

SAC3518Q4



GaAs MMIC Subharmonic Mixer
18~36GHz

Rev 1.0

Features

- RF Frequency: 18~36GHz
- LO Frequency: 9~16GHz
- IF Frequency: DC~7GHz
- Conversion Loss: -13.5dB
- LO Power: 0dBm
- Package Size: 4mm×4mm×1.3mm

Typical Applications

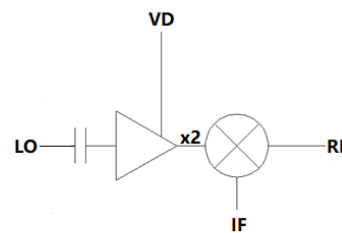
- SATCOM
- Point-to-Point Radio

General Description

SAC3518Q4 is a Ka-Band sub-harmonic up converter with integrated LO buffer amplifier. SAC3518Q4 operates from an RF of 18 to 36 GHz.

The integrated LO amplifier is single bias at a 5 V DC with a typical 0 dBm LO drive level requirement.

Functional Diagram



Electrical Performance

($T_A = +25^\circ\text{C}$, $V_D = 5\text{ V}$, $I_D = 65\text{ mA}$ Typical. $\text{IF} = 500\text{ MHz}$, $\text{LO} = 0\text{ dBm}$)

Parameter	Min.	Typ.	Max.	Units
RF Frequency Range		18~36		GHz
LO Frequency Range		9~16		GHz
IF Frequency Range		DC~7		GHz
Conversion Loss		-13.5		dB
IF Return Loss		-20		dB
RF Return Loss		-8		dB
LO Return Loss		-25		dB
LO to RF Isolation		-30		dB
LO to IF Isolation		-15		dB
RF to IF Isolation		-35		dB
Supply Current		65		mA

Absolute Maximum Ratings

Maximum RF/IF Input	10dBm	Operating Temperature	-55°C~+85°C
Maximum LO Input	10dBm	Storage Temperature	-65°C~+150°C
ESD Sensitivity (HBM)	Class 0, Passed 150V		

SuperApex, LLC

1580 S. Milwaukee Ave., Suite 405, Libertyville, IL 60048, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

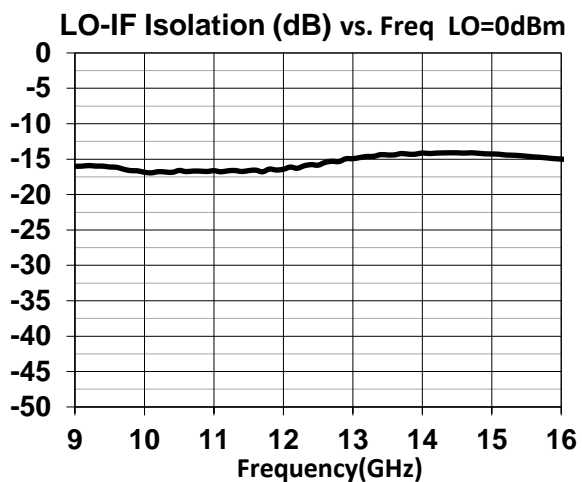
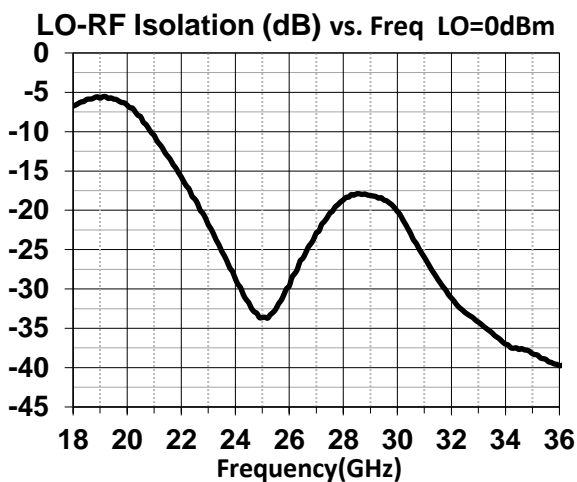
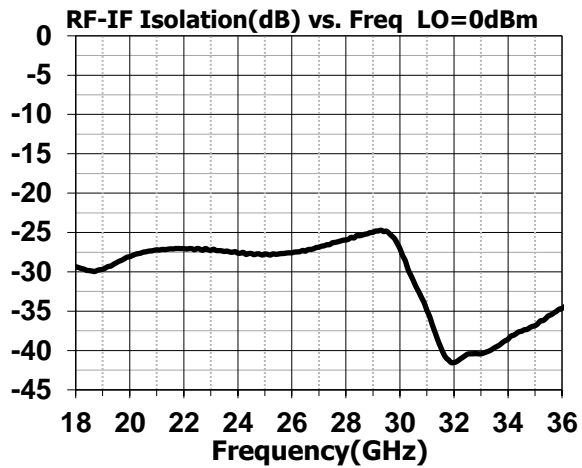
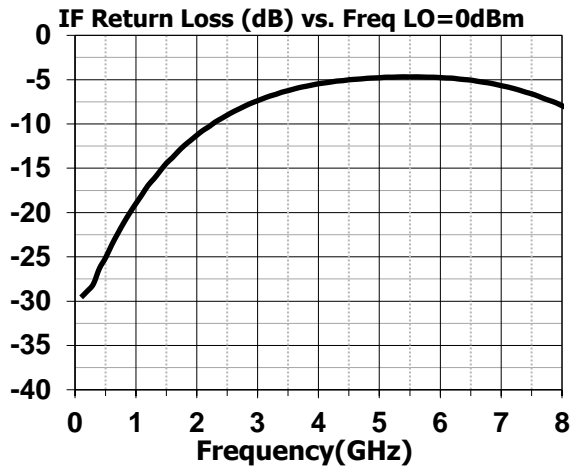
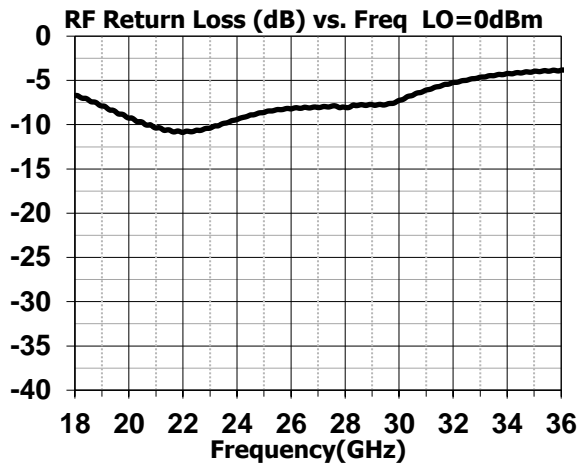
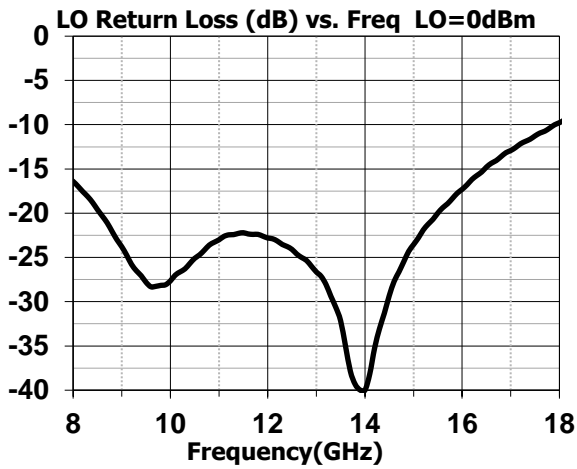
SAC3518Q4



