

Features

- Up or Down Frequency Mixer
- Low Conversion Loss: 12 dB
- RF Frequency: 14~32GHz
- LO Frequency: 4~20GHz
- IF Frequency: DC~7GHz
- Conversion Loss: -12dB
- LO Power: 15dBm
- Die Size: 0.8mm×0.74mm×0.1mm

Typical Applications

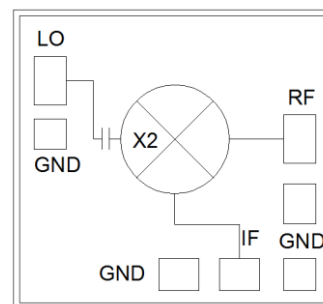
- Microwave and very small aperture terminal (VSAT) radios
- Test equipment
- Point to point radios
- Satellite communications (SATCOM)
- Military electronic warfare (EW), electronic countermeasure (ECM), and command, control, communications and intelligence (C3I)

General Description

SAC3517 can be used for up or down frequency conversion. The mixer integrates an 180° balanced diode topology that allows the LO to be injected at ½ the mixing LO frequency. This improves LO isolation and simplifies system requirements.

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

Functional Diagram



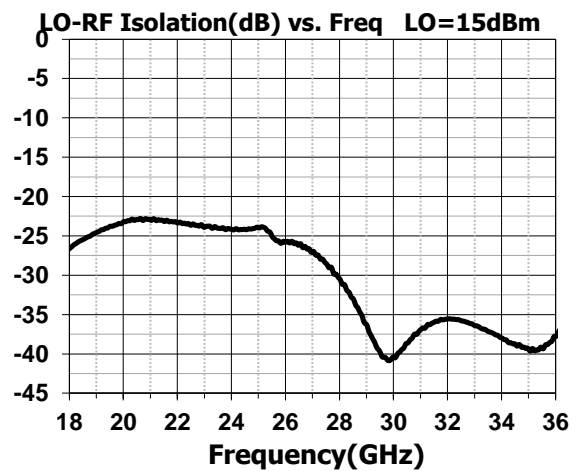
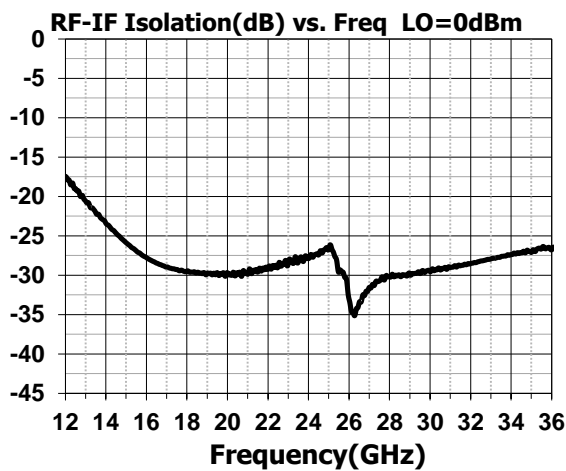
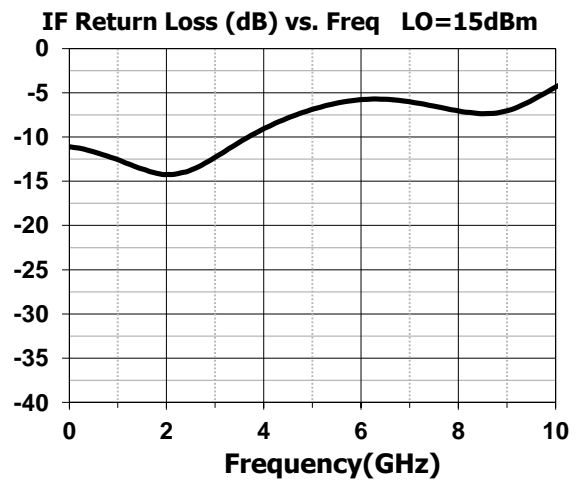
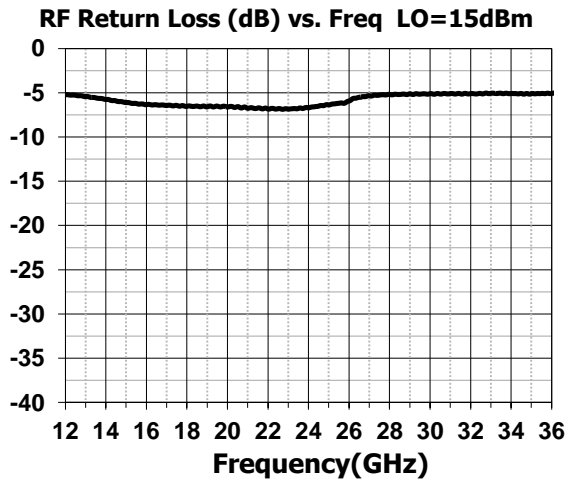
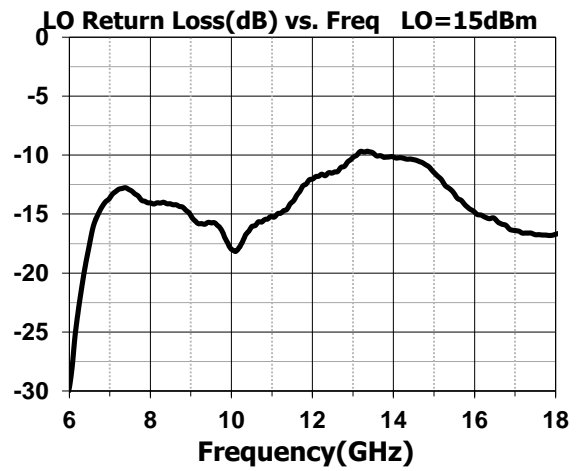
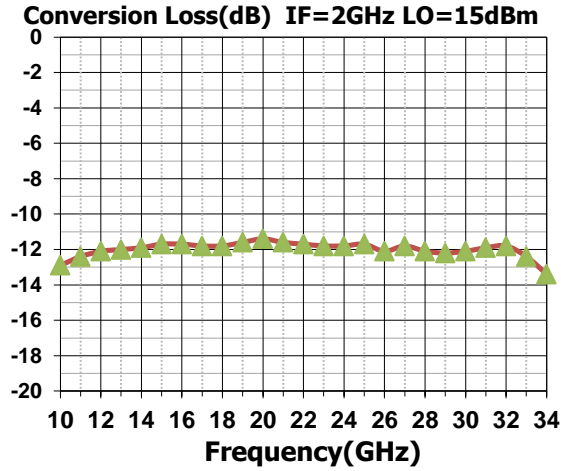
Electrical Performance (IF= 2 GHz, LO = +15 dBm ,T_A = 25°C, Z₀ = 50 Ω)

