

BSTMX18-2840

28-40 GHz Image Reject Mixer

Data Sheet

I. Product Introduction

BSTMX18-2840 is an I/Q image rejection mixer chip that integrates two passive double-balanced mixers and a 90° quadrature bridge. The I/Q ports output intermediate frequency signals with consistent amplitudes and a 90° phase difference. Image rejection is achieved by using a low-frequency quadrature coupler off-chip.

II. Key Technical Indicators

- | | |
|---------------------------|--------------|
| • RF and LO range: | 28-40GHz |
| • IF range: | DC-6GHz |
| • Conversion loss: | 10dB |
| • Local oscillator power: | 17dBm |
| • LO/RF isolation: | 35dB |
| • Image suppression: | 25dBc |
| • Chip size: | 1.35mmx0.9mm |

III. Application Areas

- Radar
- Communications
- Instruments

IV. Absolute Maximum Ratings (Temperature = 25 °C Unless Otherwise Stated)

Table 1

PARAMETER	LIMIT VALUE
Maximum input power	+20dBm
Storage temperature	-65 °C ~ +150 °C
Operating temperature	-55 °C ~ +125 °C

V. Electrical Parameters (Temperature = 25 °C – RF Performance Tested On-Wafer)

Table 2

INDEX	MINIMUM	TYPICAL VALUES	MAXIMUM
RF & LO frequency (GHz)	28 ~ 40		
IF frequency (GHz)	DC ~ 6		
Conversion loss (dB)	—	10	—
LO~RF isolation (dB)	—	35	—
LO~IF isolation (dB)	—	35	—
RF~IF isolation (dB)	—	36	—

VI. Overall and Port Dimensions (mm)

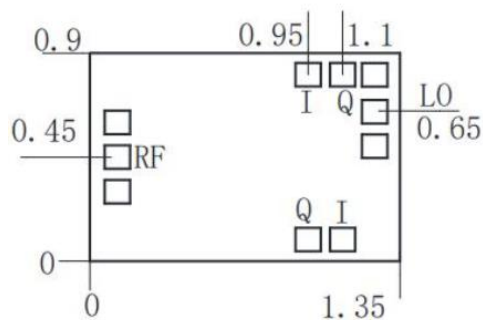


Figure 1

VII. Precautions

- The chip should be stored in a dry, nitrogen-filled environment and used in an ultra-clean environment;
- GaAs material is brittle and the chip surface cannot be touched. Be careful when using it;
- Sinter the chip with conductive glue or alloy (the alloy temperature cannot exceed 300 °C and the time cannot exceed 30 seconds) to ensure that it is fully grounded;
- The gap between the chip microwave port and the substrate should not exceed 0.05mm. Use 25μm double gold wire bonding. The recommended gold wire length is 250 to 400μm;
- There are no DC blocking capacitors at the chip input and output terminals;
- The chip is sensitive to static electricity. Please pay attention to anti-static measures during storage and use.