

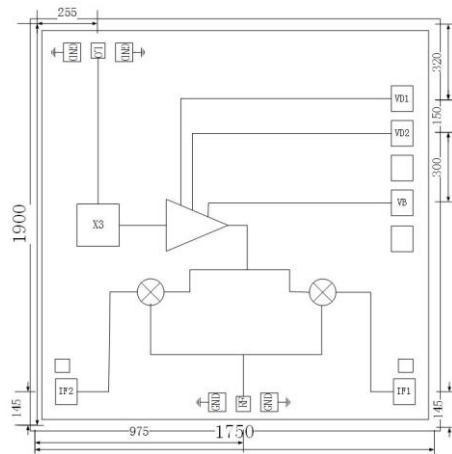
General Description

MWM003 is a I/Q mixer with integrated frequency doubling scheme designed and manufactured by GaAs pHEMT technology. This mixer can achieve up conversion or down conversion in the RF 55-71GHz band. Excellent isolation performance is achieved by on-chip Barron 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

RF-LO Isolation: 48 dB
 Conversion Loss: 11 dB
 Image Rejection: 22 dB
 IF Bandwidth: 2-15 GHz
 Chip Size: 1.75 x 1.90 x 0.05 mm

Functional Diagram (bond: 70x100, 50x50 unit: um)



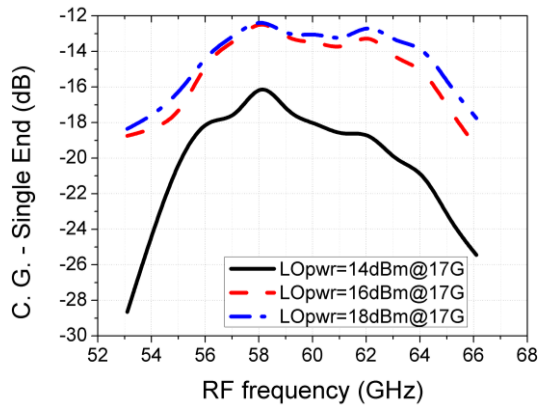
(Die Thickness: 50 um)

Electrical Specifications, $T_A = +25^\circ\text{C}$, $LO = +16\text{dbm}$

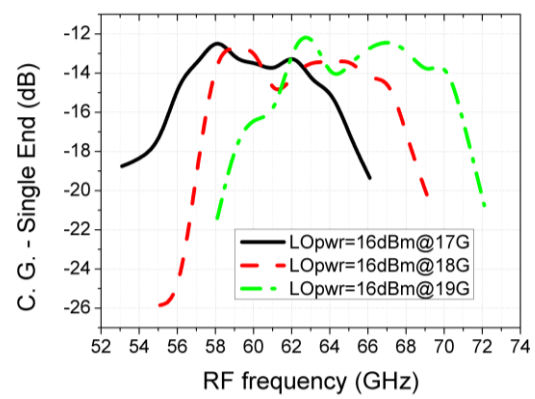
Parameter	Min	Typ	Max	Units
RF Bandwidth	55-71			GHz
LO Bandwidth	17-19			GHz
IF Bandwidth	2-15			GHz
Conversion Loss (without 90° coupler of IF)	12	14	16	dB
Conversion Loss (with 90° coupler of IF)	9	11	13	dB
Image Rejection	12	22	32	dB
3LO-RF Isolation	38	48	54	dB
Supply Current (@Vdd=+4.0V, Vgg=-0.5V)	70			mA

Test Results

Conversion Loss



Conversion Loss



RF-LO Isolation

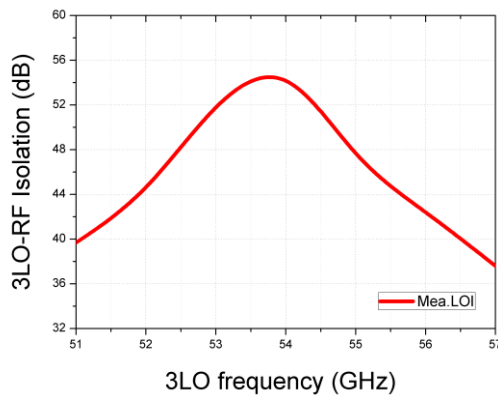
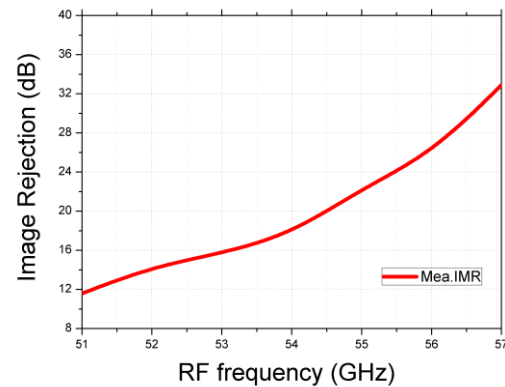


Image Rejection



Absolute Maximum Ratings (TA=25°C)

LO Power	21 dBm
Storage Temperature	-55 to +150°C
Operating Temperature	-40 to +85°C

Assembly Diagram