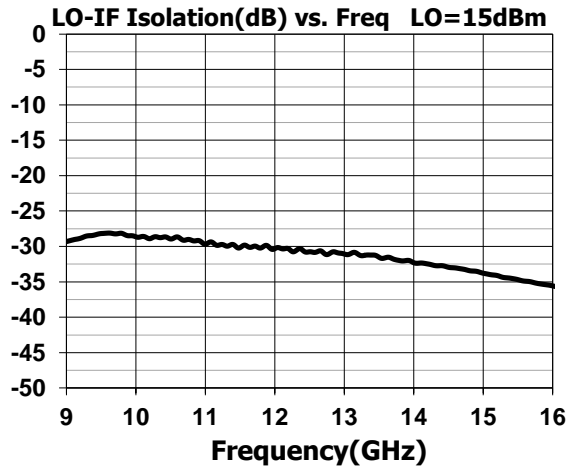
Parameter	Min.	Typ.	Max.	Units
RF Frequency Range		14 ~ 32		GHz
LO Frequency Range		4~20		GHz
IF Frequency Range		DC ~ 7		GHz
Conversion Loss		-12		dB
IF Return Loss		-10		dB
RF Return Loss		-7		dB
LO Return Loss		-15		dB
LO to RF Isolation		-30		dB
LO to IF Isolation		-32		dB
RF to IF Isolation		-30		dB

Absolute Maximum Ratings

