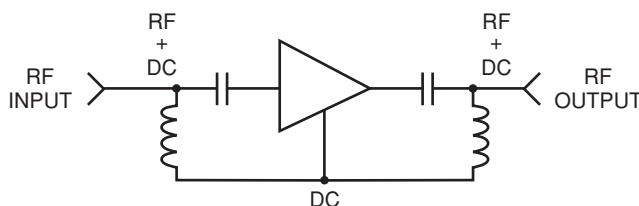
### BIAS THROUGH THE OUTPUT CONNECTOR\* Add Suffix "-1306/E" or "-1306/D"

Used to supply operating power when the amplifier is remotely located while eliminating the need to run a separate DC line. Specify whether existing power pin should be "Enabled" or "Disabled." To order, add -1306/E or -1306/D after model number. Example: AU-2A-0150-1306/E will have existing +15 V pin enabled so that it can be used as a test point. Use caution with this option since any voltage applied here will also be present on the RF output center pin. Available on most units operating above 1 MHz.



### BIAS THROUGH THE OUTPUT CONNECTOR WITH DC FEEDTHRU TO RF INPUT\* Add Suffix "-1334/E" or "-1334/D"

Used to supply operating power when the amplifier is remotely located and eliminates the need to run a separate DC line. This DC voltage is then internally fed to the RF input to power a remote LNA or other low power equipment. Maximum current of external load will vary with model type. Available on most units operating above 1 MHz. Please contact MITEQ prior to ordering.



Specify whether existing power pin should be "Enabled" or "Disabled". To order, add "-1334/E" or "-1334/D" after model number. Example: AU-2A-0150-1334/E will have existing +15 V pin enabled so that it can be used as a test point. Use caution with this option since any voltage applied here will also be present on both the RF output and input center pins.

### TYPE N OR BNC CONNECTORS Add Suffix "-N" or "-BNC"

Type N-female and type BNC-female are available on all outlines. Add connector type after model number. Examples: AU-2A-0150-N; AU-2A-0150-BNC. Type N-male and mixed connector types are also available on request. Please call MITEQ with your specific requirements.

### INPUT INTERNAL LIMITER Add Suffix "-1103"

Available on models up to 500 MHz. Will protect the input stage from CW signals as high as +30 dBm. To order, add "-1103" after model number. Example: AU-2A-0150-1103. Options are available for protection against short duration pulses up to 50 W.

### AC POWER SUPPLY (100 to 240 VAC, 47 - 440 Hz). Add Suffix "-1179"

Available as an add-on to most models using drawings 176592 and 179685. Includes 6-foot line cord with standard US line plug, internal fuse, on/off switch and LED indicator light. Amplifier is permanently mounted to power supply. To order, add "-1179" after model number. Example: AU-2A-0150-1179. Refer to drawings 176599, 176600 and 182866 for dimensions.

### AC POWER SUPPLY (Wall plug-in unit) Part Number "205531-21"

A low cost alternate to option "-1179", the wall plug-in unit is a small switching power supply capable of delivering 1 amp at 15 volts.

### AC POWER SUPPLY WITH SMC CONNECTORS (Wall plug-in unit) Part Number "-1179SC"

Same as above except has mating SMC connectors on amplifier DC input and power supply DC output. Available on all outlines.

\*Note: Not available on all models.

# SPECIFICATION DEFINITIONS

## GENERAL SPECIFICATIONS

All models described in this catalog are classified by several specifications, namely:

- Operating Frequency Range
- Gain
- Gain Flatness
- Noise Figure
- Output Power at 1 dB Compression
- Input and Output VSWR
- DC Supply Voltage and Current Consumption

The following notes give detailed definitions to these and additional specifications which may relate to your system requirements.

## OPERATING FREQUENCY RANGE

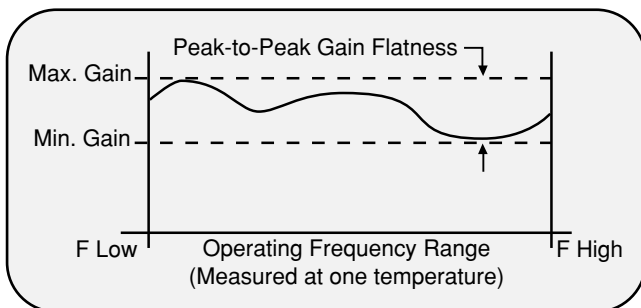
The operating frequency range is the range of frequencies over which the amplifier will meet or exceed the specification parameters. The amplifier may perform beyond this frequency range.

## GAIN

Gain is defined as the ratio of the power measured at the output of an amplifier to the power provided to the input port. It is usually expressed in decibels and is typically measured in a swept fashion across the operating frequency range. The gain of all amplifiers is verified by a swept measurement before shipment from MITEQ.

## GAIN FLATNESS

Gain flatness describes the variation in an amplifier's gain over the operating frequency range at any fixed temperature within the operating temperature range. As such, it does not include the variation of gain as a function of temperature (see Gain Variation vs. Temperature).



The gain flatness of an amplifier is measured by viewing the swept gain and determining the difference between the minimum gain and the maximum gain

recorded over the operating frequency range. Unless the amplifier is specified to operate over a defined temperature range, this measurement is performed at room ambient temperature (+23°C). If a range of temperatures is specified, the measurement must also be verified at the temperature extremes.

## NOISE FIGURE

Noise figure is classically defined as:

$$\text{Noise Figure} = \frac{S_i/N_i}{S_o/N_o} = \frac{\text{Signal-to-noise ratio at the amplifier input}}{\text{Signal-to-noise ratio at the amplifier output}}$$

Since all realistic amplifiers add thermal noise, the signal-to-noise ratio at the output will be degraded; therefore, noise figure will be a ratio greater than one, or when expressed in decibels, a positive number ( $NF_{dB} = 10 \log_{10}(NF_{Ratio})$ ). The additive noise of an amplifier can also be expressed in a parameter referred to as noise temperature. In this approach, the noise temperature of the amplifier is equal to the temperature (in degrees Kelvin) of a 50 Ω termination at the input of an ideal noiseless amplifier with the same gain and generating the same output noise power.

The relationship between noise figure and noise temperature is:

$$\text{Noise Figure} = 10 \text{ Log}_{10} \left\{ \frac{\text{Noise Temperature (Kelvin)}}{290 \text{ Kelvin}} + 1 \right\}$$

Noise figure data is measured at discrete frequencies throughout the band at +23°C unless specified otherwise.

## OUTPUT POWER AT 1 dB COMPRESSION

The 1 dB output compression point of an amplifier is simply defined as the output power level at which the gain deviates from the small signal gain by 1 dB.

All active components have a linear dynamic range. This is the range over which the output power varies linearly with respect to the input power. As the output power increases to near its maximum capability, the device will begin to saturate. The point at which the saturation effects are 1 dB from linear is defined as the 1 dB compression point. Because of the non-linear relation between the input and output power at this point, the following relationship holds:

$$P_{\text{out } 1 \text{ dB}} = P_{\text{in } 1 \text{ dB}} + \text{Linear Gain} - 1 \text{ dB}$$

## SPECIFICATION DEFINITIONS (CONT.)

### INPUT AND OUTPUT VSWR

Most RF and microwave systems are designed around a 50  $\Omega$  impedance system. An amplifier's impedance is designed to be as close as possible to 50  $\Omega$ ; however, this is not always possible, especially when attempting to simultaneously achieve a good noise figure. The VSWR of an amplifier is a measure of an amplifier's actual impedance ( $Z$ ) with respect to the desired impedance ( $Z_0$ ) in most cases 50  $\Omega$ .

The VSWR is derived from the reflection coefficient  $\rho$ , where  $\rho$  is a ratio of the normalized impedance:

$$\rho = \frac{Z - Z_0}{Z + Z_0}$$

and:

$$\text{VSWR} = \frac{1 + |\rho|}{1 - |\rho|}$$

VSWR is "measured" with either a scalar or vector network analyzer by analyzing the incident power and the reflected power at both ports of the device to determine the reflection coefficients which in turn are converted and displayed as VSWR. The ratio of the reflected power to the incident power is also known as the return loss.

### SUPPLY VOLTAGE AND CURRENT CONSUMPTION

All standard models are internally voltage regulated. Most amplifiers are specified for +15 V operation but may be safely operated at +30 V. Many models employ an internal 8-volt regulator, permitting operation over a range of +11 to +30 V. Operation above +15 V may require a heatsink for some medium power amplifiers. All models are reverse voltage protected. The use of a regulator allows normal operation even in the presence of power supply variations, as long as the minimum voltage is above the drop-out voltage of the regulator plus the 0.7 V drop across the reverse polarity protection diode. An amplifier with an internal 8-volt regulator requires a minimum voltage of about +10.7 V. Please ask about your specific model.

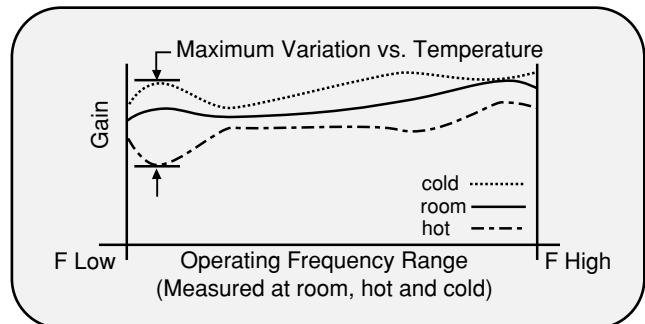
### ADDITIONAL SPECIFICATIONS

In addition to the electrical specifications included for most of the models within this catalog, there are additional specifications which are useful to the engineer designing around stringent system requirements:

- Gain Variation vs. Temperature
- Overall Gain Window
- Intercept Point
- Dynamic Range
- Harmonic Suppression
- Reverse Isolation
- Phase and Amplitude Matching and Tracking
- Phase Linearity
- Recovery from Saturation

### GAIN VARIATION VS. TEMPERATURE

Gain variation versus temperature defines the maximum allowable variation of the linear gain due to temperature at any discrete frequency. As a result, this parameter does not account for drift over frequency.

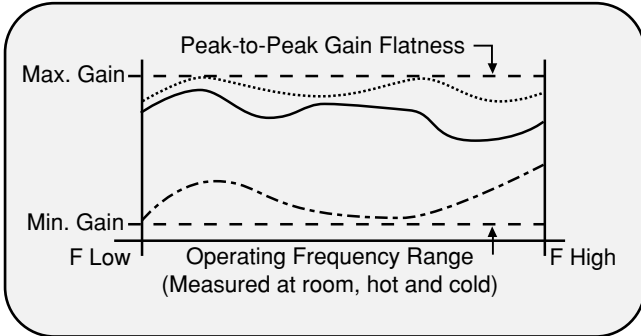


Gain variation versus temperature is measured by performing swept gain measurements at the specified temperature extremes and comparing the deviations between the two sweeps at each frequency to determine the greatest change. When a  $\pm$  value is used, then the delta is taken at both temperature extremes with respect to room temperature (+23°C).

## SPECIFICATION DEFINITIONS (CONT.)

### OVERALL GAIN WINDOW

An overall gain window specification defines the absolute minimum and maximum gain values over both temperature and frequency.



It is the most complete way to specify an amplifier; however, it also impacts the price due to the additional testing and alignment required from adding this constraining parameter.

### INTERCEPT POINT

Solid state amplifiers use transistors, either bipolar or field effect, to provide gain. Although these transistors are generally used in a linear mode (except in the case of other than a Class A amplifier), they still exhibit nonlinear phenomenon, such as intermodulation effects and harmonic generation. These effects are evident in spurious products present at the output. In the case of the single-tone condition, the spurious signals are the harmonics of the fundamental input signal. In the case of the two-tone condition, the spurious signals are a mixing product of two input signals at the frequencies  $f_1$  and the other at  $f_2$ . The most commonly discussed being the second order and the third order two-tone spurs.

Second order two-tone spurs are the sum and difference product of the fundamental input frequencies, i.e.;

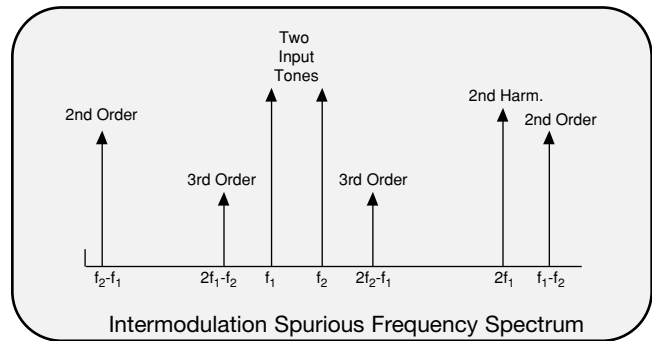
$$f_{\text{SPUR}} = f_1 \pm f_2$$

These spurious signals are only of concern when the band is greater than one octave. If the frequency range is less than one octave, the two-tone second order spurs will be out of band.

These spurious signals are characterized with respect to the input signal by means of a theoretical tool called an intercept point. These points are defined as the point where the linear curve of input vs. output power of the fundamental would intersect with the linear curve of the spurious signal if saturation effects would not limit the output levels of these signals. Since it is known that the second order spurious products have a slope of 2:1 with respect to the fundamental input power, the value of the spurs can be estimated if the input signal power ( $P_{\text{IN}}$ ) and the output second order intercept point ( $\text{OIP}_2$ ) are known. The relationship is as follows:

$$\begin{aligned} &\text{Two-Tone Second Order} \\ \text{Spurious Suppression} &= \text{OIP}_2 - (P_{\text{IN}} + G) \end{aligned}$$

$$\begin{aligned} &\text{Two-Tone Second Order} \\ \text{Spurious Level} &= 2 (P_{\text{IN}} + G) - \text{OIP}_2 \end{aligned}$$



Third order spurious products result from combinations of the fundamental signal and the second harmonics.

$$f_{\text{SPUR}} = |2f_1 \pm f_2| \pm |f_1 \pm 2f_2|$$

The slope of the third order spurious signals is 3:1 with respect to the fundamental input power, and again the value of the spurs can be estimated if the input signal power ( $P_{\text{IN}}$ ) and the output third order intercept point ( $\text{OIP}_3$ ) are known. The relationship is as follows:

$$\begin{aligned} &\text{Two-Tone Third Order} \\ \text{Spurious Suppression} &= 2 \{ \text{OIP}_3 - (P_{\text{IN}} + G) \} \end{aligned}$$

$$\begin{aligned} &\text{Two-Tone Third Order} \\ \text{Spurious Level} &= 3 (P_{\text{IN}} + G) - 2 \text{OIP}_3 \end{aligned}$$



## SPECIFICATION DEFINITIONS (CONT.)

### DYNAMIC RANGE

Dynamic range can be defined in several ways. The two classical approaches are to define the linear dynamic range, and the second being the spurious free dynamic range.

The linear dynamic range defines the difference between the minimum detectable signal (MDS), referred to the input of the amplifier or receiver and the maximum signal level at which the amplifier remains linear. This is typically defined by the input 1 dB compression point ( $P_{IN}$  1 dB). The minimum detectable signal is defined by system constraints such as noise figure, bandwidth, and predetection signal-to-noise ratio.

Spurious free dynamic range is defined as the difference between the minimum detectable signal and the point at which the intermodulation signals generated from two equal tones would either equal this MDS or some other acceptable level.

### REVERSE ISOLATION

Reverse isolation of an amplifier simply defines the isolation between the input and output of an amplifier. It is tested by injecting a signal to the output port and measuring its level at the input.

### PHASE LINEARITY

A phase of a signal versus frequency will be distorted due to the nonlinear phase elements within the amplifier. This distortion is called phase linearity and is measured by means of a vector network analyzer across the operating frequency range.

### PHASE MATCHING

Phase matching in the strict sense is defined as the difference in insertion phase between any two units. This parameter is usually defined across the operating frequency band; however, in some cases it is defined over frequency segments ( $\Delta F$ ) within the overall operating band. In the case of the definition over the entire band, the insertion phase is measured by means of a vector network analyzer, stepped across the band. The values at each frequency for two amplifiers are subtracted to provide a delta plot across frequency. Since each system has its own peculiarities, there are a wide variety of variations of this definition. Therefore, if your system requirements are such that this definition does not

accurately meet your needs, or if this level of definition exceeds your real need and results in higher cost, you should contact MITEQ's engineering staff to discuss the most cost effective options.

### PHASE TRACKING

Phase tracking is very similar to phase matching. However, in the case of phase tracking, an arbitrary fixed offset is removed that can usually be compensated in system software. The offset, sometimes referred to as the DC component (because all that remains is the phase versus frequency ripple and slope), is calculated at each temperature based upon an average over the band. As with phase matching, there are many variations on this theme that also should be discussed with MITEQ's engineering before committing to a final specification.

### AMPLITUDE MATCHING

Same as phase matching, except substitute gain for phase.

### AMPLITUDE TRACKING

Same as phase tracking, except substitute gain for phase.

### AM TO PM CONVERSION

This specification parameter defines the change in phase at any fixed frequency across the operating band with respect to input signal power. It is usually defined in terms of degrees per dB ( $^{\circ}/\text{dB}$ ) over a specified input dynamic range. Most GaAs FET amplifiers exhibit well-behaved AM/PM conversion (less than  $1^{\circ}/\text{dB}$ ) up to the 1 dB compression point. Beyond that level of input power, the variation can be quite large, depending mainly on the devices and biasing conditions used.

