

Features

- RF/LO Frequency: 18~32GHz
- IF Frequency: DC~10GHz
- Conversion Loss: 7.5dB
- LO Power: 13dBm
- Package Size: 3mm×3mm×1.2mm

Typical Applications

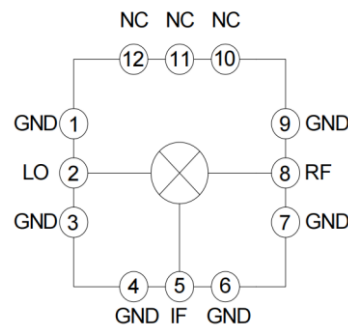
- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- Sat Com
- VSAT
- Military and Aerospace

General Description

SAC3513Q3 is general-purpose double balanced mixer. This MMIC mixer is fabricated in a GaAs process and requires no external components or matching circuitry. The device can be used as both up-converter and down-converter.

The chip offers full passivation for increased reliability and moisture protection.

Functional Diagram



Electrical Performance

TA=25°C, LO=13dBm, IF=100MHz

Parameter	Min.	Typ.	Max.	Units
RF/LO Frequency Range	18~32			GHz
IF Frequency Range	DC~10GHz			GHz
Conversion Loss	-10	-7.5	—	dB
IF Return Loss	—	-10	—	dB
RF Return Loss	—	-10	—	dB
LO Return Loss	—	-7.5	—	dB
LO to RF Isolation	25	40	—	dB
LO to IF Isolation	25	30	—	dB
RF to IF Isolation	18	35	—	dB
Input P _{-1dB}	10	14	—	dBm

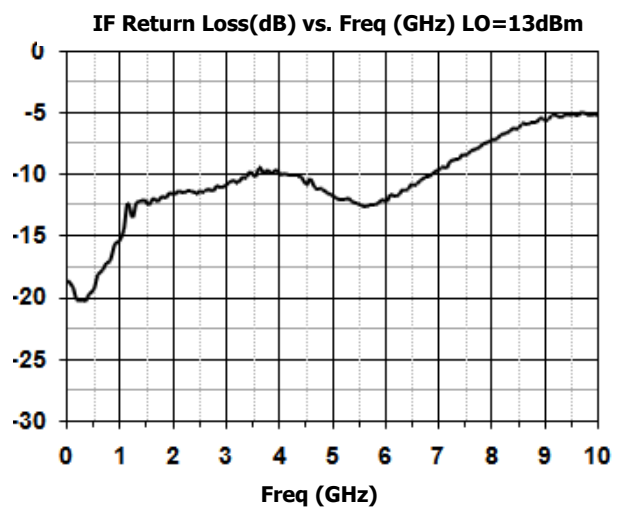
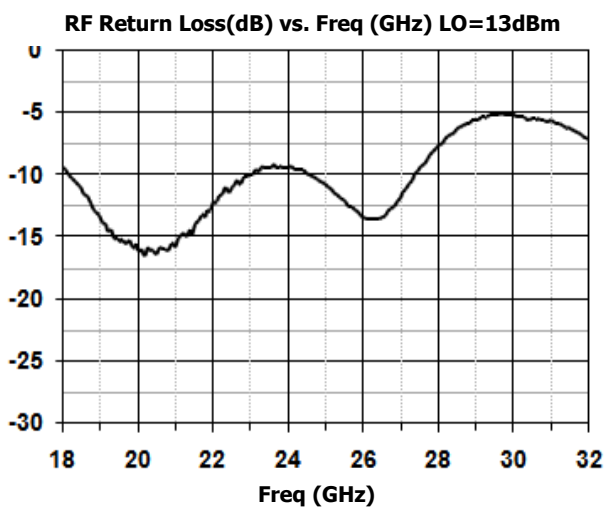
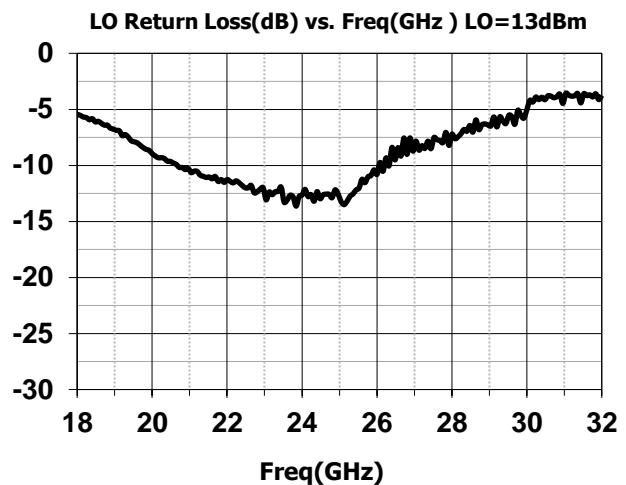
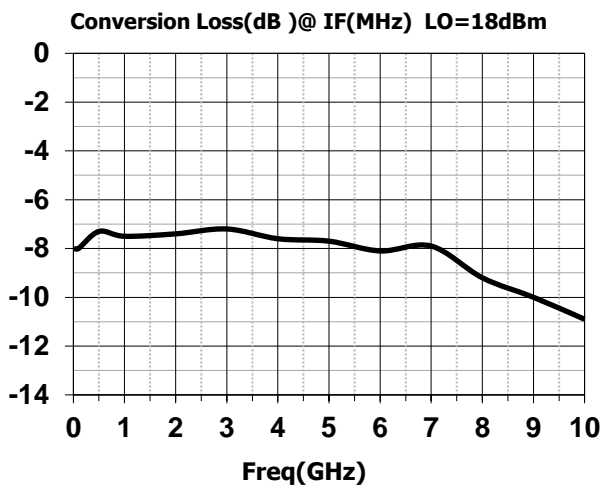
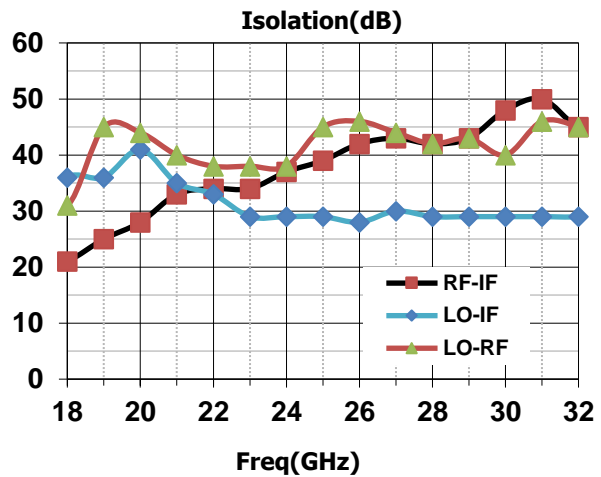
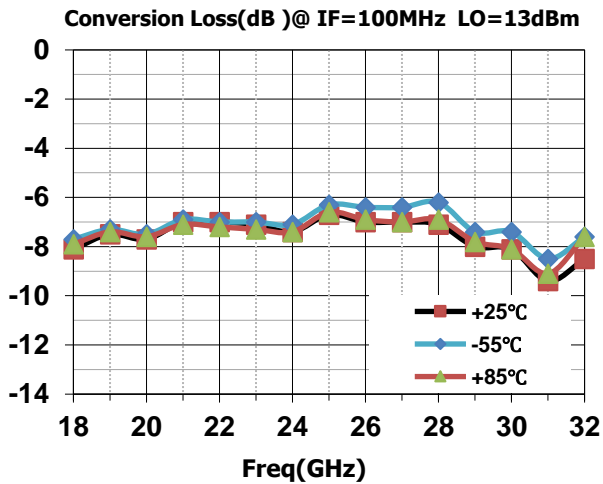
Absolute Maximum Ratings

