

## Avantek Products

# YIG-Tuned Oscillators For Industrial Applications

## Technical Data

### AV Series

#### Features

- Full 0.5 to 50 GHz Coverage
- Rugged Hermetic Packaging
- Reliable Thin-Film Construction
- $\pm 0.05\%$  to  $\pm 0.2\%$  Tuning Linearity
- $0^\circ$  to  $+65^\circ\text{C}$  Temperature Range

#### Applications

- Test and Measurement Equipment
- Instrumentation
- Signal Sources
- Wideband Receivers

#### Description

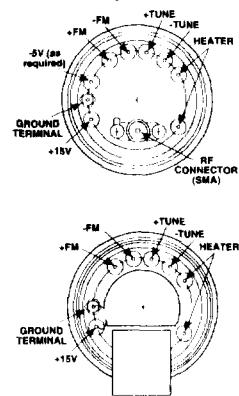
HP YIG-tuned fundamental transistor oscillators are compact and lightweight and are cost-effective for commercial instrument applications. They are built using the same HP thin-film construction and hermetic packaging that has proven itself ultimately reliable under severe military and aerospace environmental conditions.

This family of oscillators is designed for wideband applications in receivers and instruments where tuning linearity and spectral purity are crucial. They make ideal local oscillators for wideband receivers and spectrum analyzers, and are excellent as signal sources for microwave sweep generators and synthesizers.

The tuning curves ( $f_{\text{tuning}}$  vs.  $f_{\text{out}}$ ) for this series of YTOs are linear, and will deviate from the ideal straight line only  $\pm 0.05\%$  to  $\pm 0.2\%$  (typically). The power output remains flat within  $\pm 1.5$  to  $\pm 3.0$  dB over the entire tuning range.

All oscillators have a low inductance FM tuning coil in addition to the main tuning coil. This coil is in close proximity to the YIG sphere

#### Pin Configuration See Individual Specification for Case Style



(See Section 5 for detailed case drawings.)

and is used to fine-tune the oscillator frequency, to phase lock the YTO or to frequency modulate the output signal. The sensitivity of this port is much less than that of the main tuning coil, but it has a much wider 3 dB bandwidth and permits input modulation or control signals to deviate the output frequency by as much as 15 to 100 MHz at a rate up to 1 MHz.

## Electrical and Performance Specifications

Guaranteed Specifications at 0° to +65°C Case Temperature into a 50-ohm Load (Unless Otherwise Noted)

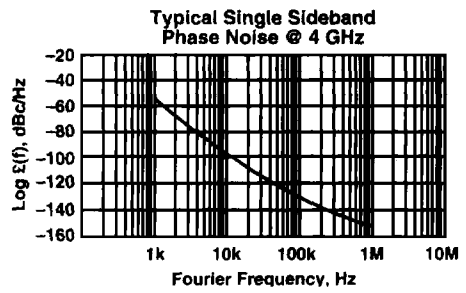
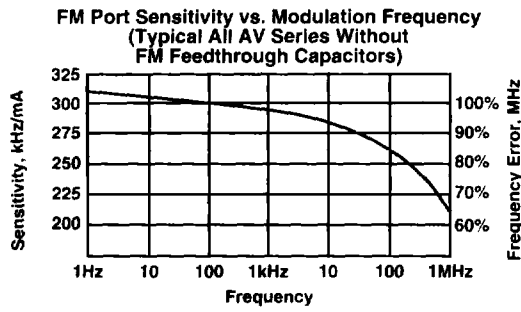
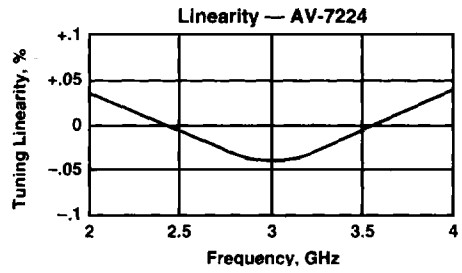
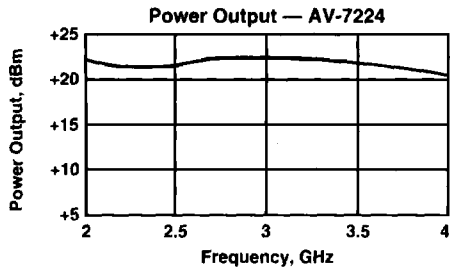
| Model No.  | AV-70502                     | AV-7104                      | AV-7104-9                    | AV-7124                      |
|--|------------------------------|------------------------------|------------------------------|------------------------------|
| Frequency Range, Min.                            | 0.5-2 GHz                    | 1-2.2 GHz                    | 1-2.2 GHz                    | 1-4 GHz                      |
| Power Output Into 50-ohm Load, Min. at 25°C      | 30 mW/+14.8 dBm              | 40 mW/+16 dBm                | 40 mW/+16 dBm                | 30 mW/+14.8 dBm              |
| Power Output Variation vs. Frequency, Max.       | 6.0 dB                       | 3.0 dB                       | 3.0 dB                       | 6.0 dB                       |
| Operating Case Temperature Range                 | 0° to +65°C                  | 0° to +65°C                  | 0° to +65°C                  | 0° to +65°C                  |
| Frequency Drift Over Operating Temperature, Max. | 10 MHz                       | 10 MHz                       | 10 MHz                       | 10 MHz                       |
| Pulling Figure (12 dB Return Loss), Typ.         | 0.5 MHz                      | 0.01 MHz                     | 0.01 MHz                     | 0.5 MHz                      |
| Pushing Figure, +15 VDC Supply, Typ.             | 0.5 MHz/V                    | 0.5 MHz/V                    | 0.5 MHz/V                    | 0.5 MHz/V                    |
| -5 VDC Supply, Typ.                              | N/A                          | N/A                          | N/A                          | 1.5 MHz/V                    |
| Magnetic Susceptibility @ 60 Hz, Typ.            | 50 kHz/Gauss                 | 70 kHz/Gauss                 | 70 kHz/Gauss                 | 70 kHz/Gauss                 |
| 2nd Harmonic, @ 25°C, Min.                       | -10 dBc                      | -15 dBc                      | -20 dBc                      | -12 dBc                      |
| 3rd Harmonic, @ 25°C, Min.                       | -10 dBc                      | -20 dBc                      | -20 dBc                      | -12 dBc                      |
| Spurious Output, Min.                            | -60 dBc                      | -60 dBc                      | -60 dBc                      | -60 dBc                      |
| <b>Main Tuning Port Characteristics</b>          |                              |                              |                              |                              |
| Sensitivity                                      | 15±.08 MHz/mA                | 20±1 MHz/mA                  | 20±1 MHz/mA                  | 20±1 MHz/mA                  |
| 3 dB Bandwidth, Typ.                             | 5 kHz                        | 5 kHz                        | 5 kHz                        | 5 kHz                        |
| Linearity, Typ                                   | ±0.2%                        | ±0.1%                        | ±0.1%                        | ±0.15%                       |
| Hysteresis, Typ.                                 | 2 MHz                        | 1.7 MHz                      | 1.7 MHz                      | 3 MHz                        |
| Input Impedance@1 kHz and 25°C Typ.              | 10 ohms in series with 42 mH | 10 ohms in series with 95 mH | 10 ohms in series with 95 mH | 10 ohms in series with 95 mH |
| <b>FM Port Characteristics</b>                   |                              |                              |                              |                              |
| Sensitivity, Typ.                                | 310 kHz/mA                   | 310 kHz/mA                   | 310 kHz/mA                   | 310 kHz/mA                   |
| 3 dB Bandwidth, Typ.                             | 400 kHz                      | 800 kHz                      | 800 kHz                      | 800 kHz                      |
| Deviation at 3 dB Bandwidth, Max.                | 15 MHz                       | 15 MHz                       | 15 MHz                       | 15 MHz                       |
| Input Impedance @ 1 MHz and 25°C Typ.            | 1 ohm in series with 1.25 µH | 1 ohm in series with 1.7 µH  | 1 ohm in series with 1.7 µH  | 1 ohm in series with 1.7 µH  |
| <b>DC Circuit Power, Max.</b>                    |                              |                              |                              |                              |
| +15±0.5V   | 200 mA                       | 150 mA                       | 150 mA                       | 150 mA                       |
| -5±0.1V  | N/A                          | N/A                          | N/A                          | 50 mA                        |
| <b>YIG Heater Power</b>                          |                              |                              |                              |                              |
| Input Voltage Range                              | 20 to 28 VDC                 | 20 to 28 VDC                 | 20 to 28 VDC                 | 20 to 28 VDC                 |
| Power @ 25°C, Max.                               | 1.5 watts                    | 1.5 watts                    | 1.5 watts                    | 1.5 watts                    |
| Power @ 0°C, Max.                                | 2.0 watts                    | 2.0 watts                    | 2.0 watts                    | 2.0 watts                    |
| Weight,Max.                                      | 8 oz.                        | 10 oz.                       | 10 oz.                       | 10 oz.                       |
| Case Style                                       | M1-45                        | A-45                         | A-45                         | C-45                         |