### PULSE CONDITIONS

A variety of pulse conditions can be specified on an amplifier, including amplitude or phase overshoot and ringing, amplitude or phase settling time, recovery time, etc. As with the matching and tracking specifications, they are typically system dependent and rarely fall into a standard definition. Therefore, it is best to contact MITEQ's engineering staff when attempting to define the operation of an amplifier in the presence of pulsed signals.

# CONVERSION TABLES

## DECIBELS-VOLTS-WATTS - 50 OHM SYSTEM

dBm	Volt	Watt
+53	100	200
+50	71	100
+49	63	79
+48	56	63
+47	50	50
+46	45	40
+45	40	32
+44	35	25
+43	32	20
+42	28	16
+41	25	13
+40	22	10
+39	20	8
+38	18	6
+37	16	5
+36	14	4
+35	13	3
+34	11	2.5
+33	10	2
+32	9.0	1.6
+31	7.9	1.3
+30	7.1	1.0

dBm	Volt	mW
+29	6.4	790
+28	5.6	631
+27	5.0	501
+26	4.4	398
+25	4.0	316
+24	3.5	251
+23	3.2	200
+22	2.8	158
+21	2.5	126
+20	2.2	100
+19	2.0	79
+18	1.8	63
+17	1.6	50
+16	1.4	40
+15	1.3	32
+14	1.1	25
+13	1.0	20

dBm	mV	mW
+12	890	15.9
+11	793	12.6
+10	707	10.0
+9	630	7.9
+8	561	6.3
+7	500	5.0
+6	446	4.0
+5	398	3.2

dBm	mV	mW
+4	354	2.5
+3	316	2.0
+2	282	1.6
+1	251	1.3
0	224	1.0

dBm	mV	µW
-1	199	800
-2	178	631
-3	158	500
-4	141	400
-5	126	320
-6	112	250
-7	100	200
-8	89	160
-9	79	126
-10	71	100
-11	63	
-12	56	
-13	50	
-14	45	
-15	40	
-16	35	
-17	32	
-18	28	
-19	25	10
-20	22	
-21	20	
-22	18	
-23	16	
-24	14	
-25	13	
-26	11	
-27	10	
-28	9.0	
-29	8.0	1.0
-30	7.0	
-31	6.3	
-32	5.6	
-33	5.0	
-34	4.5	
-35	4.0	
-36	3.5	
-37	3.2	
-38	2.8	
-39	2.5	

dBm	µV	nW
-40	2200	100
-41	2000	
-42	1800	

dBm	µV	nW
-43	1583	
-44	1411	
-45	1257	
-46	1121	
-47	999	
-48	890	
-49	793	
-50	707	10
-51	630	
-52	562	
-53	501	
-54	446	
-55	398	
-56	354	
-57	316	
-58	282	
-59	251	
-60	224	1.0
-61	199	
-62	178	
-63	158	
-64	141	
-65	126	
-66	112	
-67	100	
-68	89	
-69	79	
-70	71	0.1
-71	63	
-72	56	
-73	50	
-74	45	
-75	40	
-76	35	
-77	32	
-78	28	
-79	25	
-80	22	.01
-81	20	
-82	18	
-83	16	
-84	14	
-85	13	
-86	11	
-87	10	

dBm	nV	pW
-88	8900	
-89	7933	
-90	7071	1.0
-91	6302	

dBm	nV	pW
-92	5617	
-93	5006	
-94	4462	
-95	3976	
-96	3544	
-97	3159	
-98	2815	
-99	2501	
-100	2236	0.1
-101	1993	
-102	1776	
-103	1583	
-104	1411	
-105	1257	
-106	1121	
-107	999	
-108	890	
-109	793	
-110	707	.01
-111	630	
-112	562	
-113	501	
-114	446	
-115	398	
-116	354	
-117	316	
-118	282	
-119	251	
-120	224	.001
-121	199	
-122	178	
-123	158	
-124	141	
-125	126	
-126	112	
-127	100	
-128	89	
-129	79	

dBm	nV	fW
-130	71	0.1
-131	63	
-132	56	
-133	50	
-134	45	
-135	40	
-136	35	
-137	32	
-138	28	
-139	25	
-140	22	.01

## CONVERSION OF RETURN LOSS (dB) TO VSWR

Return Loss (dB)	VSWR
46	1.01:1
40	1.02:1
37	1.03:1
34	1.04:1
32	1.05:1
31	1.06:1
29	1.07:1
28	1.08:1
27	1.09:1
26	1.10:1

Return Loss (dB)	VSWR
25	1.12:1
24	1.13:1
23	1.15:1
22	1.17:1
22	1.18:1
21	1.20:1
20	1.22:1
19	1.25:1
18	1.30:1
17	1.33:1

Return Loss (dB)	VSWR
16	1.38:1
15	1.43:1
14	1.50:1
13	1.58:1
12	1.67:1
11	1.78:1
10	1.92:1
9	2.10:1
8	2.32:1
7	2.61:1

Return Loss (dB)	VSWR
6	3.01:1
5	3.57:1
4	4.42:1
3	5.85:1
2	8.72:1
1	17.40:1
5	34.78:1
0	∞

## REFLECTION MEASUREMENTS

The table of reflection measurements is made up of seven columns, computed as follows:

1. VSWR is voltage standing wave ratio tabulated from 1.000 to 3.50 in steps of .010.
2. VSWR (dB) =  $20 \log_{10} (\text{VSWR})$ .
3. K is the absolute value of the reflection coefficient:

$$K = \frac{\text{VSWR} - 1}{\text{VSWR} + 1}$$

4. K (dB) =  $20 \log_{10} (1/K)$ . Return loss.
5.  $K^2$  is the power reflection coefficient, or the fraction of power reflected.
6.  $1 - K^2$  is the fraction of power transmitted.
7.  $1 - K^2$  (dB) =  $-10 \log_{10} (1 - K^2)$

VSWR	VSWR (dB)	K	K (dB)	$K^2$	$1 - K^2$	$1 - K^2$ (dB)
1.000	0.00000	0.0000	$\infty$	0.00000	1.00000	0.0000000
1.001	.00868	.000490	66.20	.0000002	.9999998	.0000010
1.002	.01735	.000999	60.01	.0000010	.9999990	.0000043
1.003	.02602	.001498	56.49	.0000022	.9999978	.0000097
1.004	.03467	.001996	54.00	.0000040	.9999960	.0000173
1.005	.04332	.002494	52.06	.0000062	.9999938	.0000270
1.006	.05196	.002991	50.48	.0000090	.9999910	.0000388
1.007	.06059	.003488	49.15	.0000122	.9999872	.0000528
1.008	.06921	.003984	47.99	.0000159	.9999841	.0000689
1.009	.07782	.004480	46.97	.0000201	.9999799	.0000871
1.010	.086	.0050	46.02	.00003	.99997	.0001
1.020	.173	.0099	40.09	.00010	.99990	.0004
1.030	.256	.0148	36.60	.00022	.99978	.001
1.040	.340	.0196	34.15	.00038	.99962	.002
1.050	.424	.0244	32.25	.00060	.99940	.003
1.060	.506	.0291	30.72	.00085	.99915	.004
1.070	.588	.0338	29.42	.00114	.99886	.005
1.080	.668	.0385	28.29	.00148	.99852	.006
1.090	.749	.0431	27.31	.00186	.99814	.008
1.100	.828	.0476	26.45	.00227	.99773	.010
1.110	.906	.0521	25.68	.00271	.99729	.012
1.120	.984	.0566	24.94	.00320	.99680	.014
1.130	1.062	.0610	24.29	.00372	.99628	.017
1.140	1.138	.0654	23.69	.00428	.99572	.019
1.150	1.214	.0698	23.12	.00487	.99513	.021
1.160	1.289	.0741	22.60	.00549	.99451	.024
1.170	1.364	.0783	22.12	.00613	.99387	.027
1.180	1.438	.0826	21.66	.00682	.99318	.030
1.190	1.511	.0868	21.23	.00753	.99247	.033
1.200	1.584	.0909	20.83	.00826	.99174	.036
1.210	1.656	.0950	20.44	.00903	.99097	.039
1.220	1.727	.0991	20.08	.00982	.99018	.043
1.230	1.798	.1031	19.73	.01063	.98937	.046
1.240	1.868	.1071	19.40	.01147	.98853	.050
1.250	1.938	.1111	19.09	.01234	.98766	.054
1.260	2.007	.1150	18.78	.01323	.98677	.058
1.270	2.076	.1189	18.49	.01414	.98586	.062
1.280	2.144	.1228	18.22	.01508	.98492	.066
1.290	2.212	.1266	17.51	.01603	.98397	.070
1.300	2.278	.1304	17.70	.01700	.98300	.074
1.310	2.345	.1342	17.44	.01801	.98199	.079
1.320	2.411	.1379	17.21	.01902	.98098	.083
1.330	2.477	.1416	16.98	.02005	.97995	.088
1.340	2.542	.1453	16.76	.02111	.97889	.093
1.350	2.607	.1489	16.54	.02217	.97783	.097

## AMPLIFIERS BY FREQUENCY

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. (±dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
0.001-400	AU-1442	35	0.5	2:1	50	1.3	8	15	45	179685-2
0.001-400	AU-1447	60	0.5	2:1	50	1.3	11	15	100	179685-3
0.001-500	AU-1414	14	0.5	2:1	50	3	7	15	40	179685-1
0.001-500	AU-1310	30	0.5	2:1	50	1.4	8	15	50	179685-2
0.001-500	AU-1332	51	0.5	2:1	50	1.4	12	15	110	179685-3
0.001-500	AU-1291	63	0.75	2:1	50	1.4	11	15	120	179685-4
0.001-1000	AM-1300	27	0.75	2:1	50	1.7	7	15	55	179685-2
0.001-1000	AM-1431	41	1	2:1	50	1.8	10	15	100	179685-3
0.001-1000	AM-1309	50	1	2.2:1	50	1.8	8	15	90	179685-4
0.01-300	AU-1547	18	0.5	2:1	50	2.6	8	15	35	179685-1
0.01-400	AU-1565	55	0.75	2:1	50	1.4	16	15	120	179685-3
0.01-1000	AM-1616-1000	20	0.75	2:1	50	3.4	14	15	60	179685-1
0.01-1000	AM-1666-1000	28	0.5	2:1	50	3.5	10	15	115	179685-2
0.01-1000	AM-1607-1000	40	0.5	2:1	50	3.3	13	15	100	179685-2
0.01-1000	AM-1634-1000	50	0.75	2:1	50	3.8	15	15	130	179685-3
0.01-1000	AM-1676	50	1	2:1	50	1.8	13	15	115	179685-3
0.01-1300	AM-1422	19	1	2.2:1	50	2.5	5	15	55	179685-2
0.01-1300	AM-1660	58	1	2:1	50	2.2	13	15	135	179685-4
0.01-2000	AM-1616-2000	20	1	2:1	50	3.8	11	15	60	179685-1
0.01-2000	AM-1666-2000	28	1	2.2:1	50	3.9	7	15	115	179685-2
0.01-2000	AM-1607-2000	40	1	2:1	50	3.8	11	15	100	179685-2
0.01-2000	AM-1634-2000	50	1.5	2:1	50	4.2	14	15	130	179685-3
0.01-2500	AM-1616-2500	20	1.25	2:1	50	4	9	15	60	179685-1
0.01-2500	AM-1666-2500	28	1.75	2.2:1	50	4.2	5	15	115	179685-2
0.01-2500	AM-1607-2500	40	1.5	2:1	50	4.3	8	15	100	179685-2
0.01-3000	AM-1616-3000	20	2	2:1	50	4.3	7	15	60	179685-1
0.01-3000	AM-1607-3000	40	2	2:1	50	4.6	7	15	100	179685-2
0.01-3000	AM-1634-3000	50	2	2:1	50	4.5	11	15	130	179685-3
0.1-250	AU-1559	11	0.5	2:1	50	4.6	17	15	70	179685-1
0.1-1000	AM-1626-1000	20	0.75	2:1	50	3.8	16	15	95	179685-1
0.1-2000	AM-1626-2000	20	1	2:1	50	4.2	14	15	95	179685-1
0.2-400	AU-1583	35	0.5	2:1	50	1.4	8	15	45	179685-2
0.2-1000	AM-1551	40	1	2:1	50	1.7	15	15	130	179685-3
0.3-200	AU-1433	18	0.5	2:1	50	2	8	15	30	179685-1
0.3-200	AU-1566	26	0.5	2:1	50	2.3	19	15	140	179685-2
0.3-400	AU-1519	58	0.75	2:1	50	1.3	12	15	100	179685-3
0.3-500	AU-3A-0150	52	0.5	2:1	50	1.4	12	15	95	179685-3
0.3-600	AU-1006	30	0.75	2:1	50	1.4	7	15	50	179685-2
0.3-600	AU-1027	52	0.5	2:1	50	1.5	12	15	95	179685-3
0.3-1000	AM-1573-1000	17	0.75	2:1	50	3.8	20	15	125	179685-1
0.3-1000	AM-2A-000110	28	0.75	2:1	50	1.8	8	15	55	179685-2
0.3-1000	AM-1663	30	0.75	2:1	50	3.7	20	15	165	179685-2
0.3-1000	AM-1469-1000	30	0.75	2:1	50	3.6	18	15	150	179685-2
0.3-1000	AM-1598-1000	32	1	2:1	50	3.8	16	15	135	179685-2
0.3-1000	AM-3A-000110	37	1	2:1	50	1.8	15	15	135	179685-3
0.3-1000	AM-1622-1000	41	0.75	2:1	50	3.3	15	15	95	179685-2
0.3-1000	AM-1578	44	0.75	2:1	50	1.8	15	15	130	179685-3
0.3-1000	AM-1685	50	1	2:1	50	1.8	13	15	115	179685-3
0.3-1000	AM-1594-1000	51	1	2:1	50	3.4	17	15	180	179685-3
0.3-1000	AM-1646	59	1	2:1	50	1.8	15	15	165	179685-4
0.3-2000	AM-1573-2000	17	1.5	2:1	50	4.5	19	15	140	179685-1
0.3-2000	AM-1469-2000	30	1	2:1	50	4.3	17	15	150	179685-2
0.3-2000	AM-1598-2000	32	1.25	2:1	50	4.5	15	15	135	179685-2
0.3-2000	AM-1622-2000	41	1	2:1	50	3.7	12	15	95	179685-2
0.3-2000	AM-1594-2000	51	1.5	2:1	50	3.9	16	15	180	179685-3
0.3-2500	AM-1469-2500	30	1.25	2:1	50	4.6	17	15	150	179685-2
0.3-2500	AM-1622-2500	41	1.25	2:1	50	4.5	10	15	95	179685-2
0.3-3000	AM-1594-3000	51	2.5	2:1	50	4.3	10	15	180	179685-3
0.4-400	AU-1658	35	0.5	2.2:1	50	1.3	7	15	45	179685-2
0.5-500	AU-1263	48	0.5	2:1	50	1.4	20	15	170	179685-3
0.7-400	AU-1579	35	0.5	2:1	50	1.3	7	15	45	179685-2
1-300	AU-1384	11	0.5	2.2:1	50	5.2	19	15	85	179685-1
1-300	AU-1046	19	0.5	2:1	50	2.6	10	15	40	179685-1
1-300	AU-1525	61	0.75	2:1	50	1.3	20	15	225	179685-4
1-300	AU-1338	72	0.75	2:1	50	1.5	14	15	120	179685-4

