

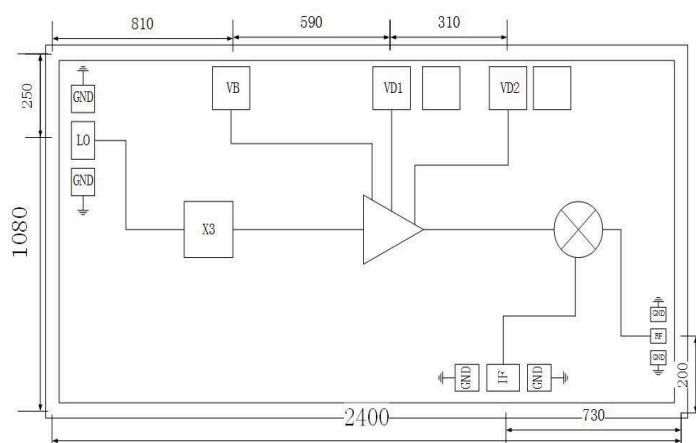
## General Description

MWM004 is a double-balanced passive mixer designed and manufactured by GaAs pHEMT process and integrated with frequency doubling scheme. This mixer can achieve up conversion or down conversion in the RF 56-74GHz band. Excellent isolation performance is achieved by on-chip Balun without additional off-chip components and power supply modules. It can be widely used in point-to-point communication systems, electronic countermeasures and other fields.

## Features

- LO-RF Isolation: > 48 dB
- Conversion Loss: 10dB
- IF Bandwidth: 2-15 GHz
- Chip Size: 2.40 x 1.08 x 0.05 mm

## Functional Diagram (bond: 50x50, 100x130 unit: $\mu\text{m}$ )



(Die Thickness: 50  $\mu\text{m}$ )

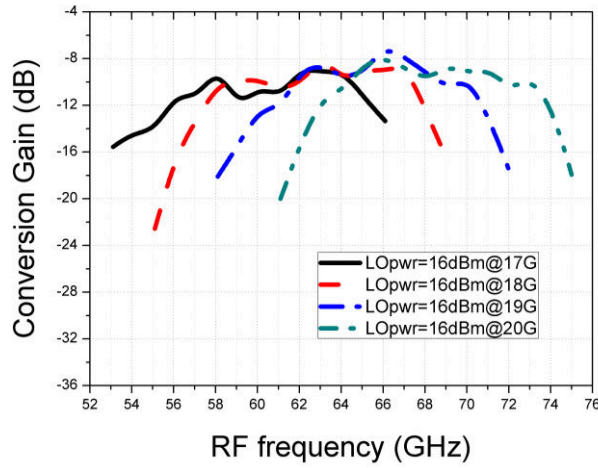
## Electrical Specifications, $T_A = +25^\circ\text{C}$ , (LO = +16dBm)

Parameter	Min	Typ	Max	Units
RF Bandwidth	56 - 74			GHz
LO Bandwidth	17 - 20			GHz
IF Bandwidth	2 - 15			GHz
Conversion Loss	8	10	12	dB
3LO-RF Isolation		48		dB
Supply Current (@ $V_{dd}=4.0\text{V}, V_{gg}=-0.5\text{V}$ )		70		mA

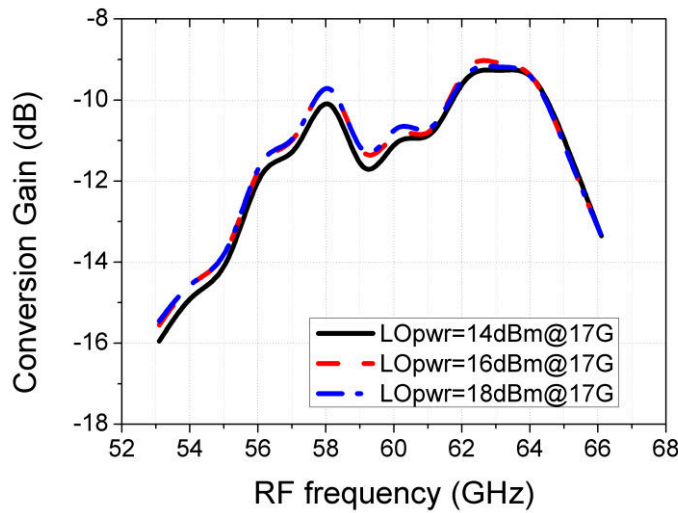


## Test Results

### Conversion Gain VS Frequency



### Conversion Gain VS LO Power



## Absolute Maximum Ratings

LO Input Power	+ 21dBm
Storage Temperature	-65 - +150°C
Operating Temperature	-55 - +85°C

## Assembly Diagram