Maximum RF/IF Input	20dBm	Operating Temperature	-55°C~+85°C
Maximum LO Input	20dBm	Storage Temperature	-65°C~+150°C

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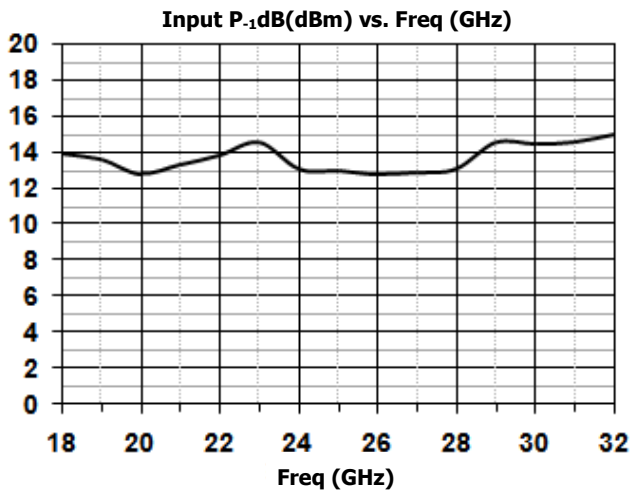
Typical Performance Curve



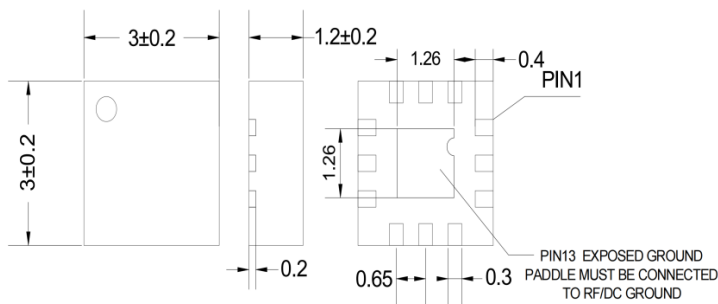
SAC3513Q3



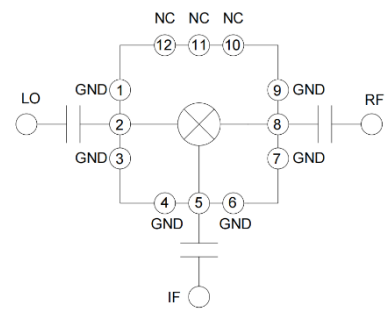
GaAs MMIC Double Balanced Mixer
18~32GHz Rev 1.1



Die Outline
(mm)



Assembly Diagram



Attention:

1. The moisture resistant grade of products is 2A, the storage environment $\leq 30^{\circ}\text{C}/60\% \text{RH}$, the surrounding workshop Life is 4 weeks.
2. Remove the vacuum packaging and bake in $125 \pm 5^{\circ}\text{C}$ environment for 6 hours before reflow soldering.