Dual 4-STAGE

YIG FILTERS

with By-Pass Switch

OCTAVE BAND
MULTI-OCTAVE
FAST SWITCHING
INTEGRAL DRIVERS
DUAL TRACKING ±4 MHz

FEATURES
- Low/Insertion Loss, 3.0 dB in some Models.
- Frequency vs. Temperature as Low as 5 MHz/60° C.
- Repeatable RF Performance from Unit to Unit.
- Package Sizes Typically 1.4 inch³ and 1.7 inch³ for Filters.
- Qualification to MIL-E-5400, Class II Specification Available.

APPLICATIONS
- Telecommunications
- Spectrum Analyzers
- Sweep Generators
- ECM Receivers
- Frequency Synthesizers
- Broadband Test Equipment
- Multi-octave Receivers

DESCRIPTION
OMNIYIG’s latest standard line of dual 4-stage, bandpass YIG filters are electronically tunable from 500 MHz to 26 GHz. These units are also provided with a bypass switch with TTL-1, thus bypassing the YIG filter. Insertion loss is very low across the frequency band of interest. Twenty-five years of experience in YIG development has 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.

YIG FILTER PARAMETER DEFINITIONS

A. INSERTION LOSS
Loss in excess of straight transmission.

B. PASS BAND RIPPLE
Over coupling variations in peak response of pass band.

C. PASS BAND SPURIOUS
Magnetostatic mode pass band interference.

D. BANDWIDTH
Half power (3 dB) width of response when measured from peak.

E. OFF RESONANCE SPURIOUS
Spurious or magnetostatic modes down to a total of 5 dB affecting skirt response.

F. OFF RESONANCE ISOLATION
Attenuation outside band of filter response.
### STANDARD OCTAVE BANDS

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Frequency Range (GHz)</th>
<th>Insertion Loss (dB)</th>
<th>Bandwidth at 3 dB² (MHz)</th>
<th>Combined Off Resonance Spurious Minimum (dB)</th>
<th>Passband Ripple 25° C</th>
<th>Frequency Drift 25° to 60° C (MHz)</th>
<th>Off Resonance Isolation Minimum (dB)</th>
<th>Dimensions Cubed (inches)</th>
<th>Weight (oz)</th>
<th>Frequency Tracking Between Channels (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL</td>
<td>M1841</td>
<td>0.5 - 1.0</td>
<td>6.5</td>
<td>12 - 23</td>
<td>60</td>
<td>1.0</td>
<td>5</td>
<td>100</td>
<td>1.4</td>
<td>9.8</td>
<td>5</td>
</tr>
<tr>
<td>4-STAGE</td>
<td>M1842</td>
<td>1.0 - 2.0</td>
<td>5.5</td>
<td>20 - 35</td>
<td>60</td>
<td>1.5</td>
<td>5</td>
<td>100</td>
<td>1.4</td>
<td>9.8</td>
<td>6</td>
</tr>
<tr>
<td>(Per</td>
<td>M1843</td>
<td>2.0 - 4.0</td>
<td>5.0</td>
<td>20 - 35</td>
<td>60</td>
<td>1.5</td>
<td>6</td>
<td>100</td>
<td>1.4</td>
<td>9.8</td>
<td>6</td>
</tr>
<tr>
<td>Channel)</td>
<td>M1844</td>
<td>4.0 - 8.0</td>
<td>4.5</td>
<td>25 - 40</td>
<td>60</td>
<td>1.5</td>
<td>9</td>
<td>100</td>
<td>1.4</td>
<td>9.8</td>
<td>7</td>
</tr>
<tr>
<td>(Per</td>
<td>M1845</td>
<td>8.0 - 12.4</td>
<td>4.5</td>
<td>25 - 40</td>
<td>60</td>
<td>1.5</td>
<td>10</td>
<td>100</td>
<td>1.4</td>
<td>9.8</td>
<td>7</td>
</tr>
<tr>
<td>Channel)</td>
<td>M1846</td>
<td>12.4 - 18.0</td>
<td>4.5</td>
<td>29 - 45</td>
<td>60</td>
<td>1.0</td>
<td>12</td>
<td>100</td>
<td>1.69</td>
<td>17.5</td>
<td>7</td>
</tr>
<tr>
<td>BYPASS</td>
<td>M18475</td>
<td>0.5 - 1.0</td>
<td>6.5</td>
<td>17 - 35</td>
<td>35</td>
<td>1.0</td>
<td>5</td>
<td>70</td>
<td>1.4</td>
<td>9.8</td>
<td>5</td>
</tr>
<tr>
<td>SWITCH</td>
<td>M18485</td>
<td>1.0 - 2.0</td>
<td>6.0</td>
<td>24 - 40</td>
<td>35</td>
<td>1.5</td>
<td>5</td>
<td>70</td>
<td>1.4</td>
<td>9.8</td>
<td>6</td>
</tr>
<tr>
<td>w/ DUAL</td>
<td>M18495</td>
<td>2.0 - 4.0</td>
<td>5.5</td>
<td>30 - 45</td>
<td>30</td>
<td>1.5</td>
<td>5</td>
<td>70</td>
<td>1.4</td>
<td>9.8</td>
<td>6</td>
</tr>
<tr>
<td>4-STAGE</td>
<td>M18505</td>
<td>4.0 - 8.0</td>
<td>5.5</td>
<td>30 - 45</td>
<td>30</td>
<td>1.5</td>
<td>9</td>
<td>70</td>
<td>1.4</td>
<td>9.8</td>
<td>7</td>
</tr>
<tr>
<td>(Per</td>
<td>M18515</td>
<td>8.0 - 12.4</td>
<td>5.5</td>
<td>35 - 50</td>
<td>30</td>
<td>1.5</td>
<td>10</td>
<td>70</td>
<td>1.69</td>
<td>17.5</td>
<td>8</td>
</tr>
<tr>
<td>Channel)</td>
<td>M18525</td>
<td>12.4 - 18.0</td>
<td>5.5</td>
<td>35 - 50</td>
<td>30</td>
<td>1.5</td>
<td>10</td>
<td>70</td>
<td>1.69</td>
<td>17.5</td>
<td>7</td>
</tr>
</tbody>
</table>