## Electrical and Performance Specifications

Guaranteed Specifications at 0 to +65°C Case Temperature into a 50-ohm Load (Unless Otherwise Noted)

| Model No.  | AV-7203                      | AV-7224                      | AV-7224-9                    | AV-7298                      |
|--|------------------------------|------------------------------|------------------------------|------------------------------|
| Frequency Range, Min.                            | 2-4 GHz                      | 2-4 GHz                      | 2-4 GHz                      | 2-8 GHz                      |
| Power Output into 50-ohm Load, Min. at 25°C      | 25 mW/+14 dBm                | 100 mW/+20 dBm               | 100 mW/+20 dBm               | 30 mW/+14.8 dBm              |
| Power Output Variation vs. Frequency, Max.       | 3.0 dB                       | 3.0 dB                       | 3.0 dB                       | 6.0 dB                       |
| Operating Case Temperature Range                 | 0° to +65°C                  | 0° to +65°C                  | 0° to +65°C                  | 0° to +65°C                  |
| Frequency Drift Over Operating Temperature, Max. | 10 MHz                       | 10 MHz                       | 10 MHz                       | 20 MHz                       |
| Pulling Figure (12 dB Return Loss), Typ.         | 0.5 MHz                      | 0.5 MHz                      | 0.5 MHz                      | 0.1 MHz                      |
| Pushing Figure, +15 VDC Supply, Typ.             | 0.5 MHz/V                    | 0.1 MHz/V                    | 0.1 MHz/V                    | 0.1 MHz/V                    |
| -5 VDC Supply, Typ.                              | N/A                          | 1.5 MHz/V                    | 1.5 MHz/V                    | 1.0 MHz/V                    |
| Magnetic Susceptibility @ 60 Hz, Typ.            | 70 kHz/Gauss                 | 70 kHz/Gauss                 | 70 kHz Gauss                 | 70 kHz/Gauss                 |
| 2nd Harmonic, @ 25°C, Min.                       | -12 dBc                      | -12 dBc                      | -20 dBc                      | -12 dBc                      |
| 3rd Harmonic, @ 25°C, Min.                       | -20 dBc                      | -12 dBc                      | -20 dBc                      | -12 dBc                      |
| Spurious Output, Min.                            | -60 dBc                      | -60 dBc                      | -60 dBc                      | -60 dBc                      |
| Single Sideband Phase Noise                      |                              |                              |                              |                              |
| @ 10 kHz Offset, Typ.                            | N/A                          | N/A                          | N/A                          | -105 dBc/ Hz                 |
| @ 100 kHz Offset, Typ.                           | N/A                          | N/A                          | N/A                          | -130 dBc/ Hz                 |
| Main Tuning Port Characteristics                 |                              |                              |                              |                              |
| Sensitivity                                      | 20±1 MHz/mA                  | 20±1 MHz/mA                  | 20±1 MHz/mA                  | 20±1 MHz/mA                  |
| 3 dB Bandwidth, Typ.                             | 5 kHz                        | 5 kHz                        | 5 kHz                        | 5 kHz                        |
| Linearity, Typ.                                  | ±.05%                        | ±.05%                        | ±.05%                        | ± 0.1%                       |
| Hysteresis, Typ.                                 | 3 MHz                        | 3 MHz                        | 3 MHz                        | 6 MHz                        |
| Input Impedance @ 1 kHz and 25°C, Typ.           | 10 ohms in series with 95 nH | 10 ohms in series with 95 nH | 10 ohms in series with 95 nH | 10 ohms in series with 95 nH |
| FM Port Characteristics                          |                              |                              |                              |                              |
| Sensitivity, Typ.                                | 310 kHz/mA                   | 310 kHz/mA                   | 310 kHz/mA                   | 310 kHz/mA                   |
| 3 dB Bandwidth, Typ.                             | 800 kHz                      | 800 kHz                      | 800 kHz                      | 800 kHz                      |
| Deviation at 3 dB Bandwidth, Max.                | 20 MHz                       | 20 MHz                       | 20 MHz                       | 40 MHz                       |
| Input Impedance @ 1 MHz and 25°C, Typ.           | 1 ohm in series with 1.7 µH  | 1 ohm in series with 1.7 µH  | 1 ohm in series with 1.7 µH  | 1 ohm in series with 1.7 µH  |
| DC Circuit Power, Max.                           |                              |                              |                              |                              |
| +15±0.5V   | 100 mA                       | 150 mA                       | 150 mA                       | 200 mA                       |
| -5.0±0.1 V                                       | N/A                          | 60 mA                        | 60 mA                        | 60 mA                        |
| VIG Heater Power                                 |                              |                              |                              |                              |
| Input Voltage Range                              | 20 to 28 VDC                 | 20 to 28 VDC                 | 20 to 28 VDC                 | 20 to 28 VDC                 |
| Power @ 25°C, Max.                               | 1.5 watts                    | 1.5 watts                    | 1.5 watts                    | 1.5 watts                    |
| Power @ 0°C, Max.                                | 2.0 watts                    | 2.0 watts                    | 2.0 watts                    | 2.0 watts                    |
| Weight, Max.                                     | 10 oz.                       | 10 oz.                       | 10 oz.                       | 10 oz.                       |
| Case Style                                       | A-45                         | C-45                         | C-45                         | C-45                         |

## Typical Performance



## Electrical and Performance Specifications

Guaranteed Specifications at 0 to +65°C Case Temperature into a 50-ohm Load (Unless Otherwise Noted)