## AMPLIFIERS BY FREQUENCY (CONT.)

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. (±dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
1-400	AU-1421	24	0.5	2:1	50	3.6	19	15	150	179685-2
1-400	AU-1462	26	0.5	2:1	50	2.2	16	15	150	179685-2
1-400	AU-1464	35	0.5	2:1	50	1.3	8	15	45	179685-2
1-500	AU-1A-0150	14	0.5	2:1	50	3	9	15	40	179685-1
1-500	AU-2A-0150	30	0.5	2:1	50	1.4	8	15	50	179685-2
1-500	AU-1543	34	0.5	2:1	50	1.8	14	15	80	179685-2
1-500	AM-1610-500	36	0.5	1.5:1	50	2.9	20	15	160	179685-2
1-500	AU-1678	54	0.75	2:1	50	1.4	22	15	190	179685-3
1-1000	AM-1662-1000	12	0.75	2:1	50	4.5	20	15	130	179685-1
1-1000	AM-1603-1000	18	1	2:1	50	4.3	16	15	75	179685-1
1-1000	AM-1352-1000	20	0.5	2:1	50	3.8	17	15	100	179685-1
1-1000	AM-1185-1000	28	0.5	2:1	50	3.6	11	15	115	179685-2
1-1000	AM-1412	35	0.75	2:1	50	1.8	15	15	150	179685-3
1-1000	AM-1610-1000	36	0.75	2:1	50	3.3	20	15	160	179685-2
1-1000	AM-1533	40	0.75	2:1	50	1.8	15	15	140	179685-3
1-1500	AM-2A-000115	18	1	2:1	50	3.5	7	15	50	179685-2
1-1500	AM-3A-000115	35	1.25	2:1	50	2.5	13	15	120	179685-3
1-1500	AM-4A-000115	40	1.5	2.2:1	50	2.4	9	15	110	179685-4
1-2000	AM-1649	11	1	2:1	50	5.6	15	15	85	179685-1
1-2000	AM-1662-2000	12	1	2:1	50	4.7	18	15	130	179685-1
1-2000	AM-1352-2000	20	0.75	2:1	50	4.2	13	15	100	179685-1
1-2000	AM-1185-2000	31	1	2:1	50	4.5	9	15	100	179685-2
1-2000	AM-1610-2000	36	1	2:1	50	3.5	18	15	160	179685-2
1-2500	AM-1352-2500	20	1	2:1	50	4.7	13	15	100	179685-1
1-2500	AM-1185-2500	28	1.75	2:1	50	4.5	6	15	115	179685-2
1-3000	AM-1662-3000	12	1.5	2:1	50	4.9	15	15	130	179685-1
5-200	AU-1612	30	0.5	2:1	50	2.8	19	15	140	179685-2
5-300	AU-1021	24	0.5	2:1	50	2.9	21	15	175	179685-2
5-300	AU-1561	24	0.5	2:1	50	5.5	22	15	240	179685-2
5-400	AU-1322	24	0.5	2:1	50	3.5	20	15	165	179685-2
5-400	AU-1466	36	0.5	2:1	50	1.3	8	15	50	179685-2
5-500	AU-1611	14	0.5	2:1	50	3	10	15	40	179685-1
5-500	AU-1114	33	0.5	2:1	50	1.4	8	15	55	179685-2
5-500	AU-1313	44	0.5	2:1	50	1.4	9	15	70	179685-3
5-600	AU-1467	63	1	2:1	50	1.6	12	15	140	179685-4
5-1000	AM-1581	26	0.75	2:1	50	1.8	7	15	55	179685-2
5-1000	AM-1604S-1000	32	0.5	2:1	50	3.5	18	15	130	179685-2
5-1000	AM-1605	38	0.75	2:1	50	3.7	20	15	205	179685-2
5-1000	AM-1599-1000	40	0.75	2:1	50	3.3	14	15	100	179685-2
5-1000	AM-1580	52	0.75	2:1	50	1.8	19	15	200	179685-3
5-1500	AM-1638	25	1	2:1	50	5	20	15	210	179685-2
5-1500	AM-4A-000515	41	1.25	2.2:1	50	2.2	9	15	95	179685-4
5-2000	AM-1604S-2000	33	1.25	2:1	50	3.8	16	15	130	179685-2
5-2000	AM-1599-2000	40	1	2:1	50	3.9	11	15	100	179685-2
5-2500	AM-1358	30	1	2:1	50	3.8	20	15	160	179685-2
5-2500	AM-1599-2500	40	1.5	2:1	50	4.3	9	15	100	179685-2
5-3000	AM-1604S-3000	33	2.5	2:1	50	4.4	15	15	130	179685-2
10-1000	AM-1618-1000	21	0.5	2:1	50	3.4	14	15	60	179685-1
10-1000	AM-1601-1000	33	0.75	2:1	50	3.5	16	15	180	179685-2
10-1000	AM-1571	40	1	2:1	50	1.8	18	15	150	179685-3
10-1000	AM-1591-1000	50	0.75	2:1	50	3.4	18	15	170	179685-3
10-2000	AM-1618-2000	21	0.75	2:1	50	3.6	12	15	60	179685-1
10-2000	AM-1601-2000	33	1	2:1	50	3.9	16	15	150	179685-2
10-2000	AM-1591-2000	50	1.25	2:1	50	3.9	18	15	170	179685-3
10-2500	AM-1618-2500	21	1.5	2:1	50	3.9	10	15	60	179685-1
10-2500	AM-1601-2500	33	2	2:1	50	4.2	15	15	150	179685-2
10-2500	AM-1591-2500	50	1.5	2:1	50	3.9	17	15	170	179685-3
10-3000	AM-1601-3000	33	2.5	2:1	50	4.5	15	15	150	179685-2
15-1000	AM-1367-1000	38	0.5	2.2:1	50	5.2	19	15	260	179685-3
15-2000	AM-1367-2000	38	1	2.2:1	50	5.4	18	15	260	179685-3
15-3000	AM-1367-3000	38	2.5	2.2:1	50	5.9	15	15	260	179685-3
20-500	AU-1537-500	30	0.5	2:1	50	4	23	15	315	179685-2
20-1000	AM-1526-1000	12	0.75	2:1	50	4.5	20	15	130	179685-1
20-1000	AM-1627-1000	28	0.5	2:1	50	4	19	15	220	179685-2
20-1000	AM-1373-1000	30	0.75	2:1	50	6	18	15	165	179685-2

## AMPLIFIERS BY FREQUENCY (CONT.)

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. (±dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
20-1000	AM-1537-1000	30	0.75	2:1	50	4.5	23	15	315	179685-2
20-1000	AM-1652-1000	41	0.5	2:1	50	3.6	14	15	95	179685-2
20-2000	AM-1526-2000	12	1	2:1	50	4.6	19	15	130	179685-1
20-2000	AM-1627-2000	28	1	2:1	50	4.8	17	15	220	179685-2
20-2000	AM-1373-2000	30	1.5	2:1	50	6	17	15	165	179685-2
20-2000	AM-1537-2000	30	1	2:1	50	5.4	20	15	315	179685-2
20-2000	AM-1652-2000	41	1	2:1	50	4	11	15	95	179685-2
20-2500	AM-1627-2500	28	1	2:1	50	5	16	15	220	179685-2
20-2500	AM-1652-2500	41	1.5	2:1	50	4.3	9	15	95	179685-2
20-3000	AM-1526-3000	12	1.5	2:1	50	5.2	15	15	130	179685-1
20-3000	AM-1573-3000	16	2	2:1	50	4.8	16	15	140	179685-1
20-3000	AM-1618-3000	20	2	2:1	50	4.3	8	15	60	179685-1
20-3000	AM-1373-3000	30	2	2:1	50	6	17	15	165	179685-2
20-3000	AM-1652-3000	41	1.75	2:1	50	4.8	8	15	95	179685-2
25-1500	AM-1372-1500	7	1	2:1	50	7	10	15	65	179685-1
30-500	AU-1340	38	0.75	2.2:1	50	2.2	21	15	285	179685-3
50-90	AU-1573-70	14	0.2	1.5:1	50	3.8	18	15	140	179685-1
50-90	AU-1049-70	14	0.2	1.5:1	50	2.7	10	15	40	179685-1
50-90	AU-1149-70	15	0.2	1.5:1	75	5	20	15	120	179685-1
50-90	AU-1616-70	20	0.2	1.3:1	50	3.2	14	15	60	179685-1
50-90	AU-1499-70	22	0.2	1.5:1	50	4	20	15	170	179685-2
50-90	AU-1021-70	24	0.2	1.5:1	50	2.5	20	15	175	179685-2
50-90	AU-1469S-70	28	0.2	1.5:1	50	7.5	20	15	240	179685-2
50-90	AU-1612S-70	28	0.2	1.5:1	50	2.3	19	15	150	179685-2
50-90	AU-1006-70	30	0.2	1.5:1	50	1.3	8	15	50	179685-2
50-90	AU-1358-70	30	0.2	1.5:1	50	3	20	15	190	179685-2
50-90	AU-1263-70	48	0.2	1.5:1	50	1.5	20	15	170	179685-3
50-500	AU-1679-500	43	1.8	2.2:1	50	0.8	19	15	135	179685-2
50-550	AU-1650	44	0.75	2:1	50	1.6	23	15	290	179685-3
50-2000	AM-1639	12	2	2:1	50	6	25	15	225	183042-1
50-2000	AM-1683-2000	13	1	2:1	50	5	17	15	100	179685-1
50-3000	AM-1683-3000	13	1.25	2:1	50	5.5	16	15	100	179685-1
50-3000	AM-1672	15	1.5	2:1	50	4.8	13	15	60	179685-1
100-180	AU-1049-140	14	0.2	1.5:1	50	2.7	10	15	40	179685-1
100-180	AU-1573-140	14	0.2	1.5:1	50	3.8	18	15	140	179685-1
100-180	AU-1149-140	15	0.2	1.5:1	75	6	20	15	120	179685-1
100-180	AU-1616-140	20	0.2	1.3:1	50	3.2	14	15	60	179685-1
100-180	AU-1499-140	22	0.2	1.5:1	50	4	20	15	170	179685-2
100-180	AU-1541-140	24	0.2	1.5:1	75	2.9	20	15	180	179685-2
100-180	AU-1469S-140	28	0.2	1.5:1	50	7.5	20	15	240	179685-2
100-180	AU-1092-140	29	0.2	1.5:1	75	4	20	15	185	179685-2
100-180	AU-1006-140	30	0.2	1.5:1	50	1.3	8	15	50	179685-2
100-180	AU-1358-140	30	0.2	1.5:1	50	3	20	15	190	179685-2
100-180	AU-1555-140	34	0.2	1.5:1	50	1.4	14	15	130	179685-3
100-180	AU-1263-140	48	0.2	1.5:1	50	1.5	20	15	170	179685-3
100-180	AU-1565-140	55	0.25	1.5:1	50/75	1.3	16	15	120	179685-3
100-550	AU-1330S	7	0.5	2:1	50	5	25	15	225	179685-1
100-1000	AM-1641	27	1.5	2:1	50	2.2	25	15	310	179685-2
150-1000	AM-1642	22	1.25	2:1	50	2.8	20	15	225	179685-2
150-1000	AM-1677-1000	25	0.5	2:1	50	3.7	26	15	350	179685-2
150-1000	AM-1409	38	0.5	2:1	50	2.4	20	15	280	179685-3
150-2000	AM-1677-2000	25	1	2:1	50	4.3	26	15	350	179685-2
150-2500	AM-1677-2500	25	1.5	2:1	50	4.8	26	15	350	179685-2
150-3000	AM-1677-3000	25	2	2:1	50	5	25	15	350	179685-2
200-1000	AM-1664-1000	14	0.5	2:1	50	3.3	25	15	235	179685-1
200-1000	AM-1631-2SH-1000	37	0.5	2:1	50	3.7	26	15	320	179685-2
200-2000	AM-1664-2000	13	0.75	2.2:1	50	3.5	25	15	235	179685-2
200-2000	AM-1645	26	4	2:1	50	2.4	15	15	150	179685-2
200-2000	AM-1631-2SH-2000	37	1	2:1	50	4.3	26	15	320	179685-2
200-2500	AM-1664-2500	13	1	2.2:1	50	3.7	25	15	235	179685-1
200-2500	AM-1631-2SH-2500	36	1.5	2:1	50	4.6	26	15	320	179685-2
200-3000	AM-1636	8	4	2:1	50	2.3	20	15	90	179685-1
200-3000	AM-1664-3000	12	1.75	2.2:1	50	3.8	24	15	235	179685-1
400-2000	AM-1670-0420	17	0.75	2:1	50	2.4	-5	15	55	179685-2
400-2000	AM-1674-0420	34	1	2:1	50	2.5	17	15	140	179685-3

## AMPLIFIERS BY FREQUENCY (CONT.)

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. (±dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
400-2000	AM-1682-0420	43	0.75	2:1	50	2.5	17	15	180	179685-3
400-2000	AM-1675-0420	49	1	2:1	50	2.4	19	15	180	179685-4
400-3000	AM-1653	56	2	2:1	50	4.2	11	15	190	179685-3
500-2000	AM-1522	11	1.25	2:1	50	2.9	17	15	110	179685-1
500-3000	AM-1614	45	1.5	2:1	50	4.2	17	15	225	179685-3
1000-1500	AM-1396	25	0.5	2:1	50	2.2	14	15	150	176592-3
1000-1500	AM-1312	33	0.75	2:1	50	3	20	15	210	179685-2
1000-2000	AM-1670-1020	17	0.5	2:1	50	2.4	9	15	55	179685-2
1000-2000	AM-1674-1020	34	0.5	2:1	50	2.5	17	15	140	179685-3
1000-2000	AM-1682-1020	43	0.5	2:1	50	2.5	17	15	180	179685-3
1000-2000	AM-1675-1020	49	0.75	2:1	50	2.4	19	15	180	179685-4

## MEDIUM POWER AMPLIFIERS

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. (±dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
0.01-400	AU-1565	55	0.75	2:1	50	1.4	16	15	120	179685-3
0.1-250	AU-1559	11	0.5	2:1	50	4.6	17	15	70	179685-1
0.1-1000	AM-1626-1000	20	0.75	2:1	50	3.8	16	15	95	179685-1
0.3-200	AU-1566	26	0.5	2:1	50	2.3	19	15	140	179685-2
0.3-1000	AM-1573-1000	17	0.75	2:1	50	3.8	20	15	125	179685-1
0.3-1000	AM-1663	30	0.75	2:1	50	3.7	20	15	165	179685-2
0.3-1000	AM-1469-1000	30	0.75	2:1	50	3.6	18	15	150	179685-2
0.3-1000	AM-1598-1000	32	1	2:1	50	3.8	16	15	135	179685-2
0.3-1000	AM-1622-1000	41	0.75	2:1	50	3.3	15	15	95	179685-2
0.3-1000	AM-1578	44	0.75	2:1	50	1.8	15	15	130	179685-3
0.3-1000	AM-1594-1000	51	1	2:1	50	3.4	17	15	180	179685-3
0.3-1000	AM-1646	59	1	2:1	50	1.8	15	15	165	179685-4
0.3-2000	AM-1573-2000	17	1.5	2:1	50	4.5	19	15	140	179685-1
0.3-2000	AM-1469-2000	30	1	2:1	50	4.3	17	15	150	179685-2
0.3-2000	AM-1598-2000	32	1.25	2:1	50	4.5	15	15	135	179685-2
0.3-2000	AM-1622-2000	41	1	2:1	50	3.7	12	15	95	179685-2
0.3-2000	AM-1594-2000	51	1.5	2:1	50	3.9	16	15	180	179685-3
0.3-2500	AM-1469-2500	30	1.25	2:1	50	4.6	17	15	150	179685-2
0.3-3000	AM-1594-3000	51	2.5	2:1	50	4.3	10	15	180	179685-3
0.5-500	AU-1263	48	0.5	2:1	50	1.4	20	15	170	179685-3
1-300	AU-1384	11	0.5	2.2:1	50	5.2	19	15	85	179685-1
1-300	AU-1525	61	0.75	2:1	50	1.3	20	15	225	179685-4
1-300	AU-1338	72	0.75	2:1	50	1.5	14	15	120	179685-4
1-400	AU-1421	24	0.5	2:1	50	3.6	19	15	150	179685-2
1-400	AU-1462	26	0.5	2:1	50	2.2	16	15	150	179685-2
1-500	AM-1610-500	36	0.5	1.5:1	50	2.9	20	15	160	179685-2
1-500	AU-1678	54	0.75	2:1	50	1.4	22	15	190	179685-3
1-1000	AM-1662-1000	12	0.75	2:1	50	4.5	20	15	130	179685-1
1-1000	AM-1603-1000	18	1	2:1	50	4.3	16	15	75	179685-1
1-1000	AM-1352-1000	20	0.5	2:1	50	3.8	17	15	100	179685-1
1-1000	AM-1412	35	0.75	2:1	50	1.8	15	15	150	179685-3
1-1000	AM-1610-1000	36	0.75	2:1	50	3.3	20	15	160	179685-2
1-1000	AM-1533	40	0.75	2:1	50	1.8	15	15	140	179685-3
1-2000	AM-1649	11	1	2:1	50	5.6	15	15	85	179685-1
1-2000	AM-1662-2000	12	1	2:1	50	4.7	18	15	130	179685-1
1-2000	AM-1352-2000	20	0.75	2:1	50	4.2	13	15	100	179685-1
1-2000	AM-1610-2000	36	1	2:1	50	3.5	18	15	160	179685-2
1-3000	AM-1662-3000	12	1.5	2:1	50	4.9	15	15	130	179685-1
5-200	AU-1612	30	0.5	2:1	50	2.8	19	15	140	179685-2
5-300	AU-1021	24	0.5	2:1	50	2.9	21	15	175	179685-2
5-300	AU-1561	24	0.5	2:1	50	5.5	22	15	240	179685-2
5-400	AU-1322	24	0.5	2:1	50	3.5	20	15	165	179685-2
5-1000	AM-1604S-1000	32	0.5	2:1	50	3.5	18	15	130	179685-2
5-1000	AM-1605	38	0.75	2:1	50	3.7	20	15	205	179685-2
5-1000	AM-1580	52	0.75	2:1	50	1.8	19	15	200	179685-3
5-1500	AM-1638	25	1	2:1	50	5	20	15	210	179685-2
5-2000	AM-1604S-2000	33	1.25	2:1	50	3.8	16	15	130	179685-2

