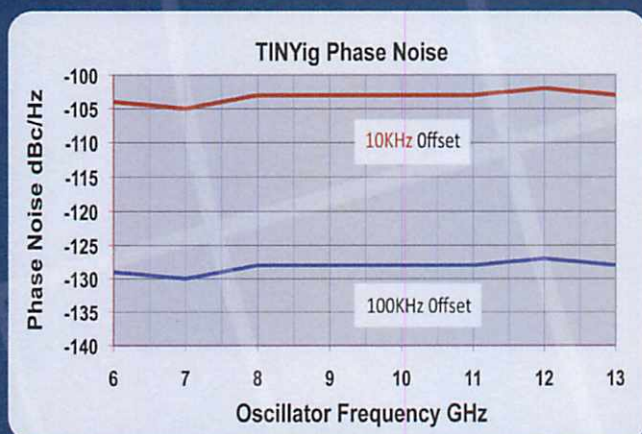


# Tiny YIG Oscillators

*Superior Phase Noise  
Frequency to 20 GHz*



Teledyne Microwave Solutions' YIG TO-8 oscillators exploit the principle of magnetic resonance to generate a clean low phase noise microwave signal over broad tuning ranges.

- Excellent Phase Noise
- Up to 20 GHz: 3 to 8, 8 to 16, and 10 to 20 GHz
- Permanent Magnet (PM)
- Surface Mount or PCB
- Low Power Consumption (single bias optional)

Available for Commercial applications: Synthesizers, Spectrum Analyzers, PXI Instrumentation, Bit Error Rate Testers, Signal Generators



**TELEDYNE MICROWAVE SOLUTIONS**  
Everywhere you look™

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# TINYig Oscillators

	FS2830R	FS2800R	FS2772R	FS2899R	FS2897R	FS2898R	FS2900R	FS2900R
<b>TUNING RANGE (GHz)</b>	<b>3-6</b>	<b>3-8</b>	<b>4-8</b>	<b>5-10</b>	<b>7-11</b>	<b>6-13</b>	<b>8-16</b>	<b>10-20.5</b>
Power Output (dBm)	6	6	6	6	5	4	3	6
Power Output Variation, max (dB)	5	6	4	4	7	7	7	13
Harmonics (dBc, max)	-12	-12	-12	-12	-12	-12	-12	-12
Non-Harmonic Spurious (dBc, max)	-70	-70	-70	-70	-70	-70	-70	-70
<b>PHASE NOISE dBc/Hz</b>								
@100KHz offset min.	-125	-125	-125	-125	-125	-125	-123	-118
@100KHz offset typ.	-128	-128	-130	-128	-128	-128	-125	-100
@10KHz offset min.	-100	-100	-100	-100	-100	-100	-98	-93
Temperature Drift (MHz, max) (0 to 60°C)	±45	±45	±45	±50	±50	±50	±60	±60
Tuning Linearity (MHz, max)	±2	±2	±2	±10	±20	±20	±45	±35
Hysteresis (MHz, max)	15	15	15	15	25	25	60	60
Frequency Pushing (MHz/V, max)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Frequency Pulling (1.5:1 VSWR, max)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>TUNING COIL</b>								
Sensitivity (MHz/mA) ±10%	8	8	8	8	9	12	11	8
Resistance (ohms, max)	7	7	7	7	6	7	10	11
Inductance (mH, max)	10	10	10	10	9	10	25	30
<b>OPTIONAL FM COIL</b>								
Sensitivity (KHz/mA, typ)	300	300	300	300	300	350	300	350
3 dB Bandwidth (KHz, typ)	400	400	400	400	400	400	400	400
Resistance (ohms, typ)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Inductance (uH, typ)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<b>BIAS CURRENT</b>								
+5 or 8 Volts (mA, max)	70	70	70	70	70	70	70	70
-5 Volts (mA, max)	20	20	20	20	N/A	N/A	N/A	N/A
<b>OUTLINE</b>								
PCB	1305981	1305981	1305981	1305981	IN-051697	IN-051698	IN-051699	IN-051699
Surface Mount	IN-050088	IN-050088	IN-050088	IN-050088	IN-051696	IN-051544	IN-051684	IN-051684



Available in PCB or Surface Mount, FSXXXXR-PCB or FSXXXXR-SMT.

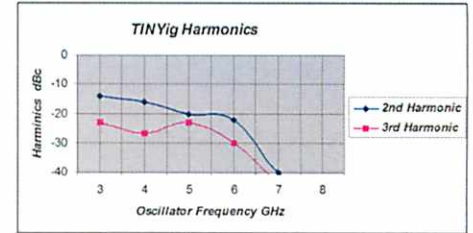
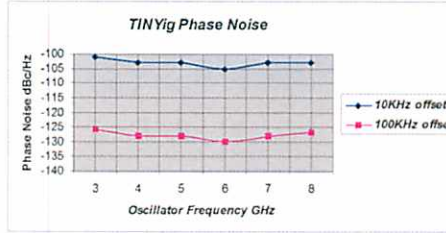
FM Coil Modulation BW available up to 2MHz.