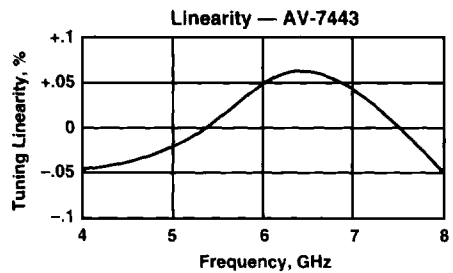
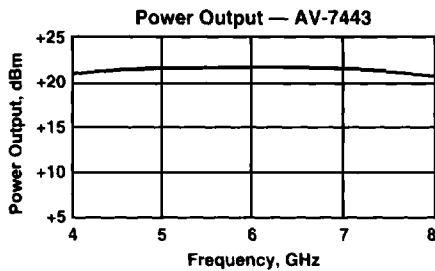
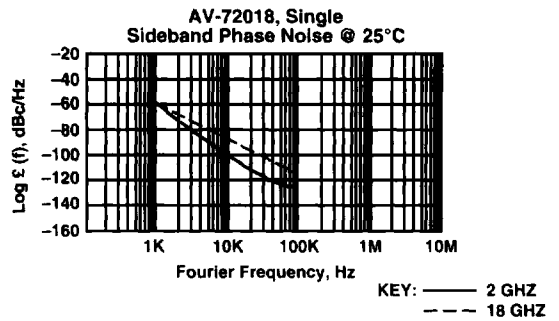
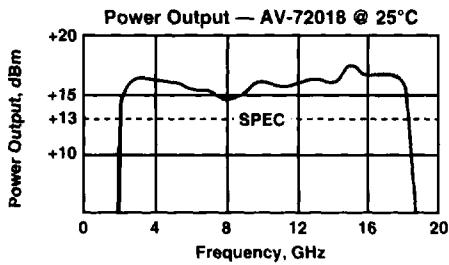
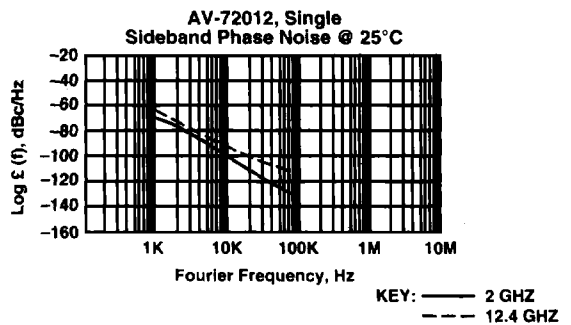
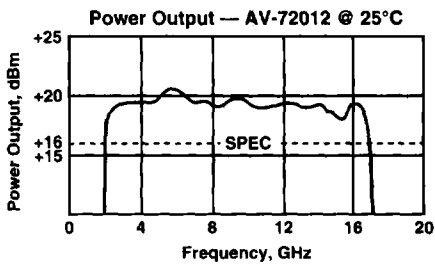
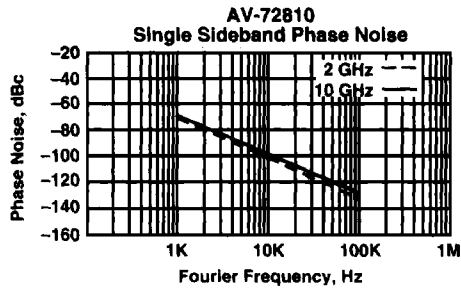
| Model No.  | AV-7288                         | AV-72B8                         | AV-72810                        | AV-72012                         |
|--|---------------------------------|---------------------------------|---------------------------------|----------------------------------|
| Frequency Range, Min.                            | 2-8 GHz                         | 2-8 GHz                         | 2-10 GHz                        | 2-12.4 GHz                       |
| Power Output into 50-ohm Load, Min. at 25°C      | 100 mW/+20 dBm                  | 200 mW/+23 dBm                  | 25 mW/+14.0 dBm                 | 40 mW/+16 dBm                    |
| Power Output Variation vs. Frequency, Max.       | 6.0 dB                          | 6.0 dB                          | 6.0 dB                          | 6.0 dB                           |
| Operating Case Temperature Range                 | 0° to +65°C                     | 0° to +65°C                     | 0° to +65°C                     | 0° to +65°C                      |
| Frequency Drift Over Operating Temperature, Max. | 20 MHz                          | 20 MHz                          | 20 MHz                          | 25 MHz                           |
| Pulling Figure (12 dB Return Loss), Typ.         | 0.2 MHz                         | 0.2 MHz                         | 0.1 MHz                         | 0.5 MHz                          |
| Pushing Figure, +15 VDC Supply, Typ.             | 0.1 MHz/V                       | 0.1 MHz/V                       | 0.1 MHz/V                       | 0.1 MHz/V                        |
| -5 VDC Supply, Typ.                              | 2.0 MHz/V                       | N/A                             | 1.0 MHz/V                       | 1.5 MHz/V                        |
| Magnetic Susceptibility @ 60 Hz, Typ.            | 70 kHz/Gauss                    | 70 kHz/Gauss                    | 70 kHz/Gauss                    | 50 kHz/Gauss                     |
| 2nd Harmonic, @ 25°C, Min.                       | -8 dBc                          | -10 dBc                         | -12 dBc                         | -10 dBc                          |
| 3rd Harmonic, @ 25°C, Min.                       | -8 dBc                          | -10 dBc                         | -12 dBc                         | -10 dBc                          |
| Spurious Output, Min.                            | -60 dBc                         | -60 dBc                         | -60 dBc                         | -60 dBc/Hz                       |
| Single Sideband Phase Noise                      |                                 |                                 |                                 |                                  |
| @ 10 kHz Offset, Typ.                            | N/A                             | N/A                             | N/A                             | -100 dBc/ Hz                     |
| @ 100 kHz Offset, Typ.                           | N/A                             | N/A                             | N/A                             | -130 dBc/ Hz                     |
| <b>Main Tuning Port Characteristics</b>          |                                 |                                 |                                 |                                  |
| Sensitivity                                      | 20±1 MHz/mA                     | 20±1 MHz/mA                     | 20±1 MHz/mA                     | 20±1 MHz/mA                      |
| 3 dB Bandwidth, Typ.                             | 5 kHz                           | 5 kHz                           | 5 kHz                           | 5 kHz                            |
| Linearity, Typ.                                  | ±0.1%                           | ±.1%                            | ±0.1%                           | ± 0.1%                           |
| Hysteresis, Typ.                                 | 9 MHz                           | 8 MHz                           | 8 MHz                           | 10 MHz                           |
| Input Impedance @ 1 kHz and 25°C, Typ.           | 10 ohms in series<br>with 95 mH | 10 ohms in series<br>with 95 mH | 10 ohms in series<br>with 95 mH | 9 ohms in series<br>with 60 mH   |
| <b>FM Port Characteristics</b>                   |                                 |                                 |                                 |                                  |
| Sensitivity, Typ.                                | 310 kHz/mA                      | 310 kHz/mA                      | 310 kHz/mA                      | 450 kHz/mA                       |
| 3 dB Bandwidth, Typ.                             | 800 kHz                         | 400 kHz                         | 800 kHz                         | 200 kHz                          |
| Deviation at 3 dB Bandwidth, Max.                | 40 MHz                          | 40 MHz                          | 40 MHz                          | 40 MHz                           |
| Input Impedance @ 1 MHz and 25°C, Typ.           | 1 ohm in series<br>with 1.7 µH  | 1 ohm in series<br>with 1.25 µH | 1 ohm in series<br>with 1.7 µH  | 0.5 ohm in series<br>with 2.0 µH |
| <b>DC Circuit Power, Max.</b>                    |                                 |                                 |                                 |                                  |
| +15±0.5V   | 250 mA                          | 350 mA                          | 200 mA                          | 175 mA                           |
| -5.0±0.1 V                                       | 60 mA                           | 60 mA                           | 25 mA                           | 25 mA                            |
| <b>YIG Heater Power</b>                          |                                 |                                 |                                 |                                  |
| Input Voltage Range                              | 20 to 28 VDC                    | 20 to 28 VDC                    | 20 to 28 VDC                    | 20 to 28 VDC                     |
| Power @ 25°C, Max.                               | 1.5 watts                       | 1.5 watts                       | 1.5 watts                       | 1.5 watts                        |
| Power @ 0°C, Max.                                | 2.0 watts                       | 2.0 watts                       | 2.0 watts                       | 2.0 watts                        |
| Weight, Max.                                     | 10 oz.                          | 10 oz.                          | 10 oz.                          | 12 oz.                           |
| Case Style                                       | C-45                            | C-60                            | C-45                            | M4-45                            |