## MEDIUM POWER AMPLIFIERS (CONT.)

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. (±dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
5-2500	AM-1358	30	1	2:1	50	3.8	20	15	160	179685-2
5-3000	AM-1604S-3000	33	2.5	2:1	50	4.4	15	15	130	179685-2
10-1000	AM-1601-1000	33	0.75	2:1	50	3.5	16	15	180	179685-2
10-1000	AM-1571	40	1	2:1	50	1.8	18	15	150	179685-3
10-1000	AM-1591-1000	50	0.75	2:1	50	3.4	18	15	170	179685-3
10-2000	AM-1601-2000	33	1	2:1	50	3.9	16	15	150	179685-2
10-2000	AM-1591-2000	50	1.25	2:1	50	3.9	18	15	170	179685-3
10-2500	AM-1601-2500	33	2	2:1	50	4.2	15	15	150	179685-2
10-2500	AM-1591-2500	50	1.5	2:1	50	3.9	17	15	170	179685-3
10-3000	AM-1601-3000	33	2.5	2:1	50	4.5	15	15	150	179685-2
15-1000	AM-1367-1000	38	0.5	2.2:1	50	5.2	19	15	260	179685-3
15-2000	AM-1367-2000	38	1	2.2:1	50	5.4	18	15	260	179685-3
15-3000	AM-1367-3000	38	2.5	2.2:1	50	5.9	15	15	260	179685-3
20-500	AU-1537-500	30	0.5	2:1	50	4	23	15	315	179685-2
20-1000	AM-1526-1000	12	0.75	2:1	50	4.5	20	15	130	179685-1
20-1000	AM-1627-1000	28	0.5	2:1	50	4	19	15	220	179685-2
20-1000	AM-1373-1000	30	0.75	2:1	50	6	18	15	165	179685-2
20-1000	AM-1537-1000	30	0.75	2:1	50	4.5	23	15	315	179685-2
20-2000	AM-1526-2000	12	1	2:1	50	4.6	19	15	130	179685-1
20-2000	AM-1627-2000	28	1	2:1	50	4.8	17	15	220	179685-2
20-2000	AM-1373-2000	30	1.5	2:1	50	6	17	15	165	179685-2
20-2000	AM-1537-2000	30	1	2:1	50	5.4	20	15	315	179685-2
20-2500	AM-1627-2500	28	1	2:1	50	5	16	15	220	179685-2
20-3000	AM-1526-3000	12	1.5	2:1	50	5.2	15	15	130	179685-1
20-3000	AM-1573-3000	16	2	2:1	50	4.8	16	15	140	179685-1
20-3000	AM-1373-3000	30	2	2:1	50	6	17	15	165	179685-2
30-500	AU-1340	38	0.75	2.2:1	50	2.2	21	15	285	179685-3
50-90	AU-1573-70	14	0.2	1.5:1	50	3.8	18	15	140	179685-1
50-90	AU-1149-70	15	0.2	1.5:1	75	5	20	15	120	179685-1
50-90	AU-1499-70	22	0.2	1.5:1	50	4	20	15	170	179685-2
50-90	AU-1021-70	24	0.2	1.5:1	50	2.5	20	15	175	179685-2
50-90	AU-1469S-70	28	0.2	1.5:1	50	7.5	20	15	240	179685-2
50-90	AU-1612S-70	28	0.2	1.5:1	50	2.3	19	15	150	179685-2
50-90	AU-1358-70	30	0.2	1.5:1	50	3	20	15	190	179685-2
50-90	AU-1263-70	48	0.2	1.5:1	50	1.5	20	15	170	179685-3
50-500	AU-1679-500	43	1.8	2.2:1	50	0.8	19	15	135	179685-2
50-550	AU-1650	44	0.75	2:1	50	1.6	23	15	290	179685-3
50-2000	AM-1639	12	2	2:1	50	6	25	15	225	183042-1
50-2000	AM-1683-2000	13	1	2:1	50	5	17	15	100	179685-1
50-3000	AM-1683-3000	13	1.25	2:1	50	5.5	16	15	100	179685-1
100-180	AU-1573-140	14	0.2	1.5:1	50	3.8	18	15	140	179685-1
100-180	AU-1149-140	15	0.2	1.5:1	75	6	20	15	120	179685-1
100-180	AU-1499-140	22	0.2	1.5:1	50	4	20	15	170	179685-2
100-180	AU-1541-140	24	0.2	1.5:1	75	2.9	20	15	180	179685-2
100-180	AU-1469S-140	28	0.2	1.5:1	50	7.5	20	15	240	179685-2
100-180	AU-1092-140	29	0.2	1.5:1	75	4	20	15	185	179685-2
100-180	AU-1358-140	30	0.2	1.5:1	50	3	20	15	190	179685-2
100-180	AU-1263-140	48	0.2	1.5:1	50	1.5	20	15	170	179685-3
100-180	AU-1565-140	55	0.25	1.5:1	75	1.3	16	15	120	179685-3
100-550	AU-1330S	7	0.5	2:1	50	5	25	15	225	179685-1
100-1000	AM-1641	27	1.5	2:1	50	2.2	25	15	310	179685-2
150-1000	AM-1642	22	1.25	2:1	50	2.8	20	15	225	179685-2
150-1000	AM-1677-1000	25	0.5	2:1	50	3.7	26	15	350	179685-2
150-1000	AM-1409	38	0.5	2:1	50	2.4	20	15	280	179685-3
150-2000	AM-1677-2000	25	1	2:1	50	4.3	26	15	350	179685-2
150-2500	AM-1677-2500	25	1.5	2:1	50	4.8	26	15	350	179685-2
150-3000	AM-1677-3000	25	2	2:1	50	5	25	15	350	179685-2
200-1000	AM-1664-1000	14	0.5	2:1	50	3.3	25	15	235	179685-1
200-1000	AM-1631-2SH-1000	37	0.5	2:1	50	3.7	26	15	320	179685-2
200-2000	AM-1664-2000	13	0.75	2.2:1	50	3.5	25	15	235	179685-2
200-2000	AM-1645	26	4	2:1	50	2.4	15	15	150	179685-2
200-2000	AM-1631-2SH-2000	37	1	2:1	50	4.3	26	15	320	179685-2
200-2500	AM-1664-2500	13	1	2.2:1	50	3.7	25	15	235	179685-1
200-2500	AM-1631-2SH-2500	36	1.5	2:1	50	4.6	26	15	320	179685-2
200-3000	AM-1636	8	4	2:1	50	2.3	20	15	90	179685-1
200-3000	AM-1664-3000	12	1.75	2.2:1	50	3.8	24	15	235	179685-1
400-2000	AM-1674-0420	34	1	2:1	50	2.5	17	15	140	179685-3
400-2000	AM-1682-0420	43	0.75	2:1	50	2.5	17	15	180	179685-3
400-2000	AM-1675-0420	49	1	2:1	50	2.4	19	15	180	179685-4
400-3000	AM-1653	56	2	2:1	50	4.2	11	15	190	179685-3



## MEDIUM POWER AMPLIFIERS (CONT.)

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. (±dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
500-2000	AM-1522	11	1.25	2:1	50	2.9	17	15	110	179685-1
500-3000	AM-1614	45	1.5	2:1	50	4.2	17	15	225	179685-3
1000-1500	AM-1312	33	0.75	2:1	50	3	20	15	210	179685-2
1000-2000	AM-1674-1020	34	0.5	2:1	50	2.5	17	15	140	179685-3
1000-2000	AM-1682-1020	43	0.5	2:1	50	2.5	17	15	180	179685-3
1000-2000	AM-1675-1020	49	0.75	2:1	50	2.4	19	15	180	179685-4

## SPECIAL APPLICATION AMPLIFIERS

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. (±dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
<b>LOW FREQUENCY AMPLIFIERS</b>										
0.001-400	AU-1442	35	0.5	2:1	50	1.3	8	15	45	179685-2
0.001-400	AU-1447	60	0.5	2:1	50	1.3	11	15	100	179685-3
0.001-500	AU-1414	14	0.5	2:1	50	3	7	15	40	179685-1
0.001-500	AU-1310	30	0.5	2:1	50	1.4	8	15	50	179685-2
0.001-500	AU-1332	51	0.5	2:1	50	1.4	12	15	110	179685-3
0.001-500	AU-1291	63	0.75	2:1	50	1.4	11	15	120	179685-4
0.001-1000	AM-1300	27	0.75	2:1	50	1.7	7	15	55	179685-2
0.001-1000	AM-1431	41	1	2:1	50	1.8	10	15	100	179685-3
0.001-1000	AM-1309	50	1	2.2:1	50	1.8	8	15	90	179685-4
0.01-300	AU-1547	18	0.5	2:1	50	2.6	8	15	35	179685-1
0.01-400	AU-1565	55	0.75	2:1	50	1.4	16	15	120	179685-3
0.01-1000	AM-1616-1000	20	0.75	2:1	50	3.4	14	15	60	179685-1
0.01-1000	AM-1666-1000	28	0.5	2:1	50	3.5	10	15	115	179685-2
0.01-1000	AM-1607-1000	40	0.5	2:1	50	3.3	13	15	100	179685-2
0.01-1000	AM-1634-1000	50	0.75	2:1	50	3.8	15	15	130	179685-3
0.01-1000	AM-1676	50	1	2:1	50	1.8	13	15	115	179685-3
0.01-1300	AM-1422	19	1	2.2:1	50	2.5	5	15	55	179685-2
0.01-1300	AM-1660	58	1	2:1	50	2.2	13	15	135	179685-4
0.01-2000	AM-1616-2000	20	1	2:1	50	3.8	11	15	60	179685-1
0.01-2000	AM-1666-2000	28	1	2.2:1	50	3.9	7	15	115	179685-2
0.01-2000	AM-1607-2000	40	1	2:1	50	3.8	11	15	100	179685-2
0.01-2000	AM-1634-2000	50	1.5	2:1	50	4.2	14	15	130	179685-3
0.01-2500	AM-1616-2500	20	1.25	2:1	50	4	9	15	60	179685-1
0.01-2500	AM-1666-2500	28	1.75	2.2:1	50	4.2	5	15	115	179685-2
0.01-2500	AM-1607-2500	40	1.5	2:1	50	4.3	8	15	100	179685-2
0.01-3000	AM-1616-3000	20	2	2:1	50	4.3	7	15	60	179685-1
0.01-3000	AM-1607-3000	40	2	2:1	50	4.6	7	15	100	179685-2
0.01-3000	AM-1634-3000	50	2	2:1	50	4.5	11	15	130	179685-3
0.1-250	AU-1559	11	0.5	2:1	50	4.6	17	15	70	179685-1
0.2-400	AU-1583	35	0.5	2:1	50	1.4	8	15	45	179685-2
0.2-1000	AM-1551	40	1	2:1	50	1.7	15	15	130	179685-3
0.3-200	AU-1566	26	0.5	2:1	50	2.3	19	15	140	179685-2
0.3-500	AU-3A-0150	52	0.5	2:1	50	1.4	12	15	95	179685-3
0.3-600	AU-1027	52	0.5	2:1	50	1.5	12	15	95	179685-3
0.3-1000	AM-2A-000110	28	0.75	2:1	50	1.8	8	15	55	179685-2
0.3-1000	AM-1598-1000	32	1	2:1	50	3.8	16	15	135	179685-2
0.3-1000	AM-3A-000110	37	1	2:1	50	1.8	15	15	135	179685-3
0.3-1000	AM-1622-1000	41	0.75	2:1	50	3.3	15	15	95	179685-2
0.3-1000	AM-1685	50	1	2:1	50	1.8	13	15	115	179685-3
0.3-1000	AM-1594-1000	51	1	2:1	50	3.4	17	15	180	179685-3
0.3-2000	AM-1598-2000	32	1.25	2:1	50	4.5	15	15	135	179685-2
0.3-2000	AM-1622-2000	41	1	2:1	50	3.7	12	15	95	179685-2
0.3-2000	AM-1594-2000	51	1.5	2:1	50	3.9	16	15	180	179685-3
0.3-2500	AM-1622-2500	41	1.25	2:1	50	4.5	10	15	95	179685-2
0.3-3000	AM-1594-3000	51	2.5	2:1	50	4.3	10	15	180	179685-3
0.7-400	AU-1579	35	0.5	2:1	50	1.3	7	15	45	179685-2

## SPECIAL APPLICATION AMPLIFIERS

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. (±dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
<b>SATCOM AMPLIFIERS</b>										
50-90	AU-1573-70	14	0.2	1.5:1	50	3.8	18	15	140	179685-1
50-90	AU-1049-70	14	0.2	1.5:1	50	2.7	10	15	40	179685-1
50-90	AU-1149-70	15	0.2	1.5:1	75	5	20	15	120	179685-1
50-90	AU-1616-70	20	0.2	1.3:1	50	3.2	14	15	60	179685-1
50-90	AU-1499-70	22	0.2	1.5:1	50	4	20	15	170	179685-2
50-90	AU-1021-70	24	0.2	1.5:1	50	2.5	20	15	175	179685-2
50-90	AU-1469S-70	28	0.2	1.5:1	50	7.5	20	15	240	179685-2
50-90	AU-1612S-70	28	0.2	1.5:1	50	2.3	19	15	150	179685-2
50-90	AU-1006-70	30	0.2	1.5:1	50	1.3	8	15	50	179685-2
50-90	AU-1358-70	30	0.2	1.5:1	50	3	20	15	190	179685-2
50-90	AU-1263-70	48	0.2	1.5:1	50	1.5	20	15	170	179685-3
100-180	AU-1049-140	14	0.2	1.5:1	50	2.7	10	15	40	179685-1
100-180	AU-1573-140	14	0.2	1.5:1	50	3.8	18	15	140	179685-1
100-180	AU-1149-140	15	0.2	1.5:1	75	6	20	15	120	179685-1
100-180	AU-1616-140	20	0.2	1.3:1	50	3.2	14	15	60	179685-1
100-180	AU-1499-140	22	0.2	1.5:1	50	4	20	15	170	179685-2
100-180	AU-1541-140	24	0.2	1.5:1	75	2.9	20	15	180	179685-2
100-180	AU-1469S-140	28	0.2	1.5:1	50	7.5	20	15	240	179685-2
100-180	AU-1092-140	29	0.2	1.5:1	75	4	20	15	185	179685-2
100-180	AU-1006-140	30	0.2	1.5:1	50	1.3	8	15	50	179685-2
100-180	AU-1358-140	30	0.2	1.5:1	50	3	20	15	190	179685-2
100-180	AU-1555-140	34	0.2	1.5:1	50	1.4	14	15	130	179685-3
100-180	AU-1263-140	48	0.2	1.5:1	50	1.5	20	15	170	179685-3
100-180	AU-1565-140	55	0.25	1.5:1	50/75	1.3	16	15	120	179685-3
<b>75 OHM AMPLIFIERS</b>										
50-90	AU-1149-70	15	0.2	1.5:1	75	5	20	15	120	179685-1
100-180	AU-1149-140	15	0.2	1.5:1	75	6	20	15	120	179685-1
100-180	AU-1541-140	24	0.2	1.5:1	75	2.9	20	15	180	179685-2
100-180	AU-1092-140	29	0.2	1.5:1	75	4	20	15	185	179685-2

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. (±dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
<b>WIDEBAND AMPLIFIERS</b>										
0.01-1300	AM-1660	58	1	2:1	50	2.2	13	15	135	179685-4
0.01-2000	AM-1616-2000	20	1	2:1	50	3.8	11	15	60	179685-1
0.01-2000	AM-1666-2000	28	1	2.2:1	50	3.9	7	15	115	179685-2
0.01-2000	AM-1607-2000	40	1	2:1	50	3.8	11	15	100	179685-2
0.01-2000	AM-1634-2000	50	1.5	2:1	50	4.2	14	15	130	179685-3
0.01-2500	AM-1616-2500	20	1.25	2:1	50	4	9	15	60	179685-1
0.01-2500	AM-1666-2500	28	1.75	2.2:1	50	4.2	5	15	115	179685-2
0.01-2500	AM-1607-2500	40	1.5	2:1	50	4.3	8	15	100	179685-2
0.01-3000	AM-1616-3000	20	2	2:1	50	4.3	7	15	60	179685-1
0.01-3000	AM-1607-3000	40	2	2:1	50	4.6	7	15	100	179685-2
0.01-3000	AM-1634-3000	50	2	2:1	50	4.5	11	15	130	179685-3
0.1-2000	AM-1626-2000	20	1	2:1	50	4.2	14	15	95	179685-1
0.3-2000	AM-1573-2000	17	1.5	2:1	50	4.5	19	15	140	179685-1
0.3-2000	AM-1469-2000	30	1	2:1	50	4.3	17	15	150	179685-2
0.3-2000	AM-1622-2000	41	1	2:1	50	3.7	12	15	95	179685-2
0.3-2000	AM-1594-2000	51	1.5	2:1	50	3.9	16	15	180	179685-3
0.3-2500	AM-1469-2500	30	1.25	2:1	50	4.6	17	15	150	179685-2
0.3-2500	AM-1622-2500	41	1.25	2:1	50	4.5	10	15	95	179685-2
0.3-3000	AM-1594-3000	51	2.5	2:1	50	4.3	10	15	180	179685-3
1-500	AM-1610-500	36	0.5	1.5:1	50	2.9	20	15	160	179685-2
1-1000	AM-1185-1000	28	0.5	2:1	50	3.6	11	15	115	179685-2
1-1500	AM-2A-000115	18	1	2:1	50	3.5	7	15	50	179685-2
1-1500	AM-3A-000115	35	1.25	2:1	50	2.5	13	15	120	179685-3
1-1500	AM-4A-000115	40	1.5	2.2:1	50	2.4	9	15	110	179685-4
1-2000	AM-1649	11	1	2:1	50	5.6	15	15	85	179685-1
1-2000	AM-1662-2000	12	1	2:1	50	4.7	18	15	130	179685-1
1-2000	AM-1352-2000	20	0.75	2:1	50	4.2	13	15	100	179685-1
1-2000	AM-1185-2000	31	1	2:1	50	4.5	9	15	100	179685-2
1-2000	AM-1610-2000	36	1	2:1	50	3.5	18	15	160	179685-2
1-2500	AM-1352-2500	20	1	2:1	50	4.7	13	15	100	179685-1
1-2500	AM-1185-2500	28	1.75	2:1	50	4.5	6	15	115	179685-2
1-3000	AM-1662-3000	12	1.5	2:1	50	4.9	15	15	130	179685-1
5-1500	AM-1638	25	1	2:1	50	5	20	15	210	179685-2
5-1500	AM-4A-000515	41	1.25	2.2:1	50	2.2	9	15	95	179685-4

