

YIG FILTERS

**OCTAVE BAND
MULTI-OCTAVE
FAST SWITCHING
INTEGRAL DRIVERS
DUAL TRACKING**

FEATURES

- Low Insertion Loss, 2.0 dB in some Models.
- Frequency vs. Temperature Stability as Low as 5 MHz/60°C.
- Repeatable RF Performance from Unit to Unit.
- Package Sizes Typically 1.4 Inch³.
- Qualification to MIL-E-5400, Class II Specification Available.
- Integrated with Analog or 12-bit Digital Drivers.

APPLICATIONS

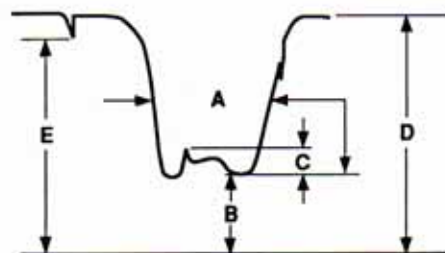
- Spectrum Analyzers
- Sweep Generators
- ECM Receivers
- Frequency Synthesizers
- Broadband Test Equipment

DESCRIPTION

OMNIYIG's standard line of bandpass YIG filters are electronically tunable from 500 MHz to 18 GHz. Twenty years of experience in YIG development have resulted in improved designs which exhibit excellent performance. Proprietary production techniques enable OMNIYIG to give each customer the highest quality YIG filters at very attractive prices.

These compact packaged solid-state devices provide outstanding tuning linearity over one to five octave bands. OMNIYIG manufactures integrated packages complete with YIG filter, oscillator, and analog or digital driver. All devices can be qualified to MIL-E-5400, Class II Specification.

PARAMETER DEFINITIONS



- A. 3 dB Bandwidth
- B. Insertion Loss
- C. Passband Ripple and Spurious Responses Combined
- D. Off Resonance Isolation
- E. Off Resonance Spurious

STANDARD OCTAVE BANDS⁽⁶⁾

TYPE 1, 2	OMNIYIG MODEL No. 3	FREQUENCY RANGE (GHz)	INSERTION LOSS (dB)	BANDWIDTH at 3 dB ⁴ (MHz)	OFF RESONANCE SPURIOUS MINIMUM (dB)	COMBINED PASSBAND RIPPLE & SPURIOUS MAXIMUM (dB)	FREQUENCY DRIFT 0° to 60° C (MHz)	OFF RESONANCE ISOLATION MINIMUM (dB)	DIMENSIONS CUBED (INCHES)	WEIGHT (oz)	FREQUENCY TRACKING BETWEEN CHANNELS (MHz)
2-STAGE	P102	0.5-1.0	4.0	17-30	30	1.0	5	45	1.4	9.8	—
	L102	1.0-2.0	3.5	24-35	30	1.5	5	45	1.4	9.8	—
	S102	2.0-4.0	2.5	25-40	25	1.5	5	50	1.4	9.8	—
	C102	4.0-8.0	2.5	25-40	25	1.5	9	50	1.4	9.8	—
	X102	8.0-12.4	2.5	25-40	25	1.5	10	50	1.69	17.5	—
	Ku102	12.4-18.0	2.5	30-45	25	1.5	12	45	1.69	17.5	—
3-STAGE	P103	0.5-1.0	5.0	14-25	35	1.0	5	70	1.4	9.8	—
	L103	1.0-2.0	3.5	20-35	35	1.5	5	70	1.4	9.8	—
	S103	2.0-4.0	3.0	20-35	30	1.5	5	70	1.4	9.8	—
	C103	4.0-8.0	3.0	25-40	30	1.5	9	70	1.4	9.8	—
	X103	8.0-12.4	3.0	25-40	30	1.5	10	70	1.69	17.5	—
	Ku103	12.4-18.0	3.5	30-45	30	1.5	12	65	1.69	17.5	—
4-STAGE	P104	0.5-1.0	6.0	12-23	38	1.0	5	80	1.4	9.8	—
	L104	1.0-2.0	4.5	20-35	38	1.5	5	80	1.4	9.8	—
	S104	2.0-4.0	4.0	20-35	38	1.5	5	80	1.4	9.8	—
	C104	4.0-8.0	4.0	25-40	38	1.5	9	80	1.4	9.8	—
	X104	8.0-12.4	4.0	25-40	38	1.5	10	80	1.69	17.5	—
	Ku104	12.4-18.0	4.0	28-45	38	1.5	12	80	1.69	17.5	—
DUAL 2-STAGE (Per Channel)	P1022	0.5-1.0	3.5	17-30	30	1.0	5	45	1.4	9.8	5
	L1022	1.0-2.0	3.5	24-35	30	1.5	5	45	1.4	9.8	6
	S1022	2.0-4.0	2.5	25-40	25	1.5	5	50	1.4	9.8	6
	C1022	4.0-8.0	2.5	25-40	25	1.5	9	50	1.4	9.8	7
	X1022	8.0-12.4	2.5	25-40	25	1.5	10	50	1.69	17.5	8
	Ku1022	12.4-18.0	2.5	30-45	25	1.5	12	45	1.69	17.5	7