## Electrical and Performance Specifications

Guaranteed Specifications at 0 to +65°C Case Temperature into a 50-ohm Load (Unless Otherwise Noted)

| Model No.  | AV-72018                      | AV-7453                      | AV-7453-9                    | AV-7443                      |
|--|-------------------------------|------------------------------|------------------------------|------------------------------|
| Frequency Range, Min.                            | 2-18 GHz                      | 4-8 GHz                      | 4-8 GHz                      | 4-8 GHz                      |
| Power Output into 50-ohm Load, Min. at 25°C      | 20 mW/+13 dBm                 | 50 mW/+17 dBm                | 40 mW/+16 dBm                | 100 mW/+20 dBm               |
| Power Output Variation vs. Frequency, Max.       | 6.0 dB                        | 6.0 dB                       | 6.0 dB                       | 6.0 dB                       |
| Operating Case Temperature Range                 | 0° to +65°C                   | 0° to +65°C                  | 0° to +65°C                  | 0° to +65°C                  |
| Frequency Drift Over Operating Temperature, Max. | 40 MHz                        | 20 MHz                       | 20 MHz                       | 20 MHz                       |
| Pulling Figure (12 dB Return Loss), Typ.         | 0.1 MHz                       | 0.5 MHz                      | 0.5 MHz                      | 0.2 MHz                      |
| Pushing Figure, +15 VDC Supply, Typ.             | 0.1 MHz/V                     | 0.1 MHz/V                    | 0.1 MHz/V                    | 0.1 MHz/V                    |
| -5 VDC Supply, Typ.                              | 5.0 MHz/V                     | 1.5 MHz/V                    | 1.5 MHz/V                    | 2.0 MHz/V                    |
| Magnetic Susceptibility @ 60 Hz, Typ.            | 50 kHz/Gauss                  | 70 kHz/Gauss                 | 70 kHz/Gauss                 | 70 kHz/Gauss                 |
| 2nd Harmonic, @ 25°C, Min.                       | -8 dBc                        | -12 dBc                      | -20 dBc                      | -12 dBc                      |
| 3rd Harmonic, @ 25°C, Min.                       | -10 dBc                       | -20 dBc                      | -20 dBc                      | -20 dBc                      |
| Spurious Output, Min.                            | -60 dBc                       | -60 dBc                      | -60 dBc                      | -60 dBc                      |
| <b>Main Tuning Port Characteristics</b>          |                               |                              |                              |                              |
| Sensitivity                                      | 18±1 MHz/mA                   | 20±1 MHz/mA                  | 20±1 MHz/mA                  | 20±1 MHz/mA                  |
| 3 dB Bandwidth, Typ.                             | 5 kHz                         | 5 kHz                        | 5 kHz                        | 5 kHz                        |
| Linearity, Typ.                                  | ±0.1%                         | ±0.05%                       | ±0.05%                       | ±.05%                        |
| Hysteresis, Typ.                                 | 16 MHz                        | 6 MHz                        | 6 MHz                        | 6 MHz                        |
| Input Impedance @ 1 kHz and 25°C, Typ.           | 6 ohms in series with 73 mH   | 10 ohms in series with 95 mH | 10 ohms in series with 95 mH | 10 ohms in series with 95 mH |
| <b>FM Port Characteristics</b>                   |                               |                              |                              |                              |
| Sensitivity, Typ.                                | 450 kHz/mA                    | 310 kHz/mA                   | 310 kHz/mA                   | 310 kHz/mA                   |
| 3 dB Bandwidth, Typ.                             | 200 kHz                       | 800 kHz                      | 800 kHz                      | 800 kHz                      |
| Deviation at 3 dB Bandwidth, Max.                | 70 MHz                        | 40 MHz                       | 40 MHz                       | 40 MHz                       |
| Input Impedance @ 1 MHz and 25°C, Typ.           | 0.5 ohm in series with 2.0 µH | 1 ohm in series with 1.7 µH  | 1 ohm in series with 1.7 µH  | 1 ohm in series with 1.7 µH  |
| <b>DC Circuit Power, Max.</b>                    |                               |                              |                              |                              |
| +15±0.5V   | 350 mA                        | 150 mA                       | 150 mA                       | 200 mA                       |
| -5.0±0.1 V                                       | 30 mA                         | 60 mA                        | 60 mA                        | 60 mA                        |
| <b>YIG Heater Power</b>                          |                               |                              |                              |                              |
| Input Voltage Range                              | 20 to 28 VDC                  | 20 to 28 VDC                 | 20 to 28 VDC                 | 20 to 28 VDC                 |
| Power @ 25°C, Max.                               | 1.5 watts                     | 1.5 watts                    | 1.5 watts                    | 1.5 watts                    |
| Power @ 0°C, Max.                                | 2.0 watts                     | 2.0 watts                    | 2.0 watts                    | 2.0 watts                    |
| Weight, Max.                                     | 17 oz.                        | 10 oz.                       | 10 oz.                       | 10 oz.                       |
| Case Style                                       | M3-60                         | C-38                         | C-38                         | C-45                         |

## Typical Performance



## Electrical and Performance Specifications

Guaranteed Specifications at 0 to +65°C Case Temperature into a 50-ohm Load (Unless Otherwise Noted)

