SAC3514QP3

GaAs MMIC Double Balanced Mixer
14GHz~30GHz

Rev 1.0

Features

- RF/LO Frequency：14GHz~30GHz
- IF Frequency：DC~6GHz
- Conversion Loss：-7.5dB
- LO Power：13dBm
- Package Size： 3mmx3mmX1.3mm

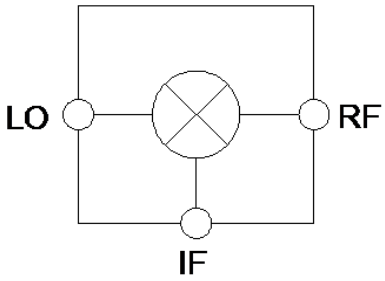
Typical Applications

- SATCOM
- VSAT

General Description

SAC3514QP3 is general-purpose Double Balanced Mixer assembled in a lead-free 3mm x 3mm 12-lead air cavity plastic package

Functional Diagram



Electrical Performance

(T_A=25℃, LO=13dBm)

Parameter	Min.	Typ.	Max.	Units
RF/LO Frequency Range		14~30		GHz
IF Frequency Range		DC~6		GHz
Conversion Loss	—	-7.5	—	dB
IF Return Loss	—	-10	—	dB
RF Return Loss	—	-10	—	dB
LO Return Loss	—	-10	—	dB
LO to RF Isolation	—	-45	—	dB
LO to IF Isolation	—	-32	—	dB
RF to IF Isolation	—	-32	—	dB

Absolute Maximum Ratings

Maximum RF/IF Input	18dBm	Operating Temperature	-55℃～+85℃
Maximum LO Input	18dBm	Storage Temperature	-65℃～+150℃
ESD Sensitivity (HBM)	Class 0, Passed 150V		

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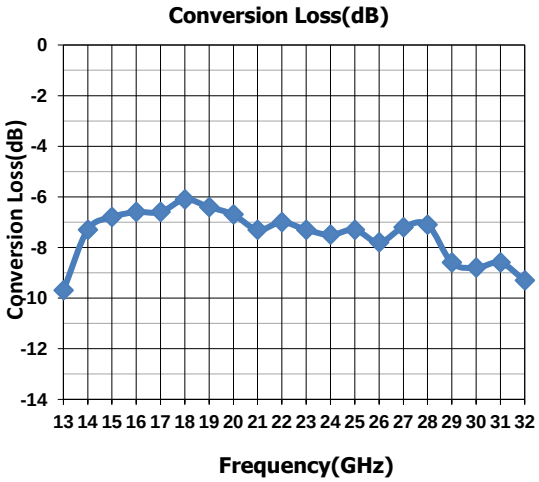
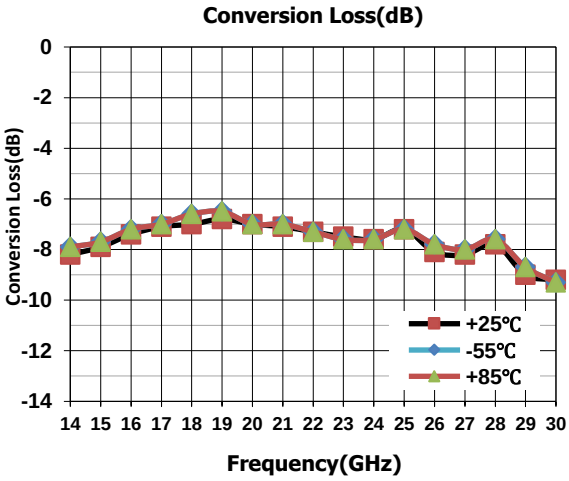
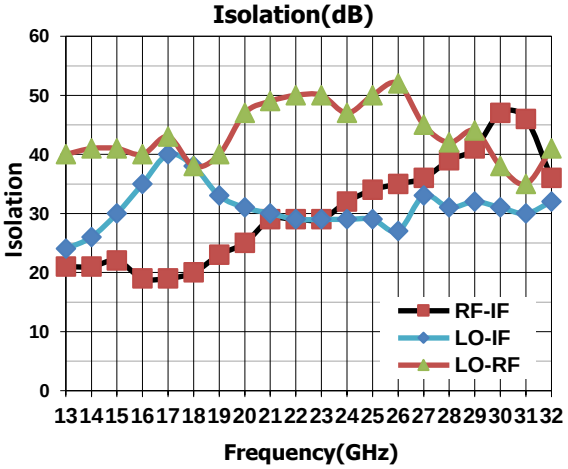
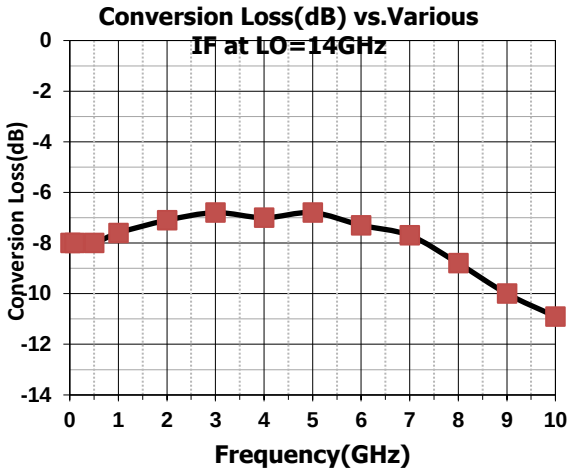
Typical Performance Curve