Other Frequency bands available upon request.

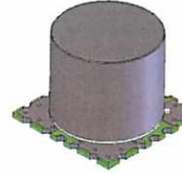
### TINYig Oscillator 3-8 GHz

Frequency Range: ..... 3-8 GHz  
 Guaranteed Phase Noise: ..... -125 dBc@100kHz  
 Power Output: ..... +6 dBm Minimum  
 Harmonics: ..... -12 dBc  
 Zero Current Frequency: ..... 5.5 GHz  $\pm$  300 MHz  
 Linearity: .....  $\pm$  5 MHz  
 Hysteresis: ..... 15 MHz  
 Main Coil Tuning Sensitivity: ..... 7.5 MHz/mA  
 Main Coil Resistance: ..... 6 Ohms  
 Main Coil Inductance: ..... 9 mH  
 Main Coil Modulation Bandwidth: ..... 25 kHz  
 Fm Coil Sensitivity: ..... 320 kHz/mA  
 Fm Coil Resistance: ..... 1 Ohm  
 Fm Coil Inductance: ..... 1 uH  
 Fm Coil Modulation Bandwidth: ..... 600 kHz  
 Bias +8v 70mA, -5V 20 mA

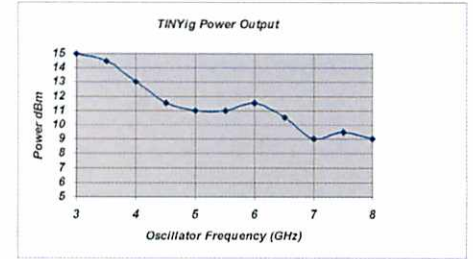
Weight: ..... 16 grams



TINYig PCB Version  
0.625" DIA x 0.500" TALL



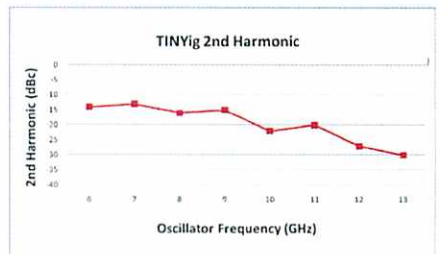
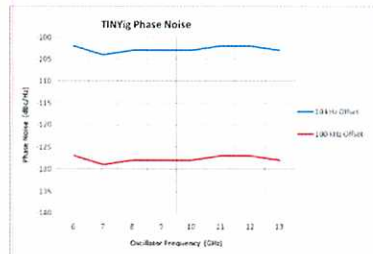
TINYig SMT Version  
0.7" x 0.7" X 0.530" TALL



### TINYig Oscillator 6-13GHz

Frequency Range: ..... 6-13 GHz  
 Guaranteed Phase Noise: ..... -125 dBc@100kHz  
 Power Output: ..... +4 dBm Minimum  
 Harmonics: ..... -12 dBc  
 Zero Current Frequency: ..... 9.25 GHz  $\pm$  300 MHz  
 Linearity: .....  $\pm$  20 MHz  
 Hysteresis: ..... 25 MHz  
 Main Coil Tuning Sensitivity: ..... 12 MHz/mA  
 Main Coil Resistance: ..... 7.5 Ohms  
 Main Coil Inductance: ..... 17 mH  
 Main Coil Modulation Bandwidth: ..... 25 kHz  
 Fm Coil Sensitivity: ..... 320 kHz/mA  
 Fm Coil Resistance: ..... 1 Ohm  
 Fm Coil Inductance: ..... 1 uH  
 Fm Coil Modulation Bandwidth: ..... 600 kHz  
 Bias ..... +5v 60mA

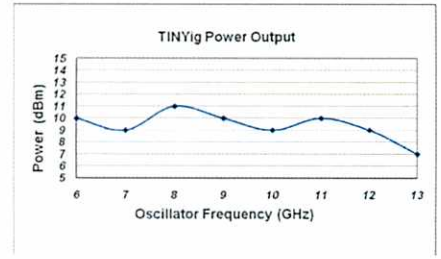
Weight: ..... 19 grams



TINYig PCB Version  
0.625" DIA x 0.600" TALL



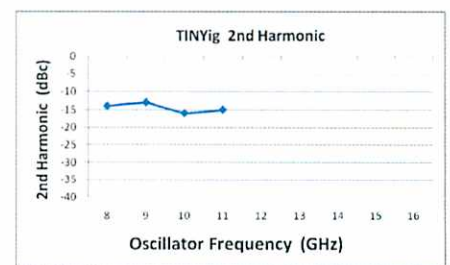
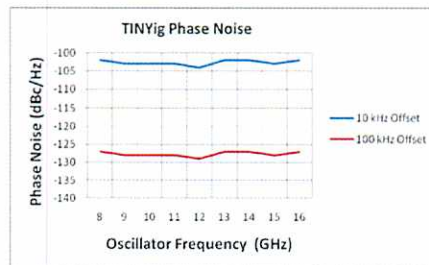
TINYig SMT Version  
0.7" x 0.7" X 0.630" TALL