## SPECIAL APPLICATION AMPLIFIERS (CONT.)

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. ( $\pm$ dB) (Max.)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
<b>WIDEBAND AMPLIFIERS</b>										
5-2000	AM-1604S-2000	33	1.25	2:1	50	3.8	16	15	130	179685-2
5-2000	AM-1599-2000	40	1	2:1	50	3.9	11	15	100	179685-2
5-2500	AM-1599-2500	40	1.5	2:1	50	4.3	9	15	100	179685-2
5-3000	AM-1604S-3000	33	2.5	2:1	50	4.4	15	15	130	179685-2
10-2000	AM-1618-2000	21	0.75	2:1	50	3.6	12	15	60	179685-1
10-2000	AM-1601-2000	33	1	2:1	50	3.9	16	15	150	179685-2
10-2000	AM-1591-2000	50	1.25	2:1	50	3.9	18	15	170	179685-3
10-2500	AM-1618-2500	21	1.5	2:1	50	3.9	10	15	60	179685-1
10-2500	AM-1601-2500	33	2	2:1	50	4.2	15	15	150	179685-2
10-2500	AM-1591-2500	50	1.5	2:1	50	3.9	17	15	170	179685-3
10-3000	AM-1601-3000	33	2.5	2:1	50	4.5	15	15	150	179685-2
15-2000	AM-1367-2000	38	1	2.2:1	50	5.4	18	15	260	179685-3
15-3000	AM-1367-3000	38	2.5	2.2:1	50	5.9	15	15	260	179685-3
20-2000	AM-1526-2000	12	1	2:1	50	4.6	19	15	130	179685-1
20-2000	AM-1627-2000	28	1	2:1	50	4.8	17	15	220	179685-2
20-2000	AM-1373-2000	30	1.5	2:1	50	6	17	15	165	179685-2
20-2000	AM-1652-2000	41	1	2:1	50	4	11	15	95	179685-2
20-2500	AM-1627-2500	28	1	2:1	50	5	16	15	220	179685-2
20-2500	AM-1652-2500	41	1.5	2:1	50	4.3	9	15	95	179685-2
20-3000	AM-1526-3000	12	1.5	2:1	50	5.2	15	15	130	179685-1
20-3000	AM-1573-3000	16	2	2:1	50	4.8	16	15	140	179685-1
20-3000	AM-1618-3000	20	2	2:1	50	4.3	8	15	60	179685-1
20-3000	AM-1373-3000	30	2	2:1	50	6	17	15	165	179685-2
20-3000	AM-1652-3000	41	1.75	2:1	50	4.8	8	15	95	179685-2
25-1500	AM-1372-1500	7	1	2:1	50	7	10	15	65	179685-1
50-2000	AM-1639	12	2	2:1	50	6	25	15	225	179685-1
50-2000	AM-1683-2000	13	1	2:1	50	5	17	15	100	179685-1
50-3000	AM-1683-3000	13	1.25	2:1	50	5.5	16	15	100	179685-1
50-3000	AM-1672	15	1.5	2:1	50	4.8	13	15	60	179685-1
150-2000	AM-1677-2000	25	1	2:1	50	4.3	26	15	350	179685-2
150-2500	AM-1677-2500	25	1.5	2:1	50	4.8	26	15	350	179685-2
150-3000	AM-1677-3000	25	2	2:1	50	5	25	15	350	179685-2
200-2000	AM-1664-2000	13	0.75	2.2:1	50	3.5	25	15	235	179685-2
200-2000	AM-1645	26	4	2:1	50	2.4	15	15	150	179685-2
200-2000	AM-1631-2SH-2000	37	1	2:1	50	4.3	26	15	320	179685-2
200-2500	AM-1664-2500	13	1	2.2:1	50	3.7	25	15	235	179685-1
200-2500	AM-1631-2SH-2500	36	1.5	2:1	50	4.6	26	15	320	179685-2
200-3000	AM-1636	8	4	2:1	50	2.3	20	15	90	179685-1
200-3000	AM-1664-3000	12	1.75	2.2:1	50	3.8	24	15	235	179685-1
400-3000	AM-1653	56	2	2:1	50	4.2	11	15	190	179685-3

FREQUENCY (MHz)	MODEL NUMBER	GAIN (dB) (Min.)	VAR. ( $\pm$ dB) (Max.)	RE-COVERY ( $\mu$ Sec)	VSWR (Max.)	IMPED. IN/OUT (Ohms)	NOISE FIGURE (dB, Typ.)	P1 dB (dBm) (Typ.)	VOLTS	NOM. DC POWER (mA)	OUTLINE NO.
<b>FAST RECOVERY NMR AMPLIFIERS</b>											
0.2-400	AU-1583	35	0.5	20	2:1	50	1.4	8	15	45	179685-2
0.4-400	AU-1658	35	0.5	20	2.2:1	50	1.3	7	15	45	179685-2
0.7-400	AU-1579	35	0.5	7	2:1	50	1.3	7	15	45	179685-2
5-400	AU-1322	24	0.5	1	2:1	50	3.5	20	15	165	179685-2
5-400	AU-1466	36	0.5	2	2:1	50	1.3	8	15	50	179685-2
5-500	AU-1611	14	0.5	1	2:1	50	3	10	15	40	179685-1
5-500	AU-1114	33	0.5	2	2:1	50	1.4	8	15	55	179685-2
5-500	AU-1313	44	0.5	2	2:1	50	1.4	9	15	70	179685-3
5-600	AU-1467	63	1	2	2:1	50	1.6	12	15	140	179685-4
5-1000	AM-1581	26	0.75	3	2:1	50	1.8	7	15	55	179685-2

NOTE: All NMR amplifiers have the following features:

- Input crossed diode protection
- Fast recovery time
- No internal ferrites - may be used in a high magnetic field

Typical Recovery Time For Individual Models:

- AU-1583 (25  $\mu$ sec)
- AU-1611 (1.0  $\mu$ sec)
- AM-1581 (3.0  $\mu$ sec)
- AU-1467 (1.6  $\mu$ sec)
- AU-1313 (2.0  $\mu$ sec)
- AU-1579 (7.0  $\mu$ sec)
- AU-1114 (1.5  $\mu$ sec)
- AU-1466 (1.1  $\mu$ sec)
- AU-1322 (1.0  $\mu$ sec)
- AU-1658 (2.0  $\mu$ sec)

These amplifiers have been designed for NMR / MRI type applications where there is a large RF pulse that occurs prior to the signal of interest. Most models will recover in less than 3  $\mu$ sec after the end of the pulse. Many of the amplifiers that were previously specified only to 10 MHz are now flat down to about 3 MHz. All units have input diode limiters and can withstand an RF level of +30 dBm CW or 20V p-p pulse. Most models are available with a lower frequency range, but with a slightly longer recovery time. Please contact MITEQ.

## AMPLIFIERS BY MODEL NUMBER

MODEL NUMBER	FREQUENCY (MHz)	MODEL NUMBER	FREQUENCY (MHz)	MODEL NUMBER	FREQUENCY (MHz)
AM-1185-1000	1-1000	AM-1601-1000	10-1000	AM-1660	0.001-1300
AM-1185-2000	1-2000	AM-1601-2000	10-2000	AM-1662-1000	1-1000
AM-1185-2500	1-2500	AM-1601-2500	10-2500	AM-1662-2000	1-2000
AM-1300	0.001-1000	AM-1601-3000	10-3000	AM-1662-3000	1-3000
AM-1309	0.001-1000	AM-1603-1000	1-1000	AM-1663	0.3-1000
AM-1312	1000-1500	AM-1604-1000	5-1000	AM-1664-1000	200-1000
AM-1352-1000	1-1000	AM-1604-2000	5-2000	AM-1664-2000	200-2000
AM-1352-2000	1-2000	AM-1604-3000	5-3000	AM-1664-2500	200-2500
AM-1352-2500	1-2500	AM-1605	5-1000	AM-1664-3000	200-3000
AM-1358	5-2000	AM-1607-1000	0.01-1000	AM-1666-1000	0.01-1000
AM-1367-1000	15-1000	AM-1607-2000	0.01-2000	AM-1666-2000	0.01-2000
AM-1367-2000	15-2000	AM-1607-2500	0.01-2500	AM-1666-2500	0.01-2000
AM-1367-3000	15-3000	AM-1607-3000	0.01-3000	AM-1670-0420	400-2000
AM-1372-1500	25-1500	AM-1610-1000	1-1000	AM-1670-1020	1000-2000
AM-1373-1000	50-1000	AM-1610-2000	1-2000	AM-1672	50-3000
AM-1373-2000	50-2000	AM-1610-500	1-500	AM-1674-0420	400-2000
AM-1373-3000	50-3000	AM-1614	500-3000	AM-1674-1020	1000-2000
AM-1396	1000-1500	AM-1616-1000	0.01-1000	AM-1675-0420	400-2000
AM-1409	150-1000	AM-1616-2000	0.01-2000	AM-1675-1020	1000-2000
AM-1412	1-1000	AM-1616-2500	0.01-2500	AM-1676	0.01-1000
AM-1422	0.01-1300	AM-1616-3000	0.01-3000	AM-1677-1000	150-1000
AM-1431	0.001-1000	AM-1618-1000	10-1000	AM-1677-2000	150-2000
AM-1469-1000	1-1000	AM-1618-2000	10-2000	AM-1677-2500	150-2500
AM-1469-2000	1-2000	AM-1618-2500	10-2500	AM-1677-3000	150-3000
AM-1469-2500	0.3-2500	AM-1618-3000	10-3000	AM-1682-0420	400-2000
AM-1522	500-2000	AM-1622-1000	0.3-1000	AM-1682-1020	1000-2000
AM-1526-1000	20-1000	AM-1622-2000	0.3-2000	AM-1683-2000	50-2000
AM-1526-2000	20-2000	AM-1622-2500	0.3-2500	AM-1683-3000	50-3000
AM-1526-3000	20-3000	AM-1626-1000	0.1-1000	AM-1685	0.3-1000
AM-1533	1-1000	AM-1626-2000	0.1-2000	AM-2A-000110	1-1000
AM-1537-1000	20-1000	AM-1627-1000	20-1000	AM-2A-000115	1-1500
AM-1537-2000	20-2000	AM-1627-2000	20-2000	AM-2A-0510	500-1000
AM-1551	0.2-1000	AM-1627-2500	20-2500	AM-2A-0515	500-1500
AM-1571	10-1000	AM-1631-2SH-1000	200-1000	AM-3A-000110	0.3-1000
AM-1573-1000	0.3-1000	AM-1631-2SH-2000	200-2000	AM-3A-000115	1-1500
AM-1573-2000	0.3-2000	AM-1631-2SH-2500	200-2500	AM-4A-000115	1-1500
AM-1573-3000	20-3000	AM-1634-1000	0.01-1000	AM-4A-000515	5-1500
AM-1578	0.3-1000	AM-1634-2000	0.01-2000	AU-1006	1-600
AM-1580	5-1000	AM-1634-3000	0.01-3000	AU-1006-140	100-180
AM-1581	5-1000	AM-1636	200-3000	AU-1006-70	50-90
AM-1591-1000	10-1000	AM-1638	5-1500	AU-1021	5-300
AM-1591-2000	10-2000	AM-1639	50-2000	AU-1021-70	50-90
AM-1591-2500	10-2500	AM-1641	100-1000	AU-1027	0.3-600
AM-1594-1000	0.3-1000	AM-1642	150-1000	AU-1046	1-300
AM-1594-2000	0.3-2000	AM-1645	200-2000	AU-1049-140	100-180
AM-1594-3000	0.3-3000	AM-1646	0.3-1000	AU-1049-70	50-90
AM-1598-1000	0.3-1000	AM-1649	1-2000	AU-1092-140	100-180
AM-1598-2000	0.3-2000	AM-1652-1000	20-1000	AU-1114	5-500
AM-1599-1000	5-1000	AM-1652-2000	20-2000	AU-1149	10-100
AM-1599-2000	5-2000	AM-1652-2500	20-2500	AU-1149-140	100-180
AM-1599-2500	5-2500	AM-1652-3000	20-3000	AU-1149-70	50-90
		AM-1653	400-3000		

## AMPLIFIERS BY MODEL NUMBER (CONT.)

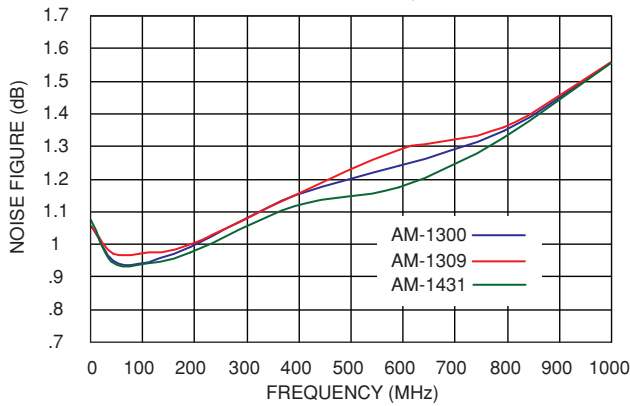
MODEL NUMBER	FREQUENCY (MHz)	MODEL NUMBER	FREQUENCY (MHz)	MODEL NUMBER	FREQUENCY (MHz)
AU-1263	0.5–500	AU-1466	5–400	AU-1583	0.2–400
AU-1263-140	100–180	AU-1467	5–500	AU-1611	5–500
AU-1263-70	50–90	AU-1469S-140	100–180	AU-1612	5–200
AU-1291	0.001–500	AU-1469S-70	50–90	AU-1612S-70	50–90
AU-1310	0.001–500	AU-1499-140	100–180	AU-1616-140	100–180
AU-1313	5–500	AU-1499-70	50–90	AU-1616-70	50–90
AU-1322	5–400	AU-1519	0.3–400	AU-1650	50–550
AU-1330S	100–550	AU-1525	1–300	AU-1658	0.4–400
AU-1332	0.001–500	AU-1537-500	20–500	AU-1678	1–500
AU-1338	1–300	AU-1541-140	100–180	AU-1679-500	50–500
AU-1340	30–500	AU-1543	1–500	AU-1A-0150	1–500
AU-1358-140	100–180	AU-1547	0.01–300	AU-2A-0150	1–500
AU-1358-70	50–90	AU-1555-140	100–180	AU-3A-0150	0.3–500
AU-1384	1–300	AU-1559	0.1–250		
AU-1414	0.01–500	AU-1561	5–300		
AU-1421	1–400	AU-1565	0.01–400		
AU-1433	0.3–200	AU-1565-140	100–180		
AU-1442	0.001–400	AU-1566	0.3–200		
AU-1447	0.001–350	AU-1573-140	100–180		
AU-1462	1–400	AU-1573-70	50–90		
AU-1464	1–400	AU-1579	0.7–400		

All units are shipped with type SMA-female connectors. We offer BNC female or N female as standard options for all outlines. Type N male is available upon special request. For special connector option, add the connector type after the model number. Example: AU-1138-70-BNC.

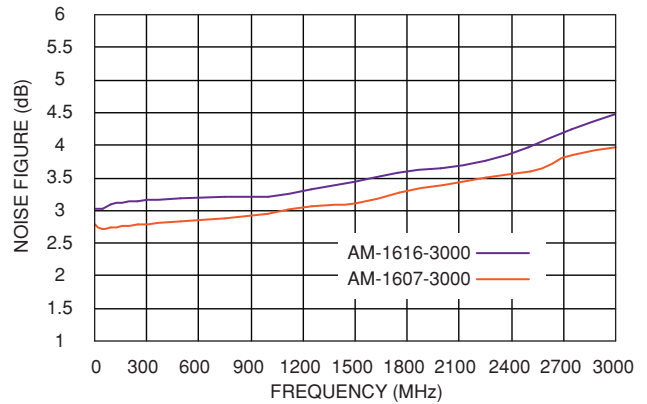
All units using drawing 176592 and 179685 are also available with an integrated 100 – 240 volt, 47 – 440 Hz, internally-fused AC supply. The power supply is equipped with a six-foot line cord, indicator lamp and on/off switch. Please add -1179 after the model number. Example: AU-1579-1179. Refer to drawings 176599, 176600 and 182866 for dimensions.