GaAs MMIC Subharmonic Mixer
18~36GHz

Rev 1.0

Typical Performance Curve



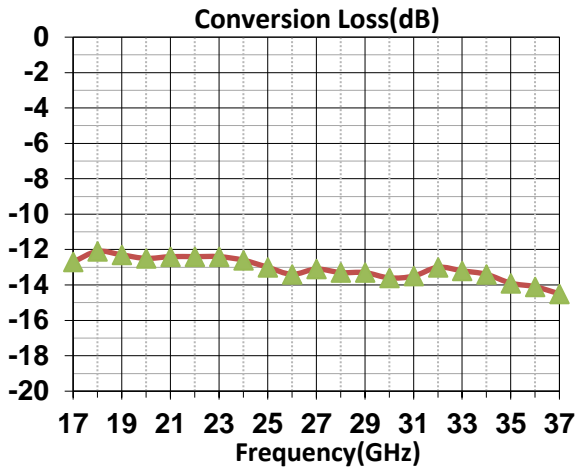
SuperApex, LLC

1580 S. Milwaukee Ave., Suite 405, Libertyville, IL 60048, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

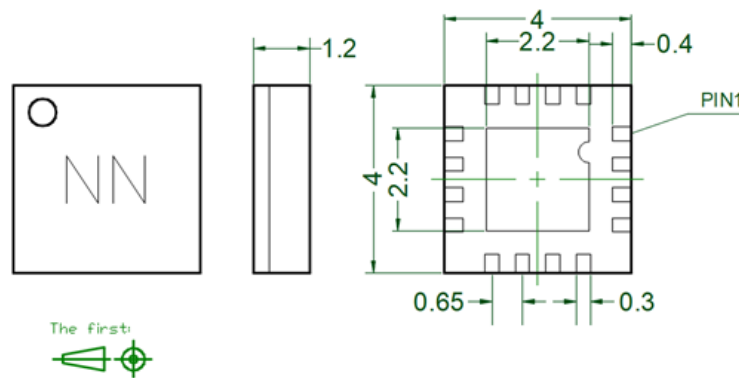
SAC3518Q4

GaAs MMIC Subharmonic Mixer
18~36GHz

Rev 1.0



Outline Drawing (mm)



Pin Descriptions

Pin No.	function	Pin No.	function
1	Connect to GND	11	RF, DC Coupled
2	Connect to GND	12	Connect to GND
3	LO, AC Coupled	13	Connect to GND
4	Connect to GND	14	+VD
5	Connect to GND	15	Connect to GND
6	Connect to GND	16	Connect to GND
7	Connect to GND		
8	IF, 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.

SuperApex, LLC

1580 S. Milwaukee Ave., Suite 405, Libertyville, IL 60048, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

SAC3518Q4



GaAs MMIC Subharmonic Mixer
18~36GHz

Rev 1.0

Attention:

1. The moisture resistant grade of products is 2a, the storage environment $\leq 30^{\circ}$ 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 $125\pm 5^{\circ}$ 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	Jul. 17, 2019	First Release

SuperApex, LLC

1580 S. Milwaukee Ave., Suite 405, Libertyville, IL 60048, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com