Tandem-Rotator Reciprocal X-Band Ferrite Switch

DATA SHEET

Specifications

Weight ............................................ 1.6 lbs./726 grams
Peak Power ........................................ 50 kW
Average Power ................................... 100 W
Insertion Loss .................................... 0.5 dB
Return Loss ....................................... 17.7 dB
Isolation .......................................... 25 dB
Operating Frequency ....................... 8.5 to 9.5 GHz
Operating Temperature .............. -30°C to +60°C
RF Switching Speed ...................... <25 µsec

The Tandem-Rotator Reciprocal X-Band Ferrite Switch uses 0° and 90° total Faraday Rotation states to achieve reciprocal connections to the desired ports. This structure operates at moderate isolation levels and moderate peak and average power levels compared with MAG bridge-type switches, but provides a smaller and less expensive package.
Tandem-Rotator Reciprocal X-Band Ferrite Switch

MEASUREMENT DATA

<table>
<thead>
<tr>
<th>Insertion Loss</th>
<th>Return Loss</th>
<th>Isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PORT 3</td>
<td>PORT 1 TO PORT 3</td>
<td>PORT 2</td>
</tr>
<tr>
<td>INSERTION LOSS (dB)</td>
<td>RETURN LOSS (dB)</td>
<td>ISOLATION (dB)</td>
</tr>
<tr>
<td>0</td>
<td>-6</td>
<td>-25</td>
</tr>
<tr>
<td>-0.4</td>
<td>0</td>
<td>-1.93</td>
</tr>
<tr>
<td>-0.8</td>
<td>-6</td>
<td>-25</td>
</tr>
<tr>
<td>-1.2</td>
<td>2</td>
<td>-1.93</td>
</tr>
</tbody>
</table>

FREQUENCY (GHz)

OUTLINE DRAWING

NOTES
1. EXTERIOR HOUSINGS AND WAVEGUIDES ARE AL ALY
   WITH MIL-C-5541, CL 1A CONVERSION COATING.
2. EXTERIOR HARDWARE IS STAINLESS STEEL.
3. PORTS ARE WR90 FLANGES WITH STANDARD
   THREADED HOLE PATTERN.
4. WEIGHT: 1.6 POUNDS, 726 GRAMS.
5. DIMENSIONS IN INCHES, MILLIMETERS.

TABLE 1

<table>
<thead>
<tr>
<th>POS</th>
<th>FUNCTION</th>
<th>POS</th>
<th>FUNCTION</th>
<th>POS</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DIRECTION +</td>
<td>4</td>
<td>GROUND</td>
<td>7</td>
<td>ENABLE –</td>
</tr>
<tr>
<td>2</td>
<td>ENABLE +</td>
<td>5</td>
<td>28 V</td>
<td>8</td>
<td>BIT –</td>
</tr>
<tr>
<td>3</td>
<td>BIT +</td>
<td>6</td>
<td>DIRECTION –</td>
<td>9</td>
<td>GROUND</td>
</tr>
</tbody>
</table>

AIRBORNE MM-222-009-213-2200 9-POSITION CONNECTOR
SEE TABLE 1

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