

# Open Carrier Frequency Doubler For Microwave Telecommunications



Rev. V2

### Features

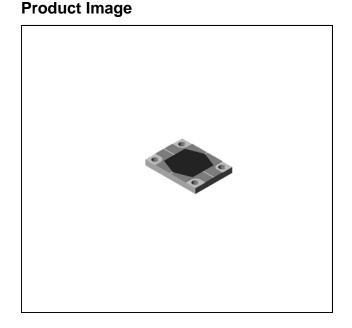
- INPUT: 3.5 TO 8.0 GHz
- OUTPUT: 7.0 TO 16.0 GHz
- INPUT DRIVE LEVEL +10 dBm (NOMINAL)
- MICROSTRIP INTERFACE

### Description

The FDC2710 is a passive bridge diode frequency doubler, designed for use in the high volume commercial and test equipment applications. The design utilizes Schottky bridge quad diodes and broadband baluns to attain excellent performance. The use of high temperature solder and welded assembly processes used internally makes it ideal for use in semi-automated and automated assembly. Environmental screening available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

## **Ordering Information**

| Part Number | Package      |  |
|-------------|--------------|--|
| FDC2710     | Open Carrier |  |



# Electrical Specifications: $Z_0 = 50\Omega$ $P_{in} = +10$ dBm

| Decomotor                           | Test Conditions  | Units -        | Typical              | Guaranteed           |                      |
|-------------------------------------|--|----------------|----------------------|----------------------|----------------------|
| Parameter                           | rest conditions  |                |                      | +25⁰C                | -40º to +85ºC        |
| SSB Conversion Loss<br>(max)        | $f_{in} = 3.5 \text{ to } 4.5 \text{ GHz}$<br>$f_{in} = 4.5 \text{ to } 7.0 \text{ GHz}$<br>$f_{in} = 7.0 \text{ to } 8.0 \text{ GHz}$ | dB<br>dB<br>dB | 13.0<br>10.2<br>11.2 | 14.0<br>12.5<br>13.5 | 14.5<br>13.0<br>14.0 |
| Fundamental<br>Suppression (min)    | f <sub>in</sub> = 3.5 to 6.5 GHz<br>f <sub>in</sub> = 6.5 to 8.0 GHz   | dBc<br>dBc     | 40<br>40             | 28<br>30             | 26<br>28             |
| Third Harmonic<br>Suppression (min) | f <sub>in</sub> = 6.5 to 8.0 GHz   | dBc            | 50                   | 40                   | 38                   |

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Visit www.macomte

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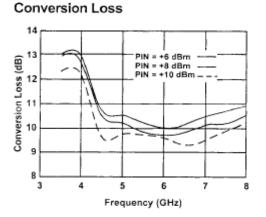
Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples indonest or to are may be available Commitment to produce in volume is not outparanteed.

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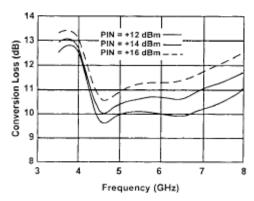
# FDC2710

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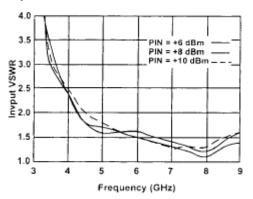
# **Typical Performance Curves**



### Conversion Loss

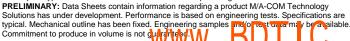


Input VSWR



#### 2

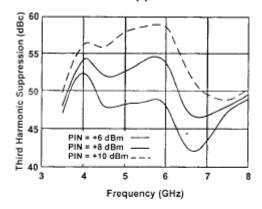
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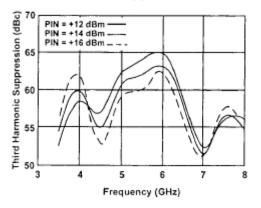


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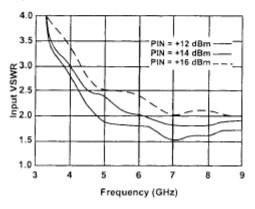
### Third Harmonic Suppression



### Third Harmonic Suppression







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and may be available. MA-COM Technol. gy Solutions not an driss diffiliates reserve the right to make Changes to the productis) on more tion contained herein without notice.



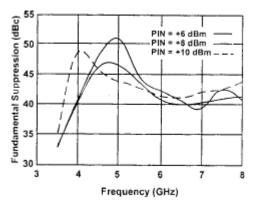
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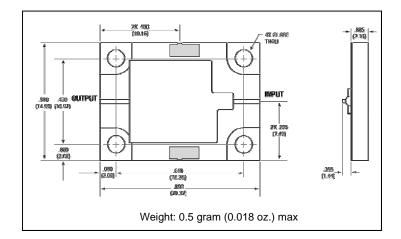
# **Absolute Maximum Ratings**

| Parameter             | Absolute Maximum                            |  |  |
|-----------------------|---|--|--|
| Operating Temperature | -54ºC to +100ºC                             |  |  |
| Storage Temperature   | -65ºC to +100ºC                             |  |  |
| Peak Input Power      | +23 dBm max @ +25⁰C<br>+20 dBm max @ +100⁰C |  |  |
| Peak Input Current    | 50 mA DC                                    |  |  |

### Fundamental Suppression



# **Outline Drawing: Open Carrier**

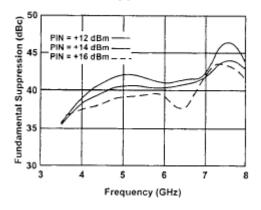


Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified. \*

# Fundamental Suppression

typical. Mechanical outline has been fixed. Engineering samples

Commitment to produce in volume is not gu



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