# TYPICAL AMPLIFIER PERFORMANCE CURVES

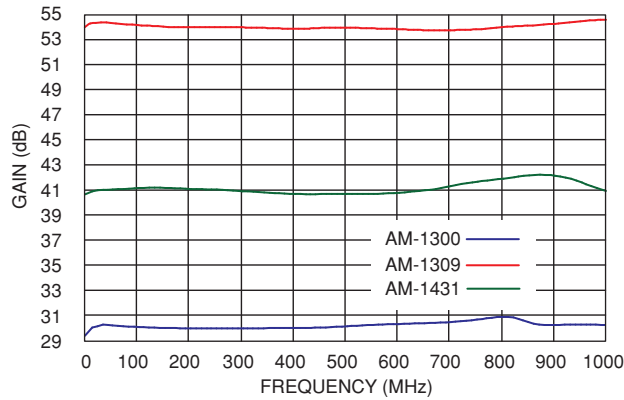
**0-1000 MHz AMPLIFIERS  
NOISE FIGURE vs FREQUENCY**



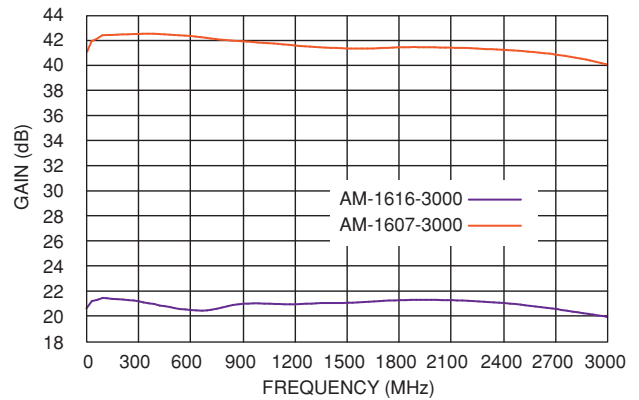
**0-3000 MHz AMPLIFIERS  
NOISE FIGURE vs FREQUENCY**



**GAIN vs FREQUENCY**

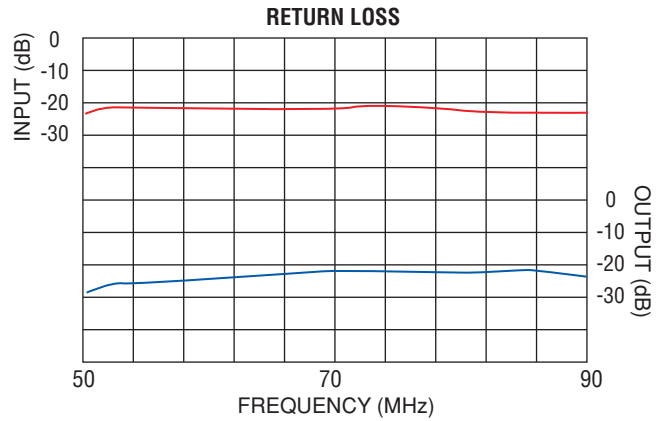
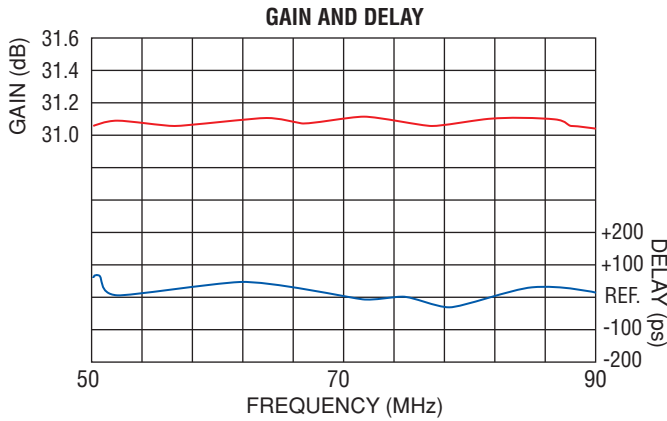


**GAIN vs FREQUENCY**

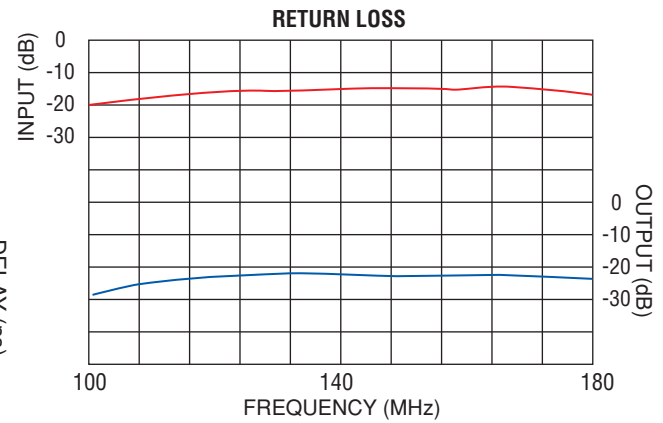
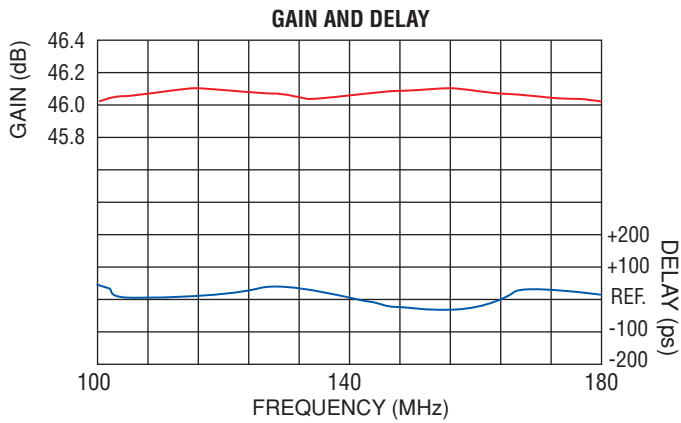


# TYPICAL AMPLIFIER PERFORMANCE CURVES (CONT.)

## SATCOM AMPLIFIERS 50 - 90 MHz

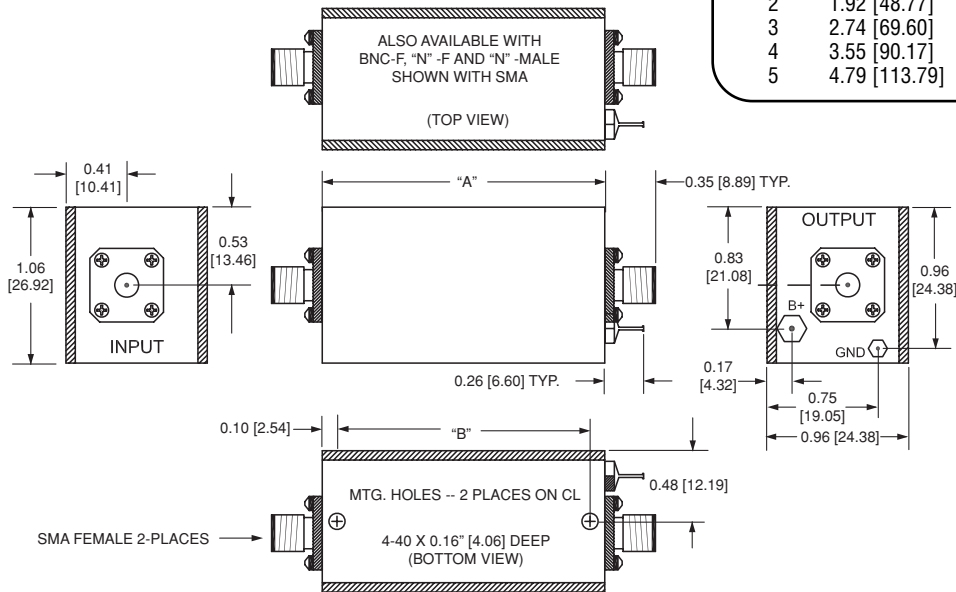


## SATCOM AMPLIFIERS 100 - 180 MHz



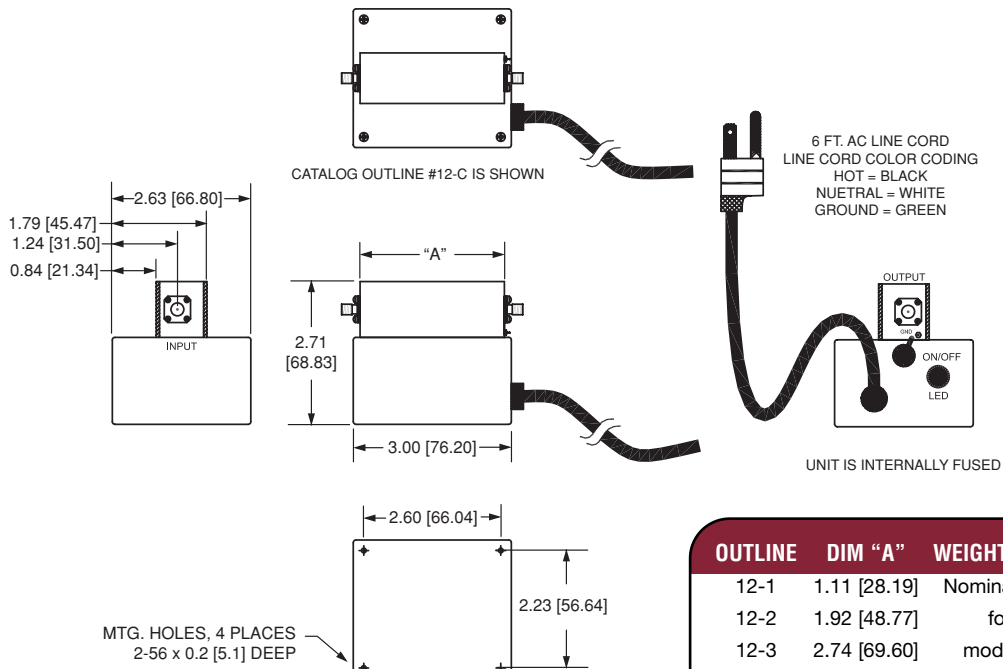
# OUTLINE DRAWINGS

## 176592



OUTLINE	DIM A	DIM B	OUNCES
1	1.11 [28.19]	0.91 [23.11]	1.5
2	1.92 [48.77]	1.72 [43.69]	2.2
3	2.74 [69.60]	2.54 [64.52]	2.9
4	3.55 [90.17]	3.35 [85.09]	3.7
5	4.79 [113.79]	4.28 [108.71]	4.5

## 176599



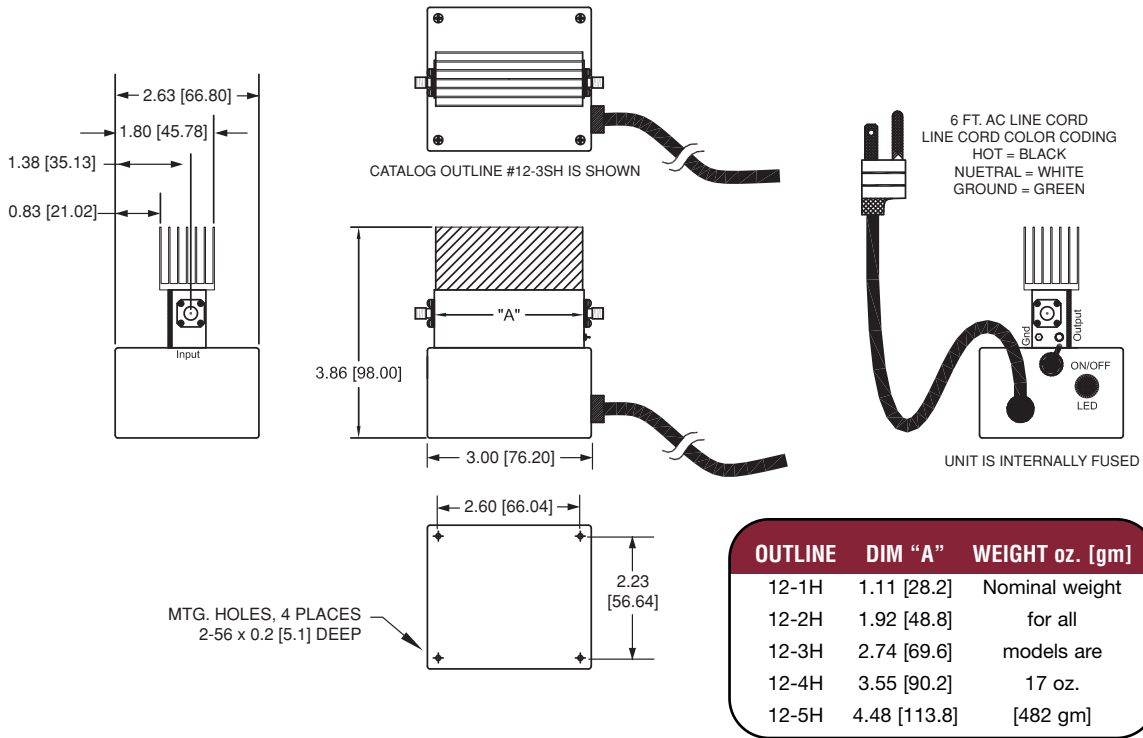
OUTLINE	DIM "A"	WEIGHT oz. [gm]
12-1	1.11 [28.19]	Nominal weight
12-2	1.92 [48.77]	for all
12-3	2.74 [69.60]	models are
12-4	3.55 [90.17]	17 oz.
12-5	4.48 [113.79]	[482 gm]

NOTE: DIMENSIONS SHOWN IN BRACKETS [ ] ARE IN MILLIMETERS.

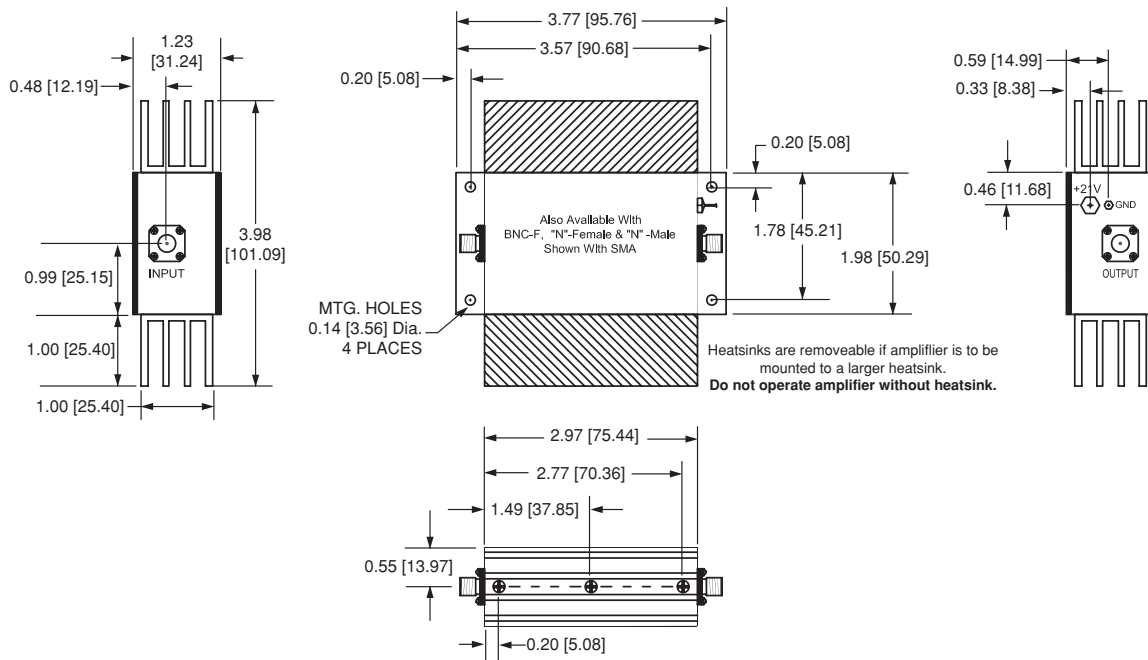


# OUTLINE DRAWINGS (CONT.)

## 176600



## 176601

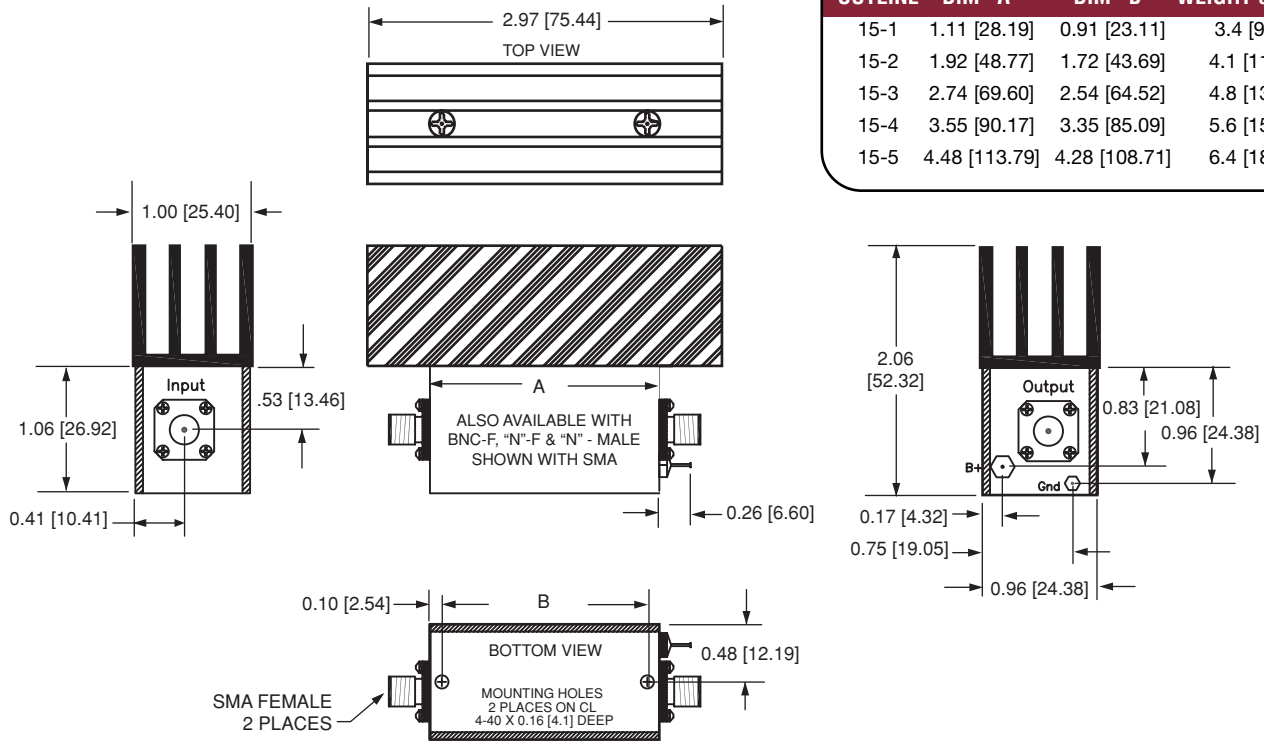


NOTE: DIMENSIONS SHOWN IN BRACKETS [ ] ARE IN MILLIMETERS.



