

# Double Balanced Mixer

## Ultra-Broadband

# Model MM9xMS-1

# Model MM9xMS-17

## RF 1.8 to 20.0 GHz

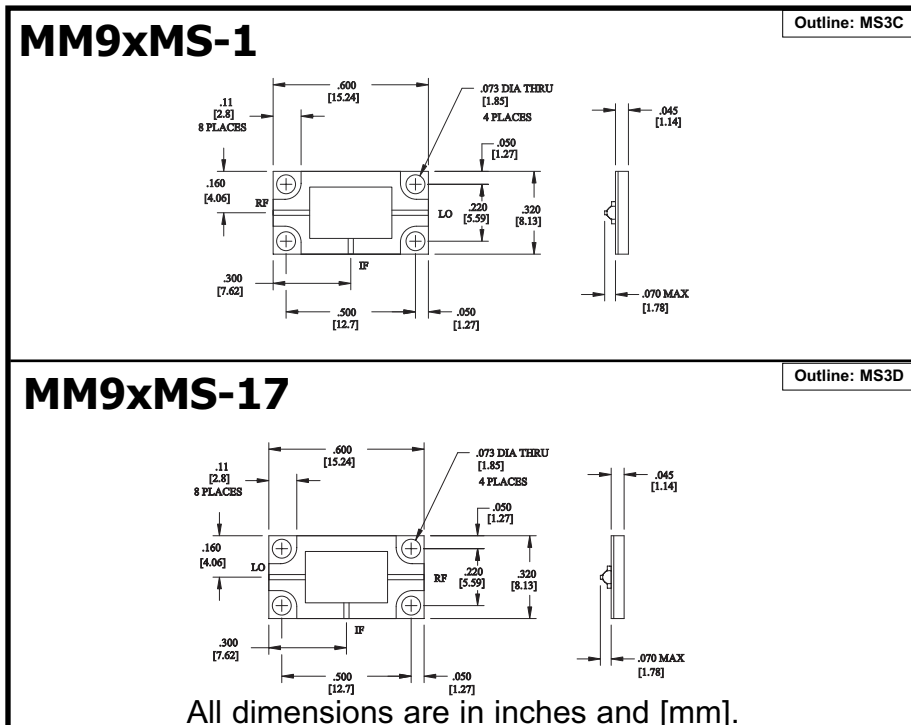
### Electrical Specifications <sup>(1)</sup>:

| Parameter                                      | Conditions                           |          |         | Specifications |  |                              |
|--|--------------------------------------|----------|---------|----------------|--|------------------------------|
|  | RF(GHz)                              | LO(GHz)  | IF(MHz) | Min            | Typical                                  | Max                          |
| <b>SSB Conversion loss:</b> <sup>(2) (3)</sup> | 3.0-19.0                             | 3.0-19.0 | DC-400  |                | 5.5 dB                                   | 7.5 dB                       |
|  | 1.8-20.0                             | 1.8-20.0 | DC-400  |                | 5.8 dB                                   | 8.5 dB                       |
|  | 1.8-20.0                             | 1.8-20.0 | DC-800  |                | 7.2 dB                                   | 10.5 dB                      |
| <b>Isolation</b>                               | <b>LO to RF:</b><br><b>LO to IF:</b> | 1.8-20.0 |         | 20 dB          | 28 dB                                    |                              |
|  |                                      | 4.0-19.0 |         | 15 dB          | 23 dB                                    |                              |
|  |                                      | 1.8-20.0 |         | 12 dB          | 22 dB                                    |                              |
|  | <b>RF to IF:</b><br><b>IF to RF:</b> | 1.8-20.0 | DC-800  |                | 28 dB<br>40 dB                           |                              |
| <b>Input 1-dB Compression Point:</b>           | 1.8-20.0                             | 1.8-20.0 | DC-800  |                | +2 dBm<br>+5 dBm<br>+8 dBm<br>+12 dBm    | MM93<br>MM94<br>MM96<br>MM97 |
| <b>Input Third Order Intercept Point:</b>      | 1.8-20.0                             | 1.8-20.0 | DC-800  |                | +11 dBm<br>+14 dBm<br>+17 dBm<br>+23 dBm | MM93<br>MM94<br>MM96<br>MM97 |
| <b>LO Power:</b> <sup>(4)</sup>                | 1.8-20.0                             | 1.8-20.0 | DC-800  |                | +7 dBm<br>+10 dBm<br>+14 dBm<br>+18 dBm  | MM93<br>MM94<br>MM96<br>MM97 |

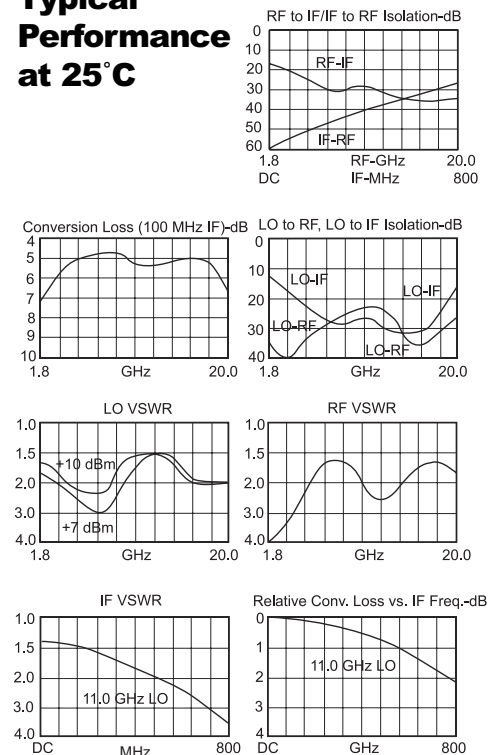
**LO Power**  
 3 = +7 dBm  
 4 = +10 dBm  
 6 = +14 dBm  
 7 = +19 dBm

**Notes:**

- Specifications are guaranteed when tested as a downconverter in a 50 Ohm system at +25°C with the nominal LO power. Specifications indicated as typical are not guaranteed.
- Noise figure is typically within ±0.5 dB of conversion loss for IF frequencies greater than 10 MHz.
- Conversion loss typically degrades less than 0.5 dB at +100°C and improves less than 0.5 dB at -55°C.
- Usable LO drives are up to 2 dB below and 3 dB above nominal.
- See Application Note M112, for aid in selecting the outline and for mounting and installation information.



### Typical Performance at 25°C



Mixers