### STANDARD MULTI-OCTAVE BANDS

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Frequency Range (GHz)</th>
<th>Insertion Loss (dB)</th>
<th>Bandwidth at 3 dB² (MHz)</th>
<th>Combined Off Resonance Spurious Minimum (dB)</th>
<th>Passband Ripple 25° C</th>
<th>Frequency Drift 25° to 60° C (MHz)</th>
<th>Off Resonance Isolation Minimum (dB)</th>
<th>Dimensions Cubed (inches)</th>
<th>Weight (oz)</th>
<th>Frequency Tracking Between Channels (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL</td>
<td>M1853</td>
<td>0.5 - 2.0</td>
<td>7.0</td>
<td>12 - 26</td>
<td>60</td>
<td>2.5</td>
<td>13</td>
<td>100</td>
<td>1.69</td>
<td>17.5</td>
<td>5</td>
</tr>
<tr>
<td>4-STAGE</td>
<td>M1854</td>
<td>2.0 - 8.0</td>
<td>6.0</td>
<td>20 - 40</td>
<td>60</td>
<td>2.5</td>
<td>13</td>
<td>100</td>
<td>1.69</td>
<td>17.5</td>
<td>5</td>
</tr>
<tr>
<td>(Per</td>
<td>M1855</td>
<td>6.0 - 18.0</td>
<td>6.0</td>
<td>30 - 60</td>
<td>60</td>
<td>2.5</td>
<td>13</td>
<td>100</td>
<td>1.69</td>
<td>17.5</td>
<td>5</td>
</tr>
<tr>
<td>Channel)</td>
<td>M1856</td>
<td>4.0 - 18.0</td>
<td>6.0</td>
<td>30 - 50</td>
<td>60</td>
<td>2.0</td>
<td>13</td>
<td>100</td>
<td>1.69</td>
<td>17.5</td>
<td>10</td>
</tr>
<tr>
<td>Channel)</td>
<td>M1857</td>
<td>2.0 - 18.0</td>
<td>6.5</td>
<td>25 - 60</td>
<td>60</td>
<td>2.5</td>
<td>13</td>
<td>100</td>
<td>1.69</td>
<td>17.5</td>
<td>10</td>
</tr>
</tbody>
</table>

### OUTLINE A

![Outline A Diagram]

### OUTLINE B

![Outline B Diagram]

### NOTES:

1. All connectors are standard 3mm (SMA) female.
2. Limiting levels for all units are greater than +10 dBm.
3. Nominal bandwidths, other bandwidths are available.
4. Deviation from linearity 0.1%.
5. Sweeping time required for bandpass to stabilize within 0.2% of full band step. 20 ms. fast switching models available.
6. All units can be qualified to MIL-E-5400, Class II Specification on special order.
7. Data per channel.