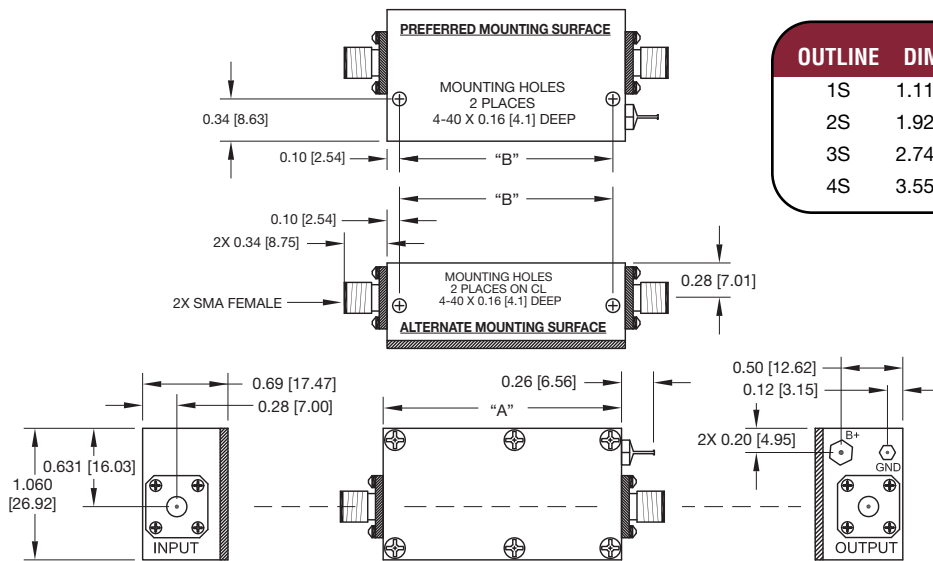
# OUTLINE DRAWINGS (CONT.)

## 176602



OUTLINE	DIM "A"	DIM "B"	WEIGHT oz. [gm]
15-1	1.11 [28.19]	0.91 [23.11]	3.4 [96.4]
15-2	1.92 [48.77]	1.72 [43.69]	4.1 [116.2]
15-3	2.74 [69.60]	2.54 [64.52]	4.8 [136.1]
15-4	3.55 [90.17]	3.35 [85.09]	5.6 [158.8]
15-5	4.48 [113.79]	4.28 [108.71]	6.4 [181.4]

## 179685



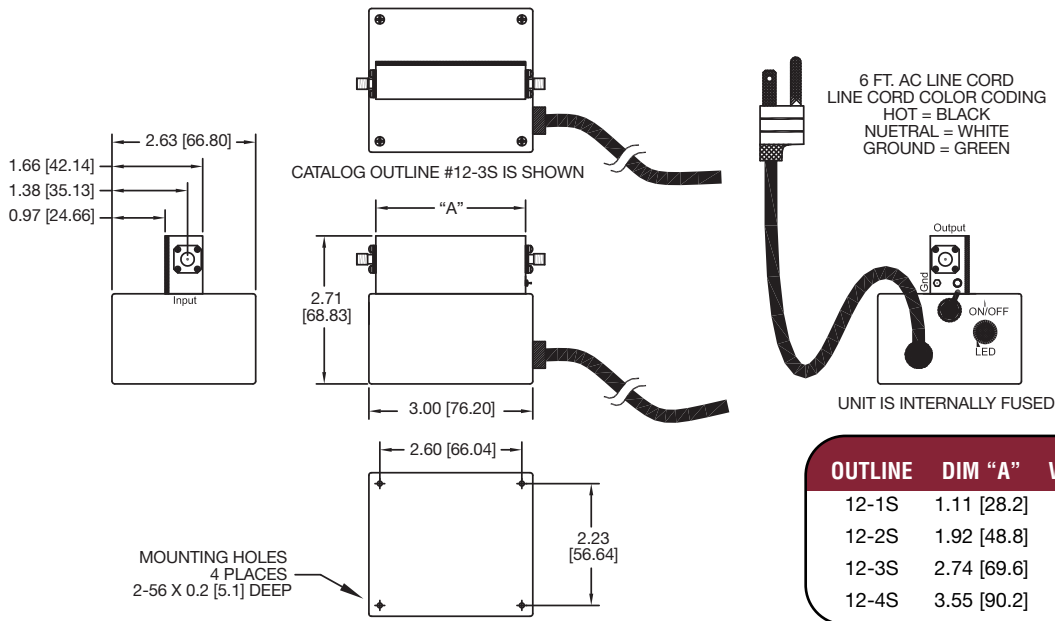
OUTLINE	DIM "A"	DIM "B"	WEIGHT oz. [gm]
1S	1.11 [28.2]	0.91 [23.1]	1.2 [34]
2S	1.92 [48.8]	1.72 [43.7]	1.8 [50]
3S	2.74 [69.6]	2.54 [64.5]	2.3 [66]
4S	3.55 [90.2]	3.35 [85.1]	3.0 [84]

NOTE: OPTIONALLY AVAILABLE WITH BNC-FEMALE, N-FEMALE AND N-MALE CONNECTORS.

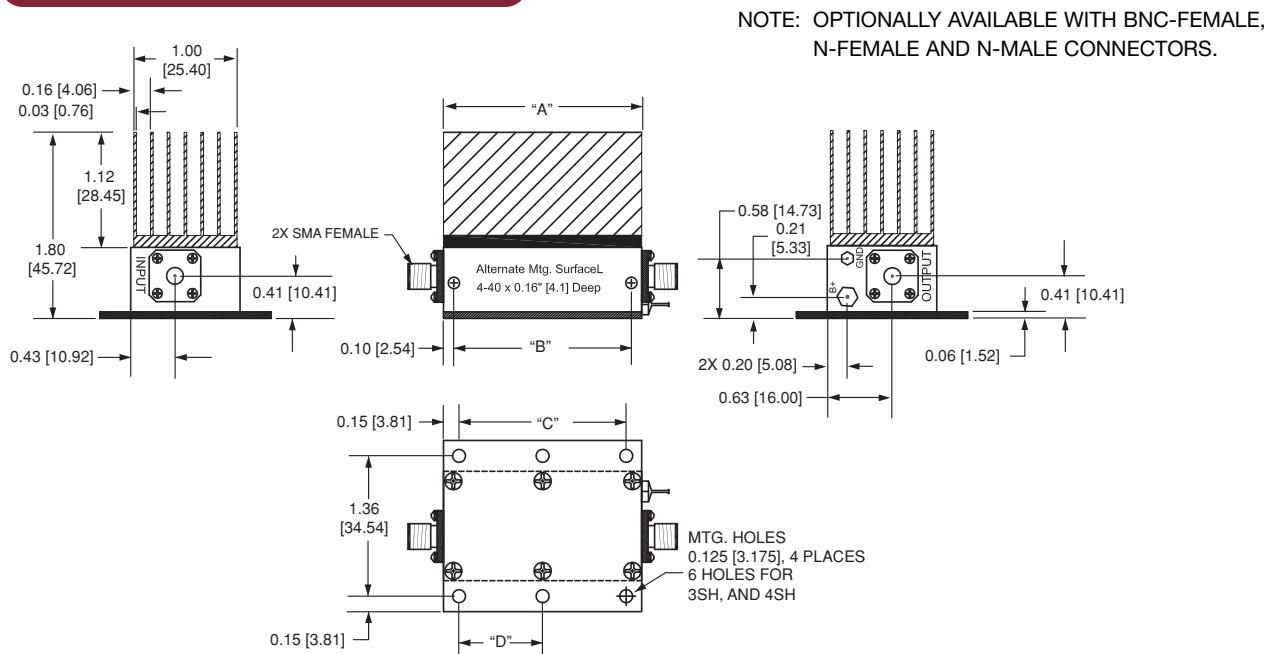
NOTE: DIMENSIONS SHOWN IN BRACKETS [ ] ARE IN MILLIMETERS.

# OUTLINE DRAWINGS (CONT.)

## 182866



## 183042



OUTLINE	DIM "A"	DIM "B"	DIM "C"	DIM "D"	WEIGHT oz. [gm]
1SHM	1.11 [28.19]	0.91 [23.11]	0.81 [20.57]	N/A	3.4 [96.4]
2SHM	1.92 [48.77]	1.72 [43.69]	1.62 [41.15]	N/A	4.1 [116.2]
3SHM	2.74 [69.60]	2.54 [64.52]	2.44 [61.98]	1.22 [30.99]	4.8 [136.1]
4SHM	3.55 [90.17]	3.35 [85.09]	3.25 [82.55]	1.62 [41.15]	5.6 [158.8]

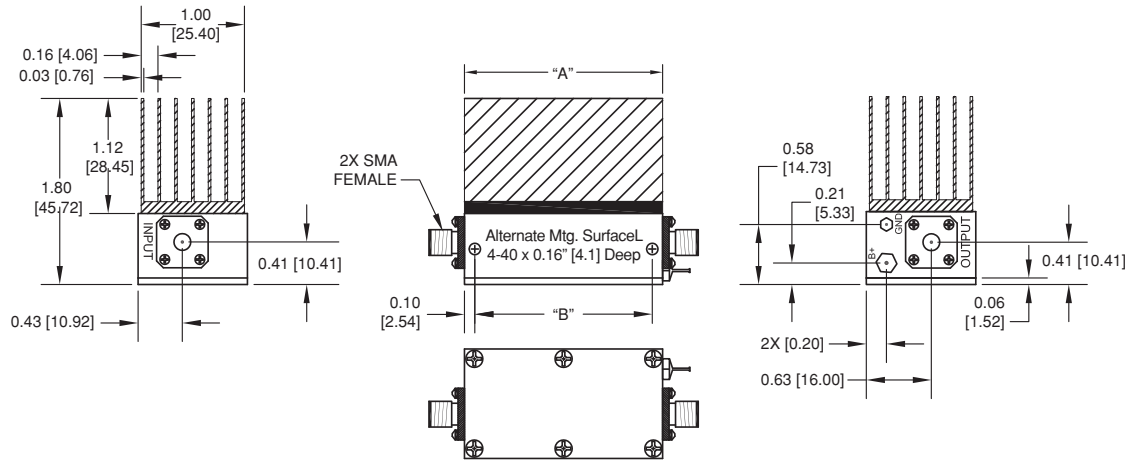
NOTE: DIMENSIONS SHOWN IN BRACKETS [ ] ARE IN MILLIMETERS.



# OUTLINE DRAWINGS (CONT.)

## 189710

NOTE: OPTIONALLY AVAILABLE WITH BNC-FEMALE, N-FEMALE AND N-MALE CONNECTORS.



OUTLINE	DIM "A"	DIM "B"	WEIGHT oz. [gm]
1SH	1.11 [28.19]	0.91 [23.11]	3.4 [96.4]
2SH	1.92 [48.77]	1.72 [43.69]	4.1 [116.2]
3SH	2.74 [69.60]	2.54 [64.52]	4.8 [136.1]
4SH	3.55 [90.17]	3.35 [85.09]	5.6 [158.8]

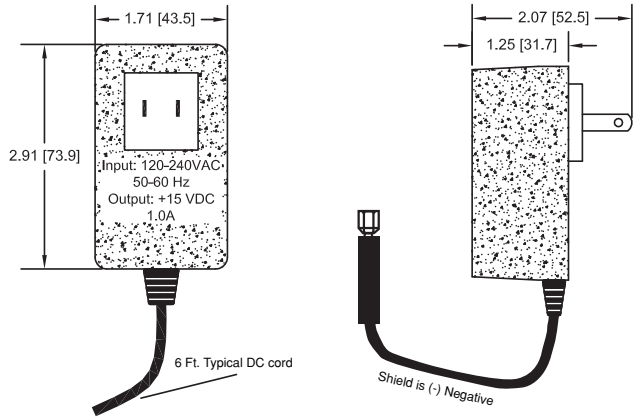
NOTE: DIMENSIONS SHOWN IN BRACKETS [ ] ARE IN MILLIMETERS.



# OUTLINE DRAWINGS (CONT.)

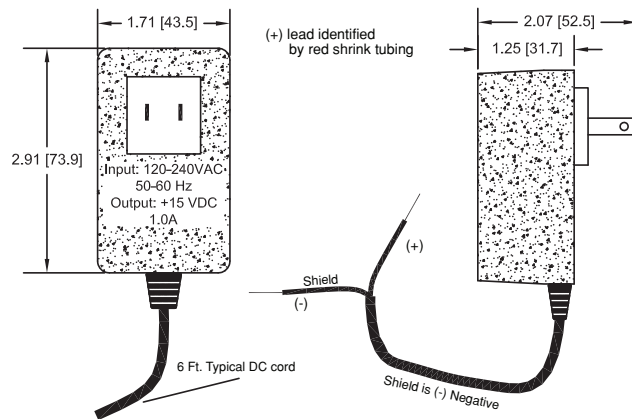
## WALL PLUG-IN POWER SUPPLIES

**1179SC**  
**AC Supply With SMC Connector**  
 (Available for outlines 176592, 176601 and 176602)

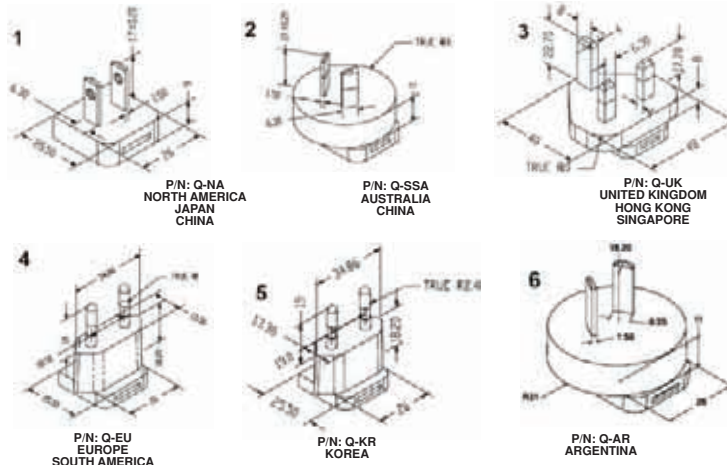


When ordering amplifiers with this power supply, the SMC connector will replace standard DC solder pin.

**205531-19**  
**AC Supply With Solder Leads**



These interchangeable plugs snap in and lock. Can be used with both 1179SC and 205531-19 outlines.



NOTE: DIMENSIONS SHOWN IN BRACKETS [ ] ARE IN MILLIMETERS.