### TINYig Oscillator 8-16 GHz

Frequency Range: ..... 8-16 GHz  
 Guaranteed Phase Noise: ..... -123 dBc@100kHz  
 Power Output: ..... +3 dBm Minimum  
 Harmonics: ..... -12 dBc  
 Zero Current Frequency: ..... 12 GHz  $\pm$  400 MHz  
 Linearity: .....  $\pm$  35 MHz  
 Hysteresis: ..... 60 MHz  
 Main Coil Tuning Sensitivity: ..... 12 MHz/mA  
 Main Coil Resistance: ..... 10.5 Ohms  
 Main Coil Inductance: ..... 25 mH  
 Main Coil Modulation Bandwidth: ..... 15 kHz  
 Fm Coil Sensitivity: ..... 320 kHz/mA  
 Fm Coil Resistance: ..... 1 Ohm  
 Fm Coil Inductance: ..... 1 uH  
 Fm Coil Modulation Bandwidth: ..... 600 kHz  
 Bias ..... +5v 60mA

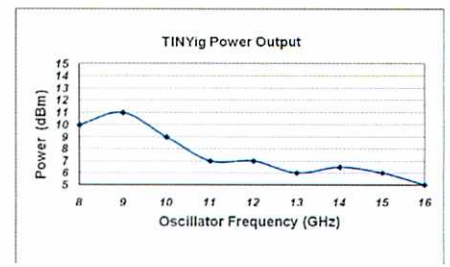
Weight: ..... 25 grams



TINYig PCB Version  
0.625" DIA x 0.750" TALL



TINYig SMT Version  
0.7" x 0.7" X 0.780" TALL



# YIG Oscillators

Model No.	Tuning Range (GHz)	Power Output (dBm min)	Variation (dB max)	Harmonics (dBc max)	Temp Drift (MHz max)	Tuning Linearity (% max)	Hysteresis (MHz max)	Phase Noise at 100KHz (dBc/Hz)
<b>Commercial YIG Tuned Oscillators</b>								
FS1062	2.0 to 8.0	14	±2.5	-12	15	±0.15	8	-120
FS1064	2.0 to 4.0	14	±2.0	-12	15	±0.1	2	-120
FS1066	4.0 to 8.0	14	±2.0	-12	20	±0.1	4	-120
FS1068	2.0 to 6.0	13	±2.0	-12	15	±0.1	2	-125
FS2637	8.0 to 18.0	13	±3.0	-12	30	±0.15	12	-125
FS2692	6.0 to 13.0	13	±2.5	-12	30	±0.25	10	-125
FS2678	12.0 to 20.0	10	±4.0	-12	30	±0.15	12	-125
FS2722	2.0 to 18.0	13	±3.5	-10	30	±0.15	15	-123
FS2788	2.0 to 20.0	8	±4.0	-8	30	±0.15	20	-110
<b>1" Cube Series or 0.5" PCB Mount</b>								
FS1022	2.0 to 8.0	14	±2.0	-12	20	±0.1	8	-120
FS1043	2.0 to 6.0	14	±2.0	-12	15	±0.08	6	-120
FS2950	3.0 to 6.0	13	±2.0	-12	10	±0.1	3	-125
FS3013	3.0 to 7.0	13	±2.0	-12	10	±0.1	3	-125
<b>1.25" Cube Series</b>								
FS2705	2.0 to 6.0	12	±2.0	-12	15	±0.15	8	Consult Factory
FS2706	2.0 to 8.0	12	±2.5	-12	15	±0.15	8	
FS2707	2.0 to 10.0	12	±2.5	-12	15	±0.15	8	
FS1036	5.0 to 18.0	10	±4.0	-10	20	±0.075	12	
FS1034	6.0 to 18.0	13	±3.0	-12	30	±0.075	12	
FS1035	8.0 to 18.0	13	±3.5	-12	20	±0.075	10	
<b>2" Cylindrical Series</b>								
FS1001	2.0 to 10.0	15	±2.0	-12	15	±0.15	8	Consult Factory
FS1012	6.0 to 18.0	16	±2.5	-12	20	±0.075	12	
FS1014	4.0 to 18.0	12	±2.5	-12	30	±0.075	14	