| Model No.  | AV-7443-9                    | AV-74010                     | AV-74018                      | AV-76318                      |
|--|------------------------------|------------------------------|-------------------------------|-------------------------------|
| Frequency Range, Min.                            | 4-8 GHz                      | 4-10 GHz                     | 4-18 GHz                      | 6-18 GHz                      |
| Power Output into 50-ohm Load, Min. at 25°C      | 60 mW/+17.8 dBm              | 40 mW/+16 dBm                | 50 mW/+17 dBm                 | 40 mW/+16 dBm                 |
| Power Output Variation vs. Frequency, Max.       | 6.0 dB                       | 6.0 dB                       | 6.0 dB                        | 6.0 dB                        |
| Operating Case Temperature Range                 | 0° to +65°C                  | 0° to +65°C                  | 0° to +65°C                   | 0° to +65°C                   |
| Frequency Drift Over Operating Temperature, Max. | 20 MHz                       | 20 MHz                       | 40 MHz                        | 40 MHz                        |
| Pulling Figure (12 dB Return Loss), Typ.         | 0.2 MHz                      | 0.1 MHz                      | 0.1 MHz                       | 0.1 MHz                       |
| Pushing Figure, +15 VDC Supply, Typ.             | 0.1 MHz/V                    | 0.1 MHz/V                    | 0.1 MHz/V                     | 0.1 MHz/V                     |
| -5 VDC Supply, Typ.                              | 2.0 MHz/V                    | 1.5 MHz/V                    | 2.0 MHz/V                     | 1.5 MHz/V                     |
| Magnetic Susceptibility @ 60 Hz, Typ.            | 70 kHz/Gauss                 | 70 kHz/Gauss                 | 50 kHz/Gauss                  | 50 kHz/Gauss                  |
| 2nd Harmonic, @ 25°C, Min.                       | -20 dBc                      | -12 dBc                      | -10 dBc                       | -10 dBc                       |
| 3rd Harmonic, @ 25°C, Min.                       | -20 dBc                      | -15 dBc                      | -20 dBc                       | -12 dBc                       |
| Spurious Output, Min.                            | -60 dBc                      | -60 dBc                      | -60 dBc                       | -60 dBc                       |
| Single Sideband Phase Noise                      |                              |                              |                               |                               |
| @ 10 kHz Offset, Typ.                            | N/A                          | N/A                          | N/A                           | -95 dBc/Hz                    |
| @ 100 kHz Offset, Typ.                           | N/A                          | N/A                          | N/A                           | -120 dBc/Hz                   |
| Main Tuning Port Characteristics                 |                              |                              |                               |                               |
| Sensitivity                                      | 20±1 MHz/mA                  | 20±1 MHz/mA                  | 18±1 MHz/mA                   | 18±1 MHz/mA                   |
| 3 dB Bandwidth, Typ.                             | 5 kHz                        | 5 kHz                        | 5 kHz                         | 5 kHz                         |
| Linearity, Typ.                                  | ±0.1%                        | ±0.1%                        | ±0.1%                         | ±0.1%                         |
| Hysteresis, Typ.                                 | 6 MHz                        | 9 MHz                        | 16 MHz                        | 12 MHz                        |
| Input Impedance @ 1 kHz and 25°C, Typ.           | 10 ohms in series with 95 nH | 10 ohms in series with 95 nH | 6 ohms in series with 73 nH   | 6 ohms in series with 73 nH   |
| FM Port Characteristics                          |                              |                              |                               |                               |
| Sensitivity, Typ.                                | 310 kHz/mA                   | 310 kHz/mA                   | 450 kHz/mA                    | 425 kHz/mA                    |
| 3 dB Bandwidth, Typ.                             | 800 kHz                      | 800 kHz                      | 200 kHz                       | 1 MHz                         |
| Deviation at 3 dB Bandwidth, Max.                | 40 MHz                       | 40 MHz                       | 70 MHz                        | 90 MHz                        |
| Input Impedance @ 1 MHz and 25°C, Typ.           | 1 ohm in series with 1.7 nH  | 1 ohm in series with 2.3 nH  | 0.5 ohm in series with 2.0 nH | 0.5 ohm in series with 2.3 nH |
| DC Circuit Power, Max.                           |                              |                              |                               |                               |
| +15±0.5V   | 200 mA                       | 200 mA                       | 350 mA                        | 350 mA                        |
| -5.0±0.1 V                                       | 60 mA                        | 60 mA                        | 30 mA                         | 30 mA                         |
| YIG Heater Power                                 |                              |                              |                               |                               |
| Input Voltage Range                              | 20 to 28 VDC                 | 20 to 28 VDC                 | 20 to 28 VDC                  | —                             |
| Power @ 25°C, Max.                               | 1.5 watts                    | 1.5 watts                    | 1.5 watts                     | —                             |
| Power @ 0°C, Max.                                | 2.0 watts                    | 2.0 watts                    | 2.0 watts                     | —                             |
| Weight, Max.                                     | 10 oz.                       | 10 oz.                       | 17 oz.                        | 17 oz.                        |
| Case Style                                       | C-45                         | C-45                         | M3-60                         | M3-60                         |

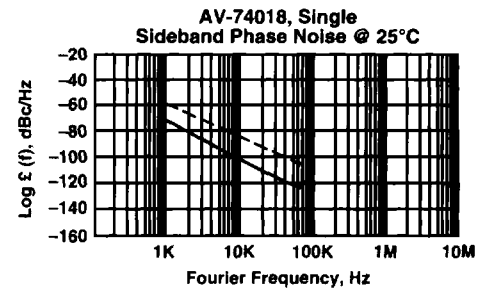
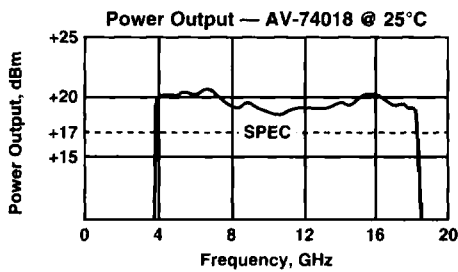
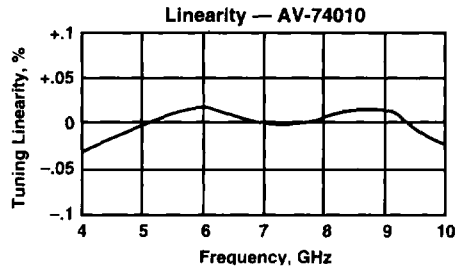
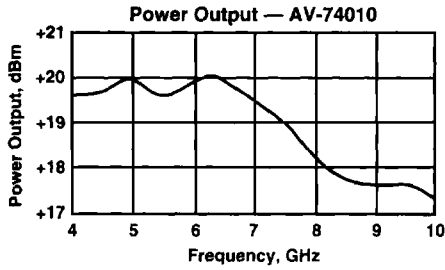


## Electrical and Performance Specifications

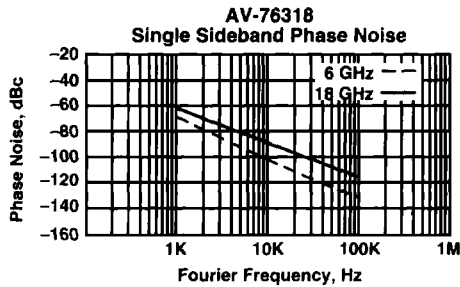
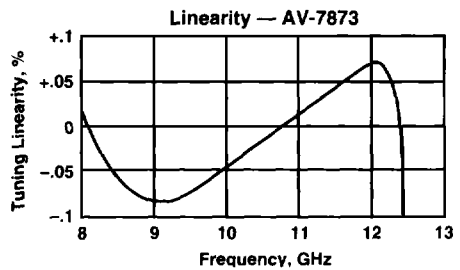
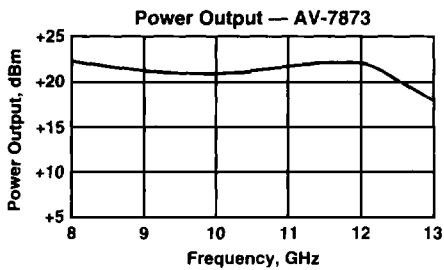
Guaranteed Specifications at 0 to +65°C Case Temperature into a 50-ohm Load (Unless Otherwise Noted)

