Ceramic Frequency Mixer

WIDE BAND

MCA1-85+

Level 7 (LO Power +7 dBm) 2800 to 8500 MHz

Maximum Ratings

Operating Temperature -55°C to 100°C
Storage Temperature -55°C to 100°C
RF Power 50 mW
IF Current 40 mA

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

LO 10
RF 5
IF 3
GROUND 1,2,4,6,7,8,9

Outline Drawing

Electrical Specifications (T_{AMB}=-55°C to 100°C)

<table>
<thead>
<tr>
<th>FREQUENCY (MHz)</th>
<th>CONVERSION LOSS (dB)</th>
<th>LO-RF ISOLATION (dB)</th>
<th>LO-IF ISOLATION (dB)</th>
<th>IP3 at center band (dBm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2800-8500</td>
<td>DC-1250</td>
<td></td>
<td></td>
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<tr>
<td>2800-5000</td>
<td>DC-1250</td>
<td>5.5</td>
<td>0.2</td>
<td>8.1*</td>
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<td>5000-8500</td>
<td>DC-1250</td>
<td>5.2</td>
<td>0.2</td>
<td>8.2*</td>
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</table>

Typical Performance Data

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Conversion Loss (dB)</th>
<th>Isolation L-R (dB)</th>
<th>Isolation L-I (dB)</th>
<th>VSWR RF Port (1)</th>
<th>VSWR LO Port (1)</th>
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</thead>
<tbody>
<tr>
<td>2800.10</td>
<td>2770.10</td>
<td>5.89</td>
<td>36.81</td>
<td>10.35</td>
<td>2.20</td>
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<tr>
<td>3000.10</td>
<td>2970.10</td>
<td>5.74</td>
<td>39.38</td>
<td>11.75</td>
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<td>3500.10</td>
<td>3470.10</td>
<td>5.29</td>
<td>38.41</td>
<td>13.58</td>
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<td>4000.10</td>
<td>3970.10</td>
<td>6.48</td>
<td>40.21</td>
<td>13.89</td>
<td>2.33</td>
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<td>4500.10</td>
<td>4470.10</td>
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<td>31.07</td>
<td>17.67</td>
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<td>37.03</td>
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<td>40.91</td>
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<td>37.20</td>
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<td>36.09</td>
<td>48.61</td>
<td>1.78</td>
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<td>5.51</td>
<td>36.10</td>
<td>44.52</td>
<td>1.81</td>
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<td>8470.10</td>
<td>5.59</td>
<td>36.07</td>
<td>42.59</td>
<td>1.80</td>
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</tbody>
</table>

Recommended Replacement: MAC-85+

Features

• wide bandwidth, 2800 to 8500 MHz
• low conversion loss, 5.6 dB typ.
• high L-R isolation, 35 dB typ.
• LTCC double balanced mixer
• aqueous washable
• low cost
• low profile, 0.08"
• protected by US Patent 7,027,795

Applications

• satellite up and down converters
• line of sight links
• defense radar
• defense communication

Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
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Performance Charts

MCA1-85+

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Performance Charts

MCA1-85+

CONVERSION LOSS

CONVERSION LOSS (VARIABLE IF)

L-R ISOLATION

L-I ISOLATION

RF VSWR

LO VSWR

IF VSWR

IP3

at IF Freq of 30 MHz

LO=+4 dBm
LO=+7 dBm
LO=+10 dBm

LO=+4 dBm
LO=+7 dBm
LO=+10 dBm

LO=+4 dBm
LO=+7 dBm
LO=+10 dBm

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LO=+10 dBm

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LO=+10 dBm

LO=+4 dBm
LO=+7 dBm
LO=+10 dBm