

**MINIATURIZED/STANDARD  
and FAST SWITCHING  
MULTIOCTAVE DESIGNS**

## YIG OSCILLATORS

**0.5 TO 12.0 GHz**

**SIZES: 0.5 x 1 x 1 inch – 1 x 1 x 1 inch**



### 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
- Receivers
- Microwave Test Equipment

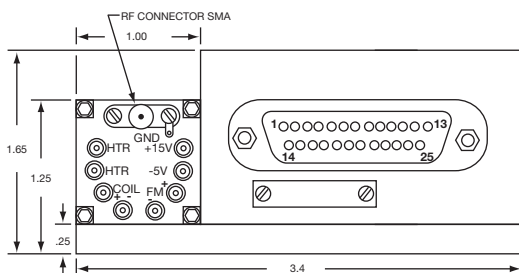
### DESCRIPTION

The OMNIYIG YOM Series provides fundamental YIG-Tuned oscillator designs in a very small package size electrically 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 0.5 to 12.0 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. We provide 12-bit digital drivers as integrated components with units that have electronic tunability.

### OUTLINE DRAWING No. 82742

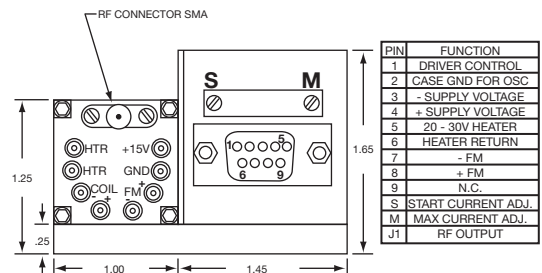
Standard 1" Cube Oscillator with Digital Driver



PIN	FUNCTION
1	BIT 1 MSB
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
14	+15V DC
16	-15V DC
18	$\pm 15V$ COMMON
20	GROUND
21	HTR 24 $\pm 4$ V
22	HTR RETURN
24	+FM COIL
25	-FM COIL

### OUTLINE DRAWING No. 82759

Standard 1" Cube Oscillator with Analog Driver



PIN	FUNCTION
1	DRIVER CONTROL
2	CASE GND FOR OSC
3	- SUPPLY VOLTAGE
4	+ SUPPLY VOLTAGE
5	20 - 30V HEATER
6	HEATER RETURN
7	- FM
8	+ FM
9	N.C.
S	START CURRENT ADJ.
M	MAX CURRENT ADJ.
J1	RF OUTPUT

## ELECTRICAL SPECIFICATIONS

Model Number	UNITS	YOM2977	YOM2978	YOM2979	YOM2980	YOM2981	YOM2982
Frequency Range <sup>1</sup>	GHz	0.5 - 2.0	1.0 - 4.0	2.0 - 6.0	4.0 - 11.0	2.0 - 10.0	6.0 - 12.0
RF Power Output (Minimum)	mW	20	20	20	20	20	20
RF Power Output Variation	dB	±2	±2	±2	±2	±2	±2
Pulling figure (VSWR 2:1)	MHz	0.5	0.5	0.5	0.5	0.5	0.5
Second Harmonic <sup>2</sup>	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	±12	±12	±12
Tuning Linearity	MHz	±0.2%	±0.2%	±0.2%	±0.2%	±0.2%	±0.2%
Hysteresis	MHz	2	2	4	4	4	4
Tuning Speed <sup>3</sup>	µSec	70	70	80	400	400	800
Tuning Sensitivity (Typical)	MHz/mA	10	10	15	15	15	15
Coil Resistance (Typical)	ohm	5	5	5	5	8	8
Coil Inductance (Typical)	mH	40	40	40	40	60	40

## MECHANICAL SPECIFICATIONS

Dimensions	0.5" x 1" x 1"	0.6" x 1" x 1"	0.6" x 1" x 1"	0.8" x 1" x 1"	0.8" x 1" x 1"	1" x 1" x 1"
Output RF Connector (female)	3 mm	3 mm	3 mm	3 mm	3 mm	3 mm
DC Connector	Solder Pins	Solder Pins	Solder Pins	Solder Pins	Solder Pins	Solder Pins
Weight	2 oz	2 oz	2 oz	2 oz	2 oz	2 oz
Mounting (Tapped Holes x 4)	#6 - 32	#6 - 32	#6 - 32	#6 - 32	#6 - 32	#6 - 32
Drawing (Yig Oscillator Only)	250-279-04	250-279-03	250-279-03	250-279-02	250-279-02	250-279-01

## POWER SUPPLY REQUIREMENTS, all model numbers

Oscillator Supply	+15 Vdc @ 125 mA
	Operating (typical)
Heater Supply	18 - 30 Vdc @ 100 mA, Steady State

### NOTES:

- We can provide YIG oscillators with -40 dBc Second Harmonic.
- YIG drivers for the above models are supplied in one integral package with oscillator. Driver analog control voltage typical 0 - 10 volts; digital drivers typical 12-bit. Driver power requirements are +15 volts @ 30 mA and -15 volts @ 650 mA.
- Full Band with 6 MHz of its final frequency.
- Other frequency ranges and double octave designs are available upon request.
- Higher power outputs are also available.

## OUTLINE DRAWING No. 250-279-xx