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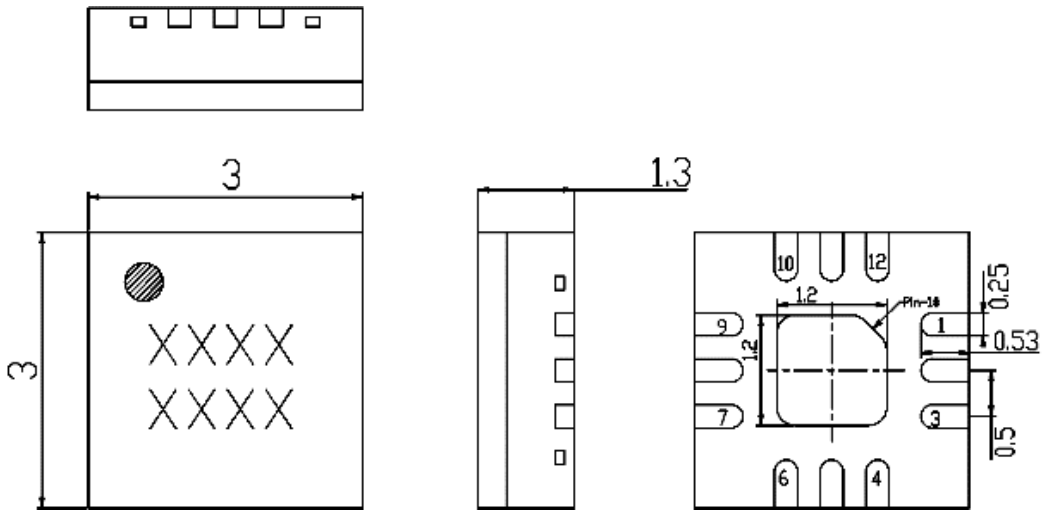
Outline Drawing(mm)

(All dimensions in mm)



Pin Descriptions

Pin No.	function	Pin No.	function
1	Connect to GND	11	Connect to GND
2	LO, DC coupled	12	Connect to GND
3	Connect to GND		
4	Connect to GND		
5	IF, DC coupled*		
6	Connect to GND		
7	Connect to GND		
8	RF, DC coupled		
9	Connect to GND		
10	Connect to GND		

*For applications not requiring operation to DC, an off-chip DC blocking capacitor should be used. For operation to DC this pin must not source/sink more than 2mA of current or part non function and possible part failure will result.

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. After un-packing, it is necessary to bake the parts for 6 hours in 125+/-5° C environment before soldering;
3. GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test;
4. Ultrasonic cleaning is prohibited;
5. It is extremely not recommended to heat the package directly from the top.

Revision History

Revision	Date	Comment
1.0	Apr. 24, 2020	First Release