| Model No.  | AV-7871                       | AV-7871-9                     | AV-78012                      | AV-7873                       |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Frequency Range, Min.                            | 8–12.4 GHz                    | 8–12.4 GHz                    | 8–12.4 GHz                    | 8–12.4 GHz                    |
| Power Output into 50-ohm Load, Min. at 25°C      | 30 mW/+14.8 dBm               | 30 mW/+14.8 dBm               | 60 mW/+17.8 dBm               | 100 mW/+20 dBm                |
| Power Output Variation vs. Frequency, Max.       | 6.0 dB                        | 6.0 dB                        | 6.0 dB                        | 6.0 dB                        |
| Operating Case Temperature Range                 | 0° to +65°C                   | 0° to +65°C                   | 0° to +65°C                   | 0° to +65°C                   |
| Frequency Drift Over Operating Temperature, Max. | 25 MHz                        | 25 MHz                        | 20 MHz                        | 25 MHz                        |
| Pulling Figure (12 dB Return Loss), Typ.         | 5.0 MHz                       | 5.0 MHz                       | 0.5 MHz                       | 1 MHz                         |
| Pushing Figure, +15 VDC Supply, Typ.             | 0.1 MHz/V                     | 0.1 MHz/V                     | 0.1 MHz/V                     | 0.1 MHz/V                     |
| -5 VDC Supply, Typ.                              | N/A                           | N/A                           | 1.5 MHz/V                     | N/A                           |
| Magnetic Susceptibility @ 60 Hz, Typ.            | 50 kHz/Gauss                  | 50 kHz/Gauss                  | 50 kHz/Gauss                  | 50 kHz/Gauss                  |
| 2nd Harmonic, @ 25°C, Min.                       | -12 dBc                       | -20 dBc                       | -12 dBc                       | -12 dBc                       |
| 3rd Harmonic, @ 25°C, Min.                       | -20 dBc                       | -20 dBc                       | -20 dBc                       | -20 dBc                       |
| Spurious Output, Min.                            | -60 dBc                       | -60 dBc                       | -60 dBc                       | -60 dBc                       |
| Single Sideband Phase Noise                      |                               |                               |                               |                               |
| @ 10 kHz Offset, Typ.                            | N/A                           | N/A                           | -105 dBc/ Hz                  | N/A                           |
| @ 100 kHz Offset, Typ.                           | N/A                           | N/A                           | -135 dBc/ Hz                  | N/A                           |
| Main Tuning Port Characteristics                 |                               |                               |                               |                               |
| Sensitivity                                      | 20±1 MHz/mA                   | 20±1 MHz/mA                   | 20±1 MHz/mA                   | 20±1 MHz/mA                   |
| 3 dB Bandwidth, Typ.                             | 5 kHz                         | 5 kHz                         | 5 kHz                         | 5 kHz                         |
| Linearity, Typ.                                  | ±0.01%                        | ±0.1%                         | ±0.05%                        | ±0.1%                         |
| Hysteresis, Typ.                                 | 6 MHz                         | 6 MHz                         | 5 MHz                         | 6 MHz                         |
| Input Impedance @ 1 kHz and 25°C, Typ.           | 9 ohms in series with 60 mH   | 9 ohms in series with 60 mH   | 9 ohms in series with 60 mH   | 9 ohms in series with 60 mH   |
| FM Port Characteristics                          |                               |                               |                               |                               |
| Sensitivity, Typ.                                | 450 kHz/mA                    | 450 kHz/mA                    | 450 kHz/mA                    | 450 kHz/mA                    |
| 3 dB Bandwidth, Typ.                             | 400 kHz                       | 400 kHz                       | 400 kHz                       | 400 kHz                       |
| Deviation at 3 dB Bandwidth, Max.                | 40 MHz                        | 40 MHz                        | 40 MHz                        | 40 MHz                        |
| Input Impedance @ 1 MHz and 25°C, Typ.           | 0.5 ohm in series with 2.0 µH | 0.5 ohm in series with 1.7 µH | 0.5 ohm in series with 2.0 µH | 0.5 ohm in series with 2.0 µH |
| DC Circuit Power, Max.                           |                               |                               |                               |                               |
| +15±0.5V   | 125 mA                        | 125 mA                        | 250 mA                        | 250 mA                        |
| -5.0±0.1 V                                       | —                             | —                             | 40 mA                         | —                             |
| YIG Heater Power                                 |                               |                               |                               |                               |
| Input Voltage Range                              | 20 to 28 VDC                  | 20 to 28 VDC                  | 20 to 28 VDC                  | 20 to 28 VDC                  |
| Power @ 25°C, Max.                               | 1.5 watts                     | 1.5 watts                     | 1.5 watts                     | 1.5 watts                     |
| Power @ 0°C, Max.                                | 2.0 watts                     | 2.0 watts                     | 2.0 watts                     | 2.0 watts                     |
| Weight, Max.                                     | 12 oz.                        | 12 oz.                        | 12 oz.                        | 12 oz.                        |
| Case Style                                       | M4-45                         | M4-45                         | M4-45                         | M4-45                         |

## Typical Performance



KEY: — 4 GHz  
 - - - 18 GHz



## Electrical and Performance Specifications

Guaranteed Specifications at 0 to +65°C Case Temperature into a 50-ohm Load (Unless Otherwise Noted)

| Model No.  | AV-7873-9                     | AV-78218                      | AV-78518                      | AV-78020                      |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Frequency Range, Min.                            | 8–12.4 GHz                    | 8–18 GHz                      | 6–18 GHz                      | 8–20 GHz                      |
| Power Output into 50-ohm Load, Min. at 25°C      | 100 mW/+20 dBm                | 30 mW/+14.8 dBm               | 60 mW/+17.8 dBm               | 20 mW/+13 dBm                 |
| Power Output Variation vs. Frequency, Max.       | 6.0 dB                        | 6.0 dB                        | 6.0 dB                        | 8.0 dB                        |
| Operating Case Temperature Range                 | 0° to +65°C                   | 0° to +65°C                   | 0° to +65°C                   | 0° to +65°C                   |
| Frequency Drift Over Operating Temperature, Max. | 25 MHz                        | 40 MHz                        | 40 MHz                        | 40 MHz                        |
| Pulling Figure (12 dB Return Loss), Typ.         | 1.0 MHz                       | 0.5 MHz                       | 1 MHz                         | 1 MHz                         |
| Pushing Figure, +15 VDC Supply, Typ.             | 0.1 MHz/V                     | 0.1 MHz/V                     | 0.1 MHz/V                     | 0.1 MHz/V                     |
| –5 VDC Supply, Typ.                              | N/A                           | N/A                           | N/A                           | N/A                           |
| Magnetic Susceptibility @ 60 Hz, Typ.            | 50 kHz/Gauss                  | 50 kHz/Gauss                  | 50 kHz/Gauss                  | 50 kHz/Gauss                  |
| 2nd Harmonic, @ 25°C, Min.                       | –20 dBc                       | –12 dBc                       | –12 dBc                       | –12 dBc                       |
| 3rd Harmonic, @ 25°C, Min.                       | –20 dBc                       | —                             | —                             | —                             |
| Spurious Output, Min.                            | –60 dBc                       | –60 dBc                       | –60 dBc                       | –60 dBc                       |
| <b>Main Tuning Port Characteristics</b>          |                               |                               |                               |                               |
| Sensitivity                                      | 20±1 MHz/mA                   | 18±1 MHz/mA                   | 18±1 MHz/mA                   | 20±1 MHz/mA                   |
| 3 dB Bandwidth, Typ.                             | 5 kHz                         | 5 kHz                         | 5 kHz                         | 5 kHz                         |
| Linearity, Typ.                                  | ±0.1%                         | ±0.1%                         | ±0.1%                         | ±0.1%                         |
| Hysteresis, Typ.                                 | 6 MHz                         | 15 MHz                        | 18 MHz                        | 18 MHz                        |
| Input Impedance @ 1 kHz and 25°C, Typ.           | 9 ohms in series with 60 mH   | 6 ohms in series with 73 mH   | 6 ohms in series with 51 mH   | 7 ohms in series with 73 mH   |
| <b>FM Port Characteristics</b>                   |                               |                               |                               |                               |
| Sensitivity, Typ.                                | 450 kHz/mA                    | 450 kHz/mA                    | 450 kHz/mA                    | 450 kHz/mA                    |
| 3 dB Bandwidth, Typ.                             | 400 kHz                       | 1 MHz                         | 1 MHz                         | 1 MHz                         |
| Deviation at 3 dB Bandwidth, Max.                | 40 MHz                        | 90 MHz                        | 90 MHz                        | 90 MHz                        |
| Input Impedance @ 1 MHz and 25°C, Typ.           | 0.5 ohm in series with 2.0 µH | 0.5 ohm in series with 2.3 µH | 0.5 ohm in series with 2.3 µH | 0.5 ohm in series with 2.3 µH |
| <b>DC Circuit Power, Max.</b>                    |                               |                               |                               |                               |
| +15±0.5, –3.5V                                   | 250 mA                        | 175 mA                        | 275 mA                        | 275 mA                        |
| –5.0±0.1V  | —                             | —                             | —                             | —                             |
| <b>YIG Heater Power</b>                          |                               |                               |                               |                               |
| Input Voltage Range                              | 20 to 28 VDC                  | 20 to 28 VDC                  | 20 to 28 VDC                  | 20 to 28 VDC                  |
| Power @ 25°C, Max.                               | 1.5 watts                     | 1.5 watts                     | 1.5 watts                     | 1.5 watts                     |
| Power @ 0°C, Max.                                | 2.0 watts                     | 2.0 watts                     | 2.0 watts                     | 2.0 watts                     |
| Weight, Max.                                     | 10 oz.                        | 17 oz.                        | 17 oz.                        | 17 oz.                        |
| Case Style                                       | M4-45                         | M3-45                         | M3-60                         | M3-60                         |

