

# 10 & 20 Watt Power Amplifier 6900K Series

**Features**

- ❑ to 18 GHz
- ❑ Octave Bandwidths or Greater
- ❑ Optional GPIB control

**Description**

For test and measurement applications that require RF power of 20 Watts, Varian offers the 6900K Series power amplifier. For testing on antenna ranges, in EMC chambers, or on a test bench, Varian provides equipment built with quality and reliability that you can trust.

The 6900K series amplifiers are constructed with proven reliable traveling wave tubes (TWTs) which are built to provide dependable service within their lifetime. These TWTs have a wide range of applications and are readily available, resulting in Varian's ability to offer additional tubes in a timely manner. The power supply for the 6900K series has a calculated MTBF of more than 41,000 hours. Combined with Varian TWTs the 6900K series amplifier provides the industry standard for dependability.

The 6900K series TWT amplifier has a full line of standardized options including remote control, input and output insulators and harmonic filters. For ATE applications, IEEE 488 bus controllable amplifiers are available, with internal GPIB cards or external modules. More than a thousand Varian 6900K series amplifiers are used throughout the world, performing over a wide range of specifications, in a variety of environmental and operating conditions.

**Selection Guide**

| Model     | Power (Watts) | Freq. (GHz) | Gain (dB) | Connector |
|-----------|---------------|-------------|-----------|-----------|
| VZL6941K1 | 20            | 1-2         | 35        | N         |
| VZS6950K1 | 10            | 2-4         | 30        | N         |
| VZS6951K1 | 20            | 2-4         | 35        | N         |
| VZH6970K1 | 10            | 4-10        | 35        | N         |
| VZC6961K1 | 20            | 4-8         | 35        | N         |
| VZX6980K2 | 10            | 8-12.4      | 40        | N         |
| VZX6981K1 | 20            | 8-12.4      | 40        | N         |
| VZM6990K1 | 10            | 8-18        | 37        | N         |
| VZM6991K3 | 20            | 8-18        | 40        | N         |
| VZM6991K1 | 20            | 12.4-18     | 40        | N         |

**SPECIFICATIONS**

Frequency Range 1 To 18 GHZ (see Selection Guide)

Rated Output Power 20 Watts CW. Saturated output power may exceed rated power by 6 dB or more near band center. Output power is reduced by the insertion loss of all microwave options added at the output.

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|                   |  |
|-------------------|--|
| Small Signal Gain | 35 to 40 dB (see Selection Guide). Typically 10 to 20 dB higher near band center. Gain at saturated Power is typically 5 dB less than small signal gain. |
| Gain Stability    | 0.25 dB/day at constant drive and temperature.   |
| Gain Variation    | 10 dB peak-peak (typical), except M band 15 dB (typical)   |
| Impedance         | 50 Ohms  |
|                   | Input: 2.0:1 typical, Output: 2.0:1 typical, Load: 1.3:1 max. for full spec compliance, 2.0:1 max. for no damage.  |
| Noise & Spurious  | -50 dBc typical excluding harmonics and residual modulation.   |
| Noise Figure      | 35 dB max.   |

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**Mechanical & Environmental**

|                     |                                 |
|---------------------|---------------------------------|
| Ambient Temperature | 0 to +50°C                      |
| Relative Humidity   | 95% non condensing              |
| Altitude            | 6,000 feet max.                 |
| Cooling             | Forced air with integral blower |
| Prime Power         | 115 +10% 50/60 Hz, single phase |
| Power Consumption   | 400 Watts                       |

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