STANDARD MULTI-OCTAVE BANDS⁽⁶⁾

2-STAGE	M102 ⁵	1.0-12.4	5.0	25-60	25	2.5	13	50	1.69	17.5	—
3-STAGE	M103 ⁵	1.0-12.4	6.5	25-60	33	2.5	13	70	1.69	17.5	—
4-STAGE	M104B	4.0-18.0	5.0	25-60	30	2.5	13	80	1.69	17.5	—
DUAL 2-ST.	M1022	2.0-12.4	5.0	25-55	30	2.0	13	50	1.69	17.5	10
3-STAGE	M203 ⁵	1.0-18.0	6.5	25-70	30	2.5	13	70	1.69	17.5	—
2-STAGE	M1611	1.0-18.0	5.5	25-65	25	2.5	13	52	1.69	17.5	—
4-STAGE	M1612	2.0-18.0	6.5	25-65	40	2.5	13	80	1.69	17.5	—

YIG FILTERS FAST SWITCHING ($<300 \mu\text{Secs.}$)⁽⁶⁾⁽⁷⁾

2-STAGE	P102F	0.5-1.0	5.5	17-30	30	1.5	7	50	1.7	18	—
	L102F	1.0-2.0	3.5	25-40	25	1.5	7	50	1.7	18	—
	S102F	2.0-4.0	3.0	20-35	25	1.5	10	50	1.7	18	—
	C102F	4.0-8.0	2.5	25-40	25	1.5	12	50	1.7	18	—
	X102F	8.0-12.4	2.5	25-40	25	1.5	12	45	1.7	18	—
	4-STAGE	P104F	0.5-1.0	5.0	12-23	38	1.75	7	80	1.7	18
L104F		1.0-2.0	5.0	20-40	38	1.75	7	80	1.7	18	—
S104F		2.0-4.0	4.0	20-40	38	1.75	10	80	1.7	18	—
C104F		4.0-8.0	4.0	20-40	38	1.75	12	80	1.7	18	—
X104F		8.0-12.4	4.0	20-40	38	1.75	12	80	1.7	18	—
DUAL 2-STAGE (Per Channel)		P1022F	0.5-1.0	3.5	17-30	30	1.5	7	50	1.7	18
	L1022F	1.0-2.0	3.5	20-40	25	1.5	7	50	1.7	18	6
	S1022F	2.0-4.0	3.0	20-35	25	1.5	10	50	1.7	18	7
	C1022F	4.0-8.0	2.5	25-40	25	1.5	12	50	1.7	18	8
	X1022F	8.0-12.4	2.5	25-40	25	1.5	12	45	1.7	18	9

NOTES:

- All connectors are standard 3mm (SMA) female.
- Maximum isolation between channels is 50 dB.
- Limiting levels for all units are greater than +10 dBm.
- Nominal bandwidths, other bandwidths are available.
- Limiting level is -23 dBm from 1.0 to 1.8 GHz and greater than +10 dBm from 1.8 to 12.4 GHz.
- Deviation from linear $\pm 0.1\%$.
- Sweeping time required for bandpass to stabilize within 0.2% of full band step.
- All units can be qualified to MIL-E-5400, Class II Specification on special order.