SAC3513Q3

GaAs MMIC Double Balanced Mixer
18～32GHz

Rev 1.1

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

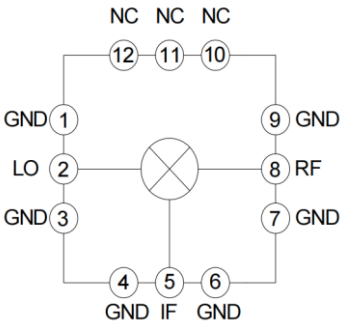
- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- Sat Com
- VSAT
- Military and Aerospace

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℃, 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_{-1}dB	10	14	—	dBm

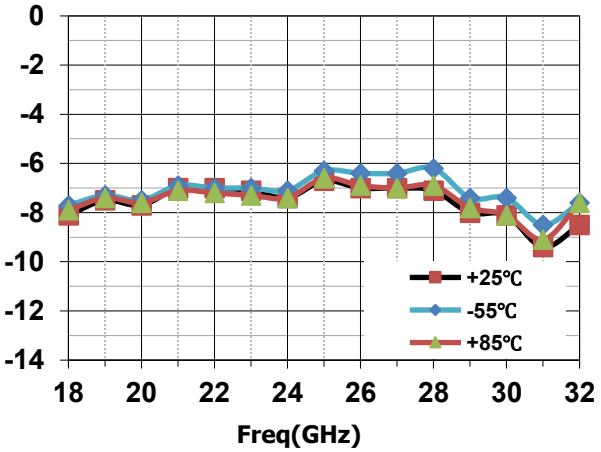
Absolute Maximum Ratings

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

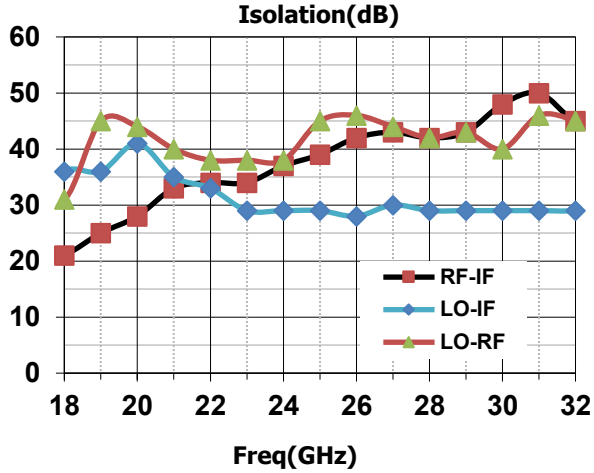
SuperApex, LLC
2801 Lakeside Drive, Suite 208, Bannockburn, IL 60015, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

Typical Performance Curve

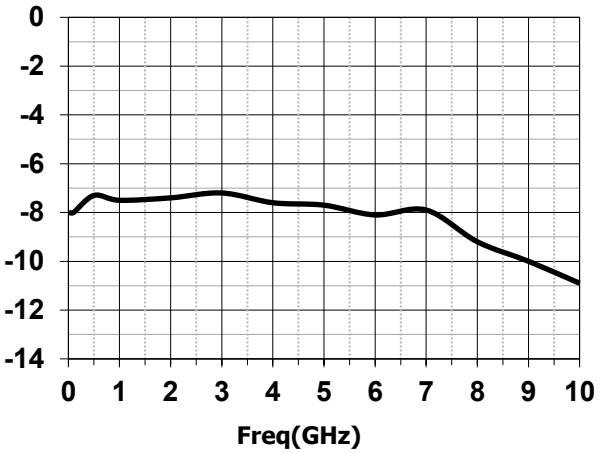
Conversion Loss(dB)@ IF=100MHz LO=13dBm



Isolation(dB)

