

YIG OSCILLATORS 2-8 GHz



FEATURES

- Miniature Packaging
- Super Temperature Stability
- Excellent Tuning Linearity $\pm 0.10\%$
- 2nd Harmonic 12 dB down
- All Other Spurious Signals 60 dB down
- Qualification to MIL-E-5400 Class II Specifications Available

APPLICATIONS

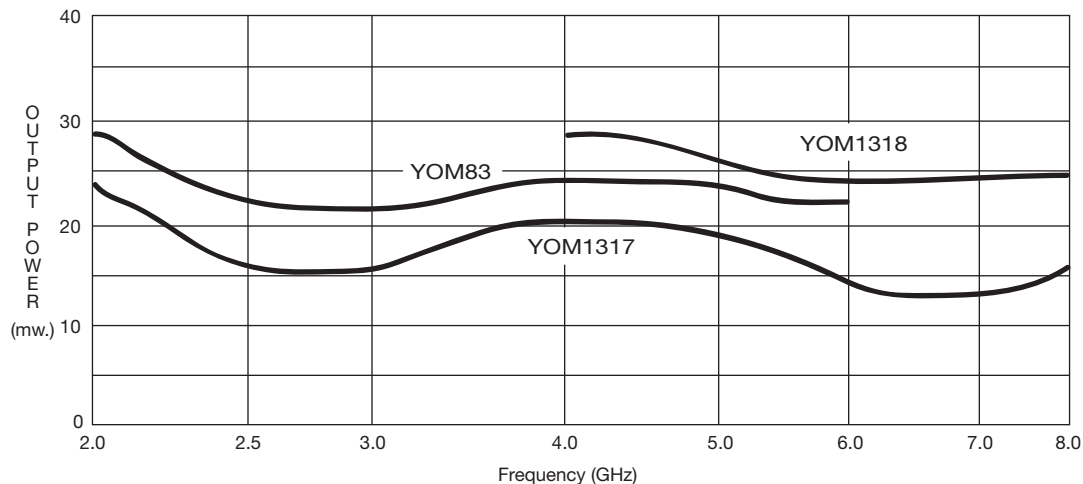
- ECM Systems
- Spectrum Analyzers
- Sweep Generators
- Frequency Synthesizers

DESCRIPTION

The Omniyig YOM Series provides fundamental YIG-tuned oscillator designs electronically tuned in octave and double octave bands. These units feature a novel coupling technique to provide maximum RF power output and a lower second harmonic and other spurious responses. The superb linearity of these oscillators is contributed by the ideal design of the magnetic circuit and the coupling technique used between the YIG sphere and the active element.

These oscillators are available in models covering the frequency ranges from 2 to 8.0 GHz. They are available in standard solid magnetic shell or in fast sweeping models. The electromagnetic circuit is driven from a current source and drivers are available that can be supplied as integral parts to the oscillator. A typical analog driver control input of 0 to 10 volts will tune the oscillator the full frequency band.

TYPICAL PERFORMANCE CURVES



ELECTRICAL SPECIFICATIONS

Model Number	UNITS	Standard Yig Oscillators			Fast Sweeping Yig Oscillators		
		YOM1317	YOM1318	YOM83	YOM1317F	YOM1318F	YOM83F
Frequency Range	GHz	2.0 - 8.0	4.0 - 8.0	2.0 - 6.0	2.0 - 8.0	4.0 - 8.0	2.0 - 6.0
RF Power Output (Minimum)	mW	20	20	20	20	20	20
RF Power Output Variation	dB	±3	±3	±3	±3	±3	±3
Pulling figure (VSWR 2:1)	MHz	0.5	0.5	0.5	0.5	0.5	0.5
Second Harmonic ¹	dBc	>12	>12	>12	>12	>12	>12
Other Spurious Signals	dBc	>60	>60	>60	>60	>60	>60
Frequency Drift (0° to +60°C)	MHz	±8	±8	±8	±8	±8	±8
Tuning Linearity	MHz	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%
Hysteresis	MHz	4	4	4	4	4	4
Tuning Speed		16mSec	16mSec	16mSec	500µSec.	500µSec.	500µSec.
Tuning Sensitivity (Typical)	MHz/mA	14	14	14	6	6	6
Coil Resistance (Typical)	ohm	10	10	10	2	2	2
Coil Inductance (Typical)	mH	60	60	60	30	30	30

MECHANICAL SPECIFICATIONS

Dimensions	1.75" DIA x 1.15"	1.69" x 1.99" x 1.99"
Output RF Connector (female)	3 mm	3 mm
DC Connector	Solder Pins	Solder Pins
Weight	10 oz	18 oz
Mounting (Tapped Holes x 4)	#6 - 32	#6 - 32

POWER SUPPLY REQUIREMENTS, all model numbers

Oscillator Supply	+15 Vdc @ 300 mA, (-5 V Vdc @ 50 mA If Required) Operating (typical)
Heater Supply	20 - 30 Vdc @ 150 mA, Steady State

NOTES:

1. We can provide YIG oscillators with -40 dBc Second Harmonic.
2. Yig drivers for above design are supplied in one integral package with oscillator.
Driver Control Voltage typical 0 - 10 volts.
Driver Power Requirements are +20 volts at 30 mA and -20 volts at 650 mA.
3. Other frequency ranges and double octave designs are available upon request.
4. Higher power outputs are available.