## REPLACEMENT AMPLIFIERS FOR OBSOLETE MODELS

OLD MODEL NUMBER	REPLACEMENT MODEL NUMBER	OLD MODEL NUMBER	REPLACEMENT MODEL NUMBER
AM-1052	AM-2A-000110	AM-1538	AM-1573-1000
AM-1062	AM-1618-1000	AM-1539	AM-1603-1000
AM-1093-1000	AM-1358	AM-1544	AM-1373-2S-3000
AM-1125-1000	AM-1185-1000	AM-1554	AM-1373-2S-3000
AM-1125-1000	AM-1607-1000	AM-1556-0510	AM-1682-0420
AM-1125-1500	AM-1185-2000	AM-1556-0520	AM-1682-0420
AM-1125-1500	AM-1607-2000	AM-1556-1015	AM-1682-1020
AM-1141	AM-1649	AM-1564	AM-1185
AM-1185	AM-1185-2000	AM-1564	AM-1616-2000
AM-1297	AM-1300	AM-1564	AM-1607-2000
AM-1299	AM-3A-000110	AM-1569	AM-1352-2000
AM-1326	AM-1598	AM-1569	AM-1618-2000
AM-1326-3KHZ	AM-1598	AM-1585	AM-1373
AM-1331	AM-1412	AM-1585	AM-1604-2000
AM-1342	AM-2A-000110	AM-1585	AM-1604-3000
AM-1362-1000	AM-1573-1000	AM-1590	AM-1610
AM-1362-2000	AM-1573-2000	AM-1592	AM-1616-2000
AM-1364	AM-1616-2000	AM-1594	AM-1594-3000
AM-1367	AM-1367-3000	AM-1596-1000	AM-1662-1000
AM-1373	AM-1373-3000	AM-1596-2000	AM-1662-2000
AM-1377	AM-1412	AM-1596-3000	AM-1662-3000
AM-1385	AM-1618-1000	AM-1598	AM-1598-1000
AM-1388	AM-1603-1000	AM-1602	AM-1358
AM-1402	AM-1616-1000	AM-1604-1000	AM-1604S-1000
AM-1403	AM-1185-2000	AM-1604-2000	AM-1604S-2000
AM-1403	AM-1616-2000	AM-1604-3000	AM-1604S-3000
AM-1407	AM-1185-2000	AM-1610	AM-1610-2000
AM-1407	AM-1616-2000	AM-1617	AM-1674-0420
AM-1430	AM-1412	AM-1628-920	AM-1631-2SH-1000
AM-1455	NONE	AM-1631-1000	AM-1631-2SH-1000
AM-1463	AM-1352-1000	AM-1631-2000	AM-1631-2SH-2000
AM-1469S-1000	AM-1469-1000	AM-1631-2500	AM-1631-2SH-2500
AM-1469S-2000	AM-1469-2000	AM-1632	AM-3A-000110
AM-1472	AM-1352-2000	AM-1635-1000	AM-1664-1000
AM-1473	AM-1185-2000	AM-1635-2000	AM-1664-2000
AM-1473	AM-1469-2000	AM-1635-2500	AM-1664-2500
AM-1473	AM-1604-2000	AM-1635-3000	AM-1664-3000
AM-1475	AM-1412	AM-1656	AM-1641
AM-1477	AM-1674-1020	AM-2A-000515	AM-2A-000115
AM-1486	AM-1469-2500	AM-2A-0510	AM-2A-000110
AM-1487	AM-1616-2000	AM-2A-0515	AM-1670-0420
AM-1493	AM-2A-000110	AM-2A-0520	AM-1670-0420
AM-1497	AM-1300	AM-2A-1015	AM-2A-1020
AM-1503	AM-1607-2000	AM-2A-1020	AM-1670-1020
AM-1503-1500	AM-1607-2000	AM-3A-000515	AM-3A-000115
AM-1510	AM-1573-1000	AM-3A-0510	AM-1553
AM-1510	NONE	AM-3A-0515	AM-1674-0420
AM-1513	AM-1618-1000	AM-3A-0520	AM-1674-0420
AM-1518	AM-1412	AM-3A-1015	AM-3A-1020
AM-1523	NONE	AM-3A-1020	AM-1674-1020
AM-1524	AM-1603-1000	AM-4A-000110	AM-1685
AM-1526	AM-1526-3000	AM-4A-000515	AM-4A-000115
AM-1530	AM-1610-1000	AM-4A-0510	AM-1685
AM-1537-1800	AM-1537-2000	AM-4A-0515	AM-1682-0420

## REPLACEMENT AMPLIFIERS FOR OBSOLETE MODELS (CONT.)

OLD MODEL NUMBER	REPLACEMENT MODEL NUMBER	OLD MODEL NUMBER	REPLACEMENT MODEL NUMBER
AM-4A-0520	AM-1682-0420	AU-1125-500	AM-1607-1000
AM-4A-1015	AM-4A-1020	AU-1126	AU-1421
AM-4A-1015	AM-1682-1020	AU-1127-70	NONE
AM-4A-1020	AM-1682-1020	AU-1147-70	NONE
AM-5A-0515	AM-1675-0420	AU-1157	AU-1519
AM-5A-0520	AM-1675-0420	AU-1157-300	AU-1519
AM-5A-1020	AM-1675-1020	AU-1158	AM-1663
AMMIC-1019	NONE	AU-1158-140	AU-1663-140
AMMIC-1141	AM-1649	AU-1158-70	AU-1663-70
AMMIC-1141	AM-1526	AU-1180	AU-3A-0150
AMMIC-1141	AM-1596-1000	AU-1189	AU-1464
AMMIC-1141	AM-1372-1500	AU-1196-1000	NONE
AMMIC-1318	NONE	AU-1196-500	NONE
AMMIC-1348	AM-1649	AU-1204	AM-1580
AMMIC-1348	AM-1526	AU-1204-140	AM-1580
AMMIC-1386	AM-1526	AU-1204-70	AM-1580
AMMIC-1386	AM-1522	AU-1210	AM-1618-1000
AMMIC-1386	AM-1573-2000	AU-1214	AM-1573-1000
AMMIC-1386	AM-1618-2000	AU-1241-70	NONE
AMMIC-1420	AM-1649	AU-1261	AU-1310
AMMIC-1420	AM-1526	AU-1288	NONE
AMMIC-1420	AM-1596-2000	AU-1293	AU-1149-140
AMMIC-1427	AM-1569	AU-1301	AU-1114
AMMIC-1427	AM-1627-2000	AU-1303-140	AU-1049-140
AMMIC-1427	AM-1573-2000	AU-1303-70	AU-1049
AMMIC-1427	AM-1618-2000	AU-1327	AU-1114
AMP-1380	NONE	AU-1330	AU-1330S
AMP-1381	NONE	AU-1337	AM-1610-500
AMP-1389	NONE	AU-1337-200	AM-1610-500
AMP-1502	AM-1409	AU-1341	AU-3A-0150
AMP-1512	NONE	AU-1344	AU-1A-0150
AMX-1320	AM-1300	AU-1345-250	AM-1607-1000
AU-1001	AU-1362-70	AU-1345-500	AM-1607-1000
AU-1014	AM-1667	AU-1350	NONE
AU-1027	AU-3A-0150	AU-1360	AU-1586
AU-1027-140	AU-3A-0150	AU-1362	AM-1573-1000
AU-1027-70	AU-3A-0150	AU-1362-500	AM-1573-1000
AU-1045	AU-1263	AU-1362-70	AM-1573-1000
AU-1046-140	AU-1046	AU-1369	NONE
AU-1046-70	AU-1046	AU-1372	AM-1649
AU-1049-75-140	NONE	AU-1372-140	AM-1649
AU-1049-75-70	NONE	AU-1372-70	AM-1649
AU-1054	AU-2A-0150	AU-1376	AM-1663
AU-1055	AU-1464	AU-1378	AM-1046
AU-1055-400	AU-1464	AU-1379	AU-1A-0150
AU-1065-140	AU-1466-140	AU-1387	AU-1A-0150
AU-1065-70	AU-1027-70	AU-1415	AU-1263
AU-1067	AU-1A-0150	AU-1415-140	AU-1263
AU-1074	AU-4A-0150	AU-1415-70	AU-1263
AU-1092	AM-1358	AU-1426	AU-1A-0150
AU-1093-140	AU-1358-140	AU-1440-70	AU-1574-70
AU-1093-70	AU-1358-70	AU-1442-400	AU-1442
AU-1102	AU-1A-0150	AU-1447-140	AU-1447
AU-1114-0350	AU-1114	AU-1447-350	AU-1447
AU-1125-500	AM-1185-1000	AU-1447-70	AU-1447

## REPLACEMENT AMPLIFIERS FOR OBSOLETE MODELS (CONT.)

OLD MODEL NUMBER	REPLACEMENT MODEL NUMBER	OLD MODEL NUMBER	REPLACEMENT MODEL NUMBER
AU-1448	AU-1480	AU-1630	AU-1612-2S
AU-1459	AM-1598-1000	AU-1647	AU-1565
AU-1459	AU-1543	AU-1663-140	AM-1358
AU-1459-140	AU-1543	AU-1663-70	AM-1358
AU-1459-140	AM-1598-1000	AU-1667	AM-1358
AU-1459-70	AU-1543	AU-1A-0120	AU-1A-0150
AU-1459-70	AM-1598-1000	AU-1A-0520	AU-1046
AU-1464-400	AU-1464	AU-1A-1046	AU-1046
AU-1466-140	AU-1466	AU-1A-1049	AU-1049-70
AU-1466-400	AU-1466	AU-2A-0110	AU-1464
AU-1466-70	AU-1466	AU-2A-0120	AU-2A-0150
AU-1469-140	AU-1469S-140	AU-2A-1045	AU-2A-0150
AU-1469-70	AU-1469S-70	AU-2A-1138	NONE
AU-1476	AM-1551	AU-2A-1147	NONE
AU-1478	AU-1421	AU-2A-1158	AU-1663-70
AU-1480	AU-1313	AU-2A-1241	NONE
AU-1481	AU-1464	AU-2A-1288	NONE
AU-1481-400	AU-1464	AU-2A-1376	AM-1663
AU-1484	AU-2A-0150	AU-3A-0110	AU-1519
AU-1490	AM-1663	AU-3A-0120	AU-3A-0150
AU-1490	AM-1610-500	AU-3A-1045	AU-3A-0150
AU-1492	AM-1412	AU-3A-1204	AM-1580
AU-1494	AU-1519	AU-3A-1263	AU-1263-70
AU-1494-140	AU-1519	AU-4A-0110	AU-1519
AU-1494-300	AU-1519	AU-4A-0120	AU-4A-0150
AU-1494-70	AU-1519	AU-4A-0150	AU-1667
AU-1501	AU-1340	AUP-1224	AM-1610-500
AU-1503-500	AM-1607-1000	AUP-1374	NONE
AU-1510-140	NONE	AUP-1382	NONE
AU-1510-70	NONE	AUP-1383	NONE
AU-1534	AU-1310	AUP-1479	NONE
AU-1537	AU-1537-500	AUP-1495	NONE
AU-1537-2S	AU-1537-500	AUP-1496	NONE
AU-1538-140	AU-1573-140	AUP-1542	NONE
AU-1538-70	AU-1573-70	AUP-1568	NONE
AU-1552	NONE	AUP-1597	NONE
AU-1552-140	NONE	AUX-1347	AU-2A-0150
AU-1552-70	NONE		
AU-1557	AU-1579		
AU-1557-400	AU-1579		
AU-1558	AU-1046		
AU-1562	AU-1310		
AU-1571-140	AM-1571		
AU-1571-70	AM-1571		
AU-1574-70	NONE		
AU-1575-140	NONE		
AU-1576	NONE		
AU-1576-140	NONE		
AU-1576-70	NONE		
AU-1577	AU-1586		
AU-1586	AU-1263		
AU-1609	AU-1414		
AU-1612-70	AU-1612S-70		
AU-1615	NONE		
AU-1625	AU-1421		



## ISO 9001:2008/AS9100 CERTIFIED

MITEQ attained its original ISO 9001 registration in June 1993, when fewer than 1500 companies were registered. ISO 9001 has since become a globally recognized standard for quality for commercial products. Nationally, it was accepted by an ever-increasing number of government agencies in place of long standing military quality and inspection criteria such as MIL-Q-9858 and MIL-I-45208. However, this is no longer true. AS9100 is now the Quality Management Standard being required for Aircraft, Space and Defense.



In May 2010 MITEQ achieved AS9100 registration, expanding our scope and commitment to include the Aircraft, Space and Defense Industry. MITEQ is now registered to AS9100 Rev B as well as ISO9001:2008 by National Quality Assurance USA (NQA), an accredited registrar of the ANSI-ASQ National Accreditation Board (ANAB). NQA performs Quality System audits at MITEQ every six months assuring continued compliance. Additionally, internal audits, management reviews and monthly quality reports assure the Quality Management System is continually improving at MITEQ.

## GENERAL INFORMATION

### PRICING AND TERMS

A quotation on any item in the catalog is available by contacting the factory. All quotations, unless otherwise noted, are valid for 60 days from the date of issue, F.O.B. (FCA) Hauppauge, NY 11788. Pricing does not include customer or government source inspection unless otherwise noted. On international orders, an irrevocable letter of credit may be required. MITEQ accepts these credit cards:



### QUANTITY DISCOUNTS

A quantity discount is generally available on most catalog items. Due to the wide variety of devices in the catalog, it is not possible to provide a standard discount schedule. When quantities are involved, please contact the miteq and the appropriate information will be provided.

### SOURCE INSPECTION

Government / customer source inspection is available on any item upon receipt of the complete written confirmation of purchase order items, including the prime government contract number. Source inspection with respect to some products increases the unit price and extends delivery because of duplicate standard final inspection and testing. It is recommended wherever possible that a Certificate of Compliance be substituted for source inspection to minimize price and delivery delays.

### SHIPPING INFORMATION

Unless instructed otherwise by the customer, we will ship UPS in the U.S. F.O.B. (FCA) Hauppauge. Air freight will be used as the primary international means of shipment. Please indicate at time of purchase what method of shipment you require.

### RETURNED MATERIAL

When returning material for repair or replacement, please ensure that there is complete information included with the shipment, giving a detailed description of the reason for its return, the date and purchase order on which it was obtained, and the exact address to which the material is to be reshipped. All returns must arrive freight, postage, duties and handling prepaid.

### REPAIR COSTS

Warranty repairs will be made at no cost to the customer. Units out of warranty, or those which have been mishandled, will require approval by the customer for the charges involved before the repairs can be accomplished. We will provide an estimate for the cost of the repair, which can be applied to the repair, if approval is granted. For those items that are deemed beyond repair, or where the customer may decide not to repair the unit, an evaluation fee and handling charge will be applicable.

### APPLICATION ENGINEERING

We maintain a large support staff of engineers who are experts in specific areas of microwave technology. Each has an engineering background that combines both a formal engineering education with training and experience in product design. As further technical support, we make available the services of our engineering and scientific staff, who may be consulted on more advanced circuit designs or application problems.

### DRAWINGS AND SPECIFICATIONS

The material presented in this catalog was current at the time of publication. MITEQ Inc.'s continuing product improvement program makes it necessary to reserve the right to change our mechanical and electrical specifications without notice. If either of these parameters is critical, please contact the factory to verify that the information is current.

## WARRANTY

1. MITEQ, Inc. warrants to the purchaser that each of its products, when shipped will be free from defects in material and workmanship and will perform in full accordance with applicable specifications. The limit of liability under this warranty is at MITEQ, Inc.'s option to repair or replace any product or part thereof which shall within: (a) three years of delivery for indoor equipment, (b) two years of delivery for outdoor equipment and (c) one year of delivery for integrated assemblies or equipment having RF output powers equal to or greater than +24 dBm, be returned by the purchaser to MITEQ, Inc., at 100 Davids Drive, Hauppauge, New York, 11788, and shall, as determined by examination by MITEQ, Inc., prove defective in material and/or workmanship. Warranty returns must first be authorized in writing by MITEQ, Inc. Disassembly of any MITEQ, Inc. product by anyone other than an authorized representative of MITEQ, Inc. voids this warranty in its entirety. MITEQ, Inc. reserves the right to make changes in any of its products without incurring any obligation to make the same changes on previously delivered products.
2. Components and subsystems having been repaired by MITEQ, Inc. shall be warranted for that repair for ninety (90) days. For products that are still within the original warranty period as described above, the original warranty (if longer) will take precedence. For all SATCOM products, that portion of the system that is repaired, will be warranted for one year.
3. As a condition to the warranties provided for herein, the Buyer will prepay the shipping charges for all products returned to MITEQ, Inc. for repair and MITEQ, Inc. will pay the return shipping with the exception of rack mountable hardware returned from outside the United States in which case the buyer will pay the shipping charges.
4. The buyer will pay the cost of inspecting and testing any goods returned under the warranty or otherwise which are found to meet the applicable specifications or which are not defective or not covered by the warranty.
5. Products sold by MITEQ, Inc. shall not be considered defective or non-conforming to the Buyers' order if they (a) satisfactorily fulfill the performance requirements that were (i) provided by the Buyer to MITEQ, Inc. or (ii) as published in the Sellers' product specification literature, or (b) in accordance with any written or verbal agreement between the Buyer and MITEQ, Inc., or (c) are in accordance with samples approved by the Buyer. This warranty shall not apply to any products or parts thereof which have been subject to accident, negligence, alteration, abuse or misuse. MITEQ, Inc. makes no warranty whatsoever in respect to accessories or parts not supplied by it.
6. Limitations of Warranty, Damages and Liability

EXCEPT AS EXPRESSLY SET FORTH HEREIN, THERE ARE NO WARRANTIES, CONDITIONS, GUARANTEES OR REPRESENTATIONS AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTIES, CONDITIONS, GUARANTEES OR REPRESENTATIONS, WHETHER EXPRESSED OR IMPLIED, IN LAW OR IN FACT, ORAL OR IN WRITING.

MITEQ, INC.'S AGGREGATE LIABILITY IN DAMAGES OR OTHERWISE SHALL NOT EXCEED THE PAYMENT, IF ANY, RECEIVED BY MITEQ, INC. FOR THE UNIT OF PRODUCT OR SERVICE FURNISHED OR TO BE FURNISHED, AS THE CASE MAY BE, WHICH IS THE SUBJECT OF CLAIM OR DISPUTE. IN NO EVENT SHALL MITEQ, INC. BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES, HOWSOEVER CAUSED.

7. All matters regarding this warranty shall be interpreted in accordance with the laws of the State of New York and any controversy that cannot be settled directly shall be settled by arbitration in New York, New York in accordance with the rules then prevailing of the American Arbitration Association, and judgement upon the award rendered may be entered in any court having jurisdiction thereof.
8. As required by Article 10(3) and Article 11(2) of Directive 2002/96/EC (WEEE Directive) of the European Parliament and the Council of the European Union, and in accordance with European Standard EN 50419, MITEQ Inc. labels its products with the following symbol:

This symbol indicates that the product cannot be thrown into the trash, and must be collected and treated in accordance with Directive 2002/96/EC and local regulations.



### **MITEQ FEDERAL SUPPLY CODE**

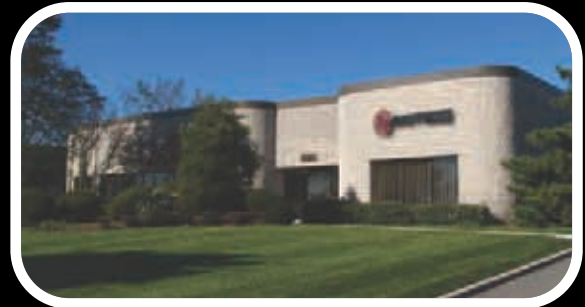
**Our Federal Supply Code is: 33592**



100 Davids Drive • Hauppauge, NY



320 Oser Avenue • Hauppauge, NY



380 Oser Avenue • Hauppauge, NY



330 Oser Avenue • Hauppauge, NY