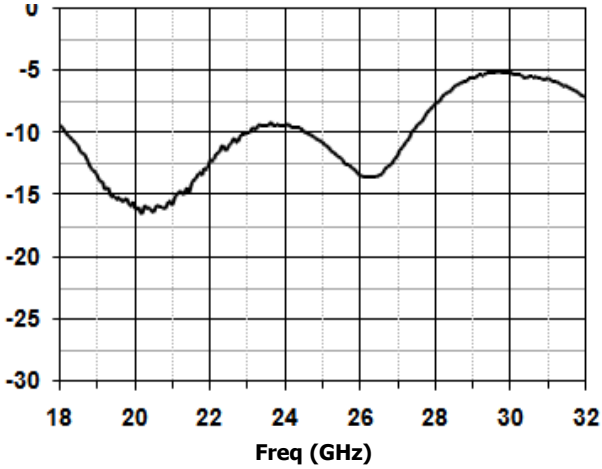


Conversion Loss(dB)@ IF(MHz) LO=18dBm

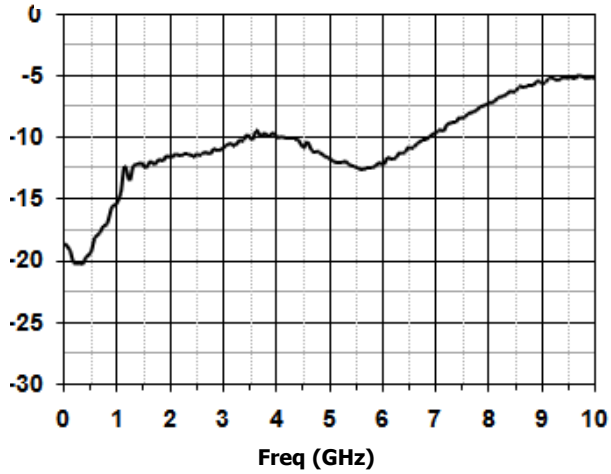


LO Return Loss(dB) vs. Freq(GHz) LO=13dBm

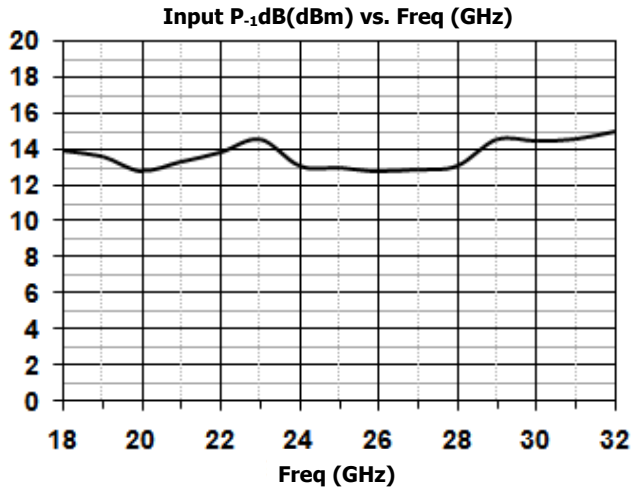
RF Return Loss(dB) vs. Freq (GHz) LO=13dBm



IF Return Loss(dB) vs. Freq (GHz) LO=13dBm

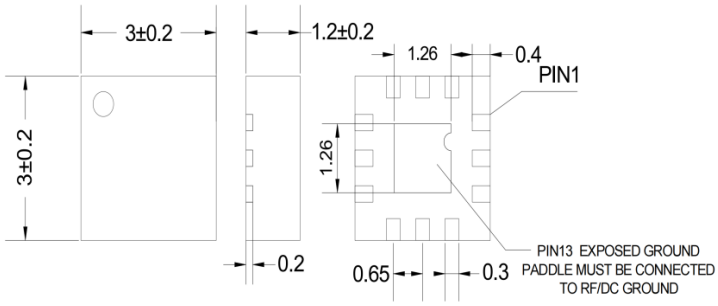


SuperApex, LLC
2801 Lakeside Drive, Suite 208, Bannockburn, IL 60015, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

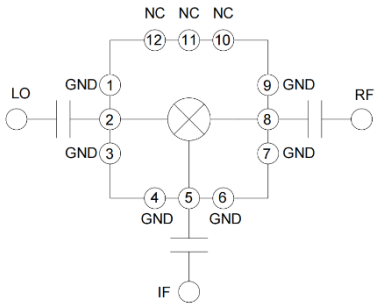


Die Outline

(mm)



Assembly Diagram



Attention:

1. The moisture resistant grade of products is 2A, the storage environment ≤30°C/60% RH, the surrounding workshop Life is 4 weeks.

2. Remove the vacuum packaging and bake in 125+/- 5°environment for 6 hours before reflow soldering.

SuperApex, LLC
2801 Lakeside Drive, Suite 208, Bannockburn, IL 60015, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com