## Electrical and Performance Specifications

Guaranteed Specifications at 0 to +65°C Case Temperature into a 50-ohm Load (Unless Otherwise Noted)

| Model No.  | AV-78020-9                    | AV-71251                      | AV-71251-9                    | AV-12018                      |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Frequency Range, Min.                            | 8–20 GHz                      | 12–18 GHz                     | 12–18 GHz                     | 12–18 GHz                     |
| Power Output into 50-ohm Load, Min. at 25°C      | 20 mW/+13 dBm                 | 40 mW/+16 dBm                 | 30 mW/+14.8 dBm               | 50 mW/+17 dBm                 |
| Power Output Variation vs. Frequency, Max.       | 8.0 dB                        | 6.0 dB                        | 6.0 dB                        | 6.0 dB                        |
| Operating Case Temperature Range                 | 0° to +65°C                   | 0° to +65°C                   | 0° to +65°C                   | 0° to +65°C                   |
| Frequency Drift Over Operating Temperature, Max. | 40 MHz                        | 40 MHz                        | 40 MHz                        | 40 MHz                        |
| Pulling Figure (12 dB Return Loss), Typ.         | 1.0 MHz                       | 1 MHz                         | 1.0 MHz                       | 0.1 MHz                       |
| Pushing Figure, +15 VDC Supply, Typ.             | 0.1 MHz/V                     | 0.1 MHz/V                     | 0.1 MHz/V                     | 0.1 MHz/V                     |
| -5 VDC Supply, Typ.                              | N/A                           | N/A                           | N/A                           | 1.5 MHz/V                     |
| Magnetic Susceptibility @ 60 Hz, Typ.            | 50 kHz/Gauss                  | 50 kHz/Gauss                  | 50 kHz Gauss                  | 50 kHz/Gauss                  |
| 2nd Harmonic, @ 25°C, Min.                       | -20 dBc                       | -12 dBc                       | -20 dBc                       | -20 dBc                       |
| 3rd Harmonic, @ 25°C, Min.                       | -20 dBc                       | —                             | -20 dBc                       | -20 dBc                       |
| Spurious Output, Min.                            | -60 dBc                       | -60 dBc                       | -60 dBc                       | -60 dBc                       |
| Single Sideband Phase Noise                      |                               |                               |                               |                               |
| @ 10 kHz Offset, Typ.                            | N/A                           | N/A                           | N/A                           | -100 dBc/Hz                   |
| @ 100 kHz Offset, Typ.                           | N/A                           | N/A                           | N/A                           | -125 dBc/Hz                   |
| Main Tuning Port Characteristics                 |                               |                               |                               |                               |
| Sensitivity                                      | 20±1 MHz/mA                   | 18±1 MHz/mA                   | 18±1 MHz/mA                   | 18±1 MHz/mA                   |
| 3 dB Bandwidth, Typ.                             | 5 kHz                         | 5 kHz                         | 5 kHz                         | 5 kHz                         |
| Linearity, Typ.                                  | ±0.15%                        | ±0.1%                         | ±0.1%                         | ± 0.1%                        |
| Hysteresis, Typ.                                 | 18 MHz                        | 9 MHz                         | 9 MHz                         | 6 MHz                         |
| Input Impedance @ 1 kHz and 25°C, Typ.           | 7 ohms in series with 73 mH   | 6 ohms in series with 73 mH   | 6 ohms in series with 73 mH   | 6 ohms in series with 73 mH   |
| FM Port Characteristics                          |                               |                               |                               |                               |
| Sensitivity, Typ.                                | 450 kHz/mA                    | 450 kHz/mA                    | 450 kHz/mA                    | 425 kHz/mA                    |
| 3 dB Bandwidth, Typ.                             | 1 MHz                         | 1 MHz                         | 1 MHz                         | 1 MHz                         |
| Deviation at 3 dB Bandwidth, Max.                | 90 MHz                        | 70 MHz                        | 70 MHz                        | 90 MHz                        |
| Input Impedance @ 1 MHz and 25°C, Typ.           | 0.5 ohm in series with 2.3 µH | 0.5 ohm in series with 2.3 µH | 0.5 ohm in series with 2.3 µH | 0.5 ohm in series with 2.3 µH |
| DC Circuit Power, Max.                           |                               |                               |                               |                               |
| +15±0.5V   | —                             | 150 mA                        | —                             | 350 mA                        |
| -5.0±0.1V  | —                             | —                             | —                             | 30 mA                         |
| +15+0.5, -3.5V                                   | 275 mA                        | —                             | 150 mA                        | —                             |
| YIG Heater Power                                 |                               |                               |                               |                               |
| Input Voltage Range                              | 20 to 28 VDC                  | 20 to 28 VDC                  | 20 to 28 VDC                  | —                             |
| Power @ 25°C, Max.                               | 1.5 watts                     | 1.5 watts                     | 1.5 watts                     | —                             |
| Power @ 0°C, Max.                                | 2.0 watts                     | 2.0 watts                     | 2.0 watts                     | —                             |
| Weight, Max.                                     | 17 oz.                        | 17 oz.                        | 17 oz.                        | 17 oz.                        |
| Case Style                                       | M3-60                         | M3-60                         | M3-60                         | M3-60                         |

## Electrical and Performance Specifications

Guaranteed Specifications at 0 to +65°C Case Temperature into a 50-ohm Load (Unless Otherwise Noted)

| Model No.  | AV-71220                      | AV-18326                       | AV-18030                       | AV-20040                        |
|--|-------------------------------|--------------------------------|--------------------------------|---------------------------------|
| Frequency Range, Min.                            | 12-20 GHz                     | 18-26.5 GHz                    | 18-30 GHz                      | 20-40 GHz                       |
| Power Output into 50-ohm Load, Min. at 25°C      | 40 mW/+16 dBm                 | 60 mW/+17.8 dBm                | 40 mW/+16 dBm                  | 10 mW/+10 dBm                   |
| Power Output Variation vs. Frequency, Max.       | 6.0 dB                        | 6.0 dB                         | 6.0 dB                         | 6.0 dB                          |
| Operating Case Temperature Range                 | 0° to +65°C                   | 0° to +65°C                    | 0° to +65°C                    | 0° to +65°C                     |
| Frequency Drift Over Operating Temperature, Max. | 40 MHz                        | 40 MHz                         | 60 MHz                         | 60 MHz                          |
| Pulling Figure (12 dB Return Loss), Typ.         | 0.5 MHz                       | 1.0 MHz                        | 1.0 MHz                        | 0.5 MHz                         |
| Pushing Figure, +15 VDC Supply, Typ.             | 0.1 MHz/V                     | 0.1 MHz/V                      | 0.1 MHz/V                      | 0.1 MHz/V                       |
| -5 VDC Supply, Typ.                              | N/A                           | N/A                            | N/A                            | N/A                             |
| Magnetic Susceptibility @ 60 Hz, Typ.            | 50 kHz/Gauss                  | 50 kHz/Gauss                   | 50 kHz Gauss                   | 50 kHz/Gauss                    |
| 2nd Harmonic, @ 25°C, Min.                       | -15 dBc                       | —                              | —                              | —                               |
| 3rd Harmonic, @ 25°C, Min.                       | —                             | —                              | —                              | —                               |
| Spurious Output, Min.                            | -60 dBc                       | -60 dBc                        | -60 dBc                        | -60 dBc                         |
| <b>Main Tuning Port Characteristics</b>          |                               |                                |                                |                                 |
| Sensitivity                                      | 18±1 MHz/mA                   | 30±1.5 MHz/mA                  | 30±1.5 MHz/mA                  | 40±2 MHz/mA                     |
| 3 dB Bandwidth, Typ.                             | 5 kHz                         | 5 kHz                          | 5 kHz                          | 2 kHz                           |
| Linearity, Typ.                                  | ±0.15%                        | ±0.05%                         | ±0.1%                          | ± 0.3%                          |
| Hysteresis, Typ.                                 | 12 MHz                        | 10 MHz                         | 18 MHz                         | 50 MHz                          |
| Input Impedance @ 1 kHz and 25°C, Typ.           | 6 ohms in series with 73 mH   | 10 ohms in series with 150 mH  | 6.5 ohms in series with 95 mH  | 10.5 ohms in series with 125 mH |
| <b>FM Port Characteristics</b>                   |                               |                                |                                |                                 |
| Sensitivity, Typ.                                | 450 kHz/mA                    | 425 kHz/mA                     | 425 kHz/mA                     | 400 kHz mA                      |
| 3 dB Bandwidth, Typ.                             | 1 MHz                         | 400 kHz                        | 400 kHz                        | 100 kHz                         |
| Deviation at 3 dB Bandwidth, Max.                | 70 MHz                        | 90 MHz                         | 90 MHz                         | 100 MHz                         |
| Input Impedance @ 1 MHz and 25°C, Typ.           | 0.5 ohm in series with 2.3 µH | 0.35 ohm in series with 2.0 µH | 0.35 ohm in series with 2.0 µH | 0.3 ohm in series with 1 µH     |
| <b>DC Circuit Power, Max.</b>                    |                               |                                |                                |                                 |
| +15±0.5V   | 200 mA                        | 200 mA                         | 200 mA                         | 250 mA                          |
| -5.0±0.1 V                                       | —                             | —                              | —                              | —                               |
| <b>YIG Heater Power</b>                          |                               |                                |                                |                                 |
| Input Voltage Range                              | 20 to 28 VDC                  | —                              | —                              | —                               |
| Power @ 25°C, Max.                               | 1.5 watts                     | —                              | —                              | —                               |
| Power @ 0°C, Max.                                | 2.0 watts                     | —                              | —                              | —                               |
| Weight, Max.                                     | 17 oz.                        | 20 oz.                         | 20 oz.                         | 17 oz.                          |
| Case Style                                       | M3-60                         | M5-60                          | M5-60                          | M5-60                           |

## Electrical and Performance Specifications

Guaranteed Specifications at 0 to +65°C Case Temperature into a 50-ohm Load (Unless Otherwise Noted)

| Model No.  | AV-26240M                        | AV-26240W                        | AV-33050                           |
|--|----------------------------------|----------------------------------|------------------------------------|
| Frequency Range, Min.                            | 26.5–40 GHz                      | 26.5–40 GHz                      | 33–50 GHz                          |
| Power Output into 50-ohm Load, Min. at 25°C      | 20 mW/+13 dBm                    | 20 mW/+13 dBm                    | 5 mW/+7 dBm                        |
| Power Output Variation vs. Frequency, Max.       | 4.0 dB                           | 4.0 dB                           | 6.0 dB                             |
| Operating Case Temperature Range                 | 0° to +65°C                      | 0° to +65°C                      | 0° to +65°C                        |
| Frequency Drift Over Operating Temperature, Max. | 60 MHz                           | 60 MHz                           | 60 MHz                             |
| Pulling Figure (12 dB Return Loss), Typ.         | 0.5 MHz                          | 0.5 MHz                          | 0.1 MHz                            |
| Pushing Figure, +15 VDC Supply, Typ.             | 0.1 MHz/V                        | 0.1 MHz/V                        | 0.1 MHz/V                          |
| –5 VDC Supply, Typ.                              | N/A                              | N/A                              | N/A                                |
| Magnetic Susceptibility @ 60 Hz, Typ.            | 50 kHz/Gauss                     | 50 kHz/Gauss                     | 50 kHz Gauss                       |
| 2nd Harmonic, @ 25°C, Min.                       | —                                | —                                | —                                  |
| 3rd Harmonic, @ 25°C, Min.                       | —                                | —                                | —                                  |
| Spurious Output, Min.                            | –60 dBc                          | –60 dBc                          | –60 dBc                            |
| <b>Main Tuning Port Characteristics</b>          |                                  |                                  |                                    |
| Sensitivity                                      | 40±2 MHz/mA                      | 40±2 MHz/mA                      | 50±3 MHz/mA                        |
| 3 dB Bandwidth, Typ.                             | 2 kHz                            | 2 kHz                            | 2 kHz                              |
| Linearity, Typ.                                  | ±0.1%                            | ±0.1%                            | ±0.2%                              |
| Hysteresis, Typ.                                 | 40 MHz                           | 40 MHz                           | 65 MHz                             |
| Input Impedance @ 1 kHz and 25°C, Typ.           | 6 ohms in series<br>with 90 mH   | 6 ohms in series<br>with 90 mH   | 10.5 ohms in series<br>with 130 mH |
| <b>FM Port Characteristics</b>                   |                                  |                                  |                                    |
| Sensitivity, Typ.                                | 430 kHz/mA                       | 430 kHz/mA                       | 400 kHz/mA                         |
| 3 dB Bandwidth, Typ.                             | 50 kHz                           | 50 kHz                           | 100 kHz                            |
| Deviation at 3 dB Bandwidth, Max.                | 100 MHz                          | 100 MHz                          | 100 MHz                            |
| Input Impedance @ 1 MHz and 25°C, Typ.           | 0.3 ohm in series<br>with 0.5 µH | 0.3 ohm in series<br>with 0.5 µH | 0.3 ohm in series<br>with 1 µH     |
| <b>DC Circuit Power, Max.</b>                    |                                  |                                  |                                    |
| +15±0.5V   | 150 mA                           | 150 mA                           | 150 mA                             |
| –5.0±0.1 V                                       | —                                | —                                | —                                  |
| <b>YIG Heater Power</b>                          |                                  |                                  |                                    |
| Input Voltage Range                              | —                                | —                                | —                                  |
| Power @ 25°C, Max.                               | —                                | —                                | —                                  |
| Power @ 0°C, Max.                                | —                                | —                                | —                                  |
| Weight, Max.                                     | 20 oz.                           | 20 oz.                           | 20 oz.                             |
| Case Style                                       | M5–60                            | M5–60WR28                        | M5–45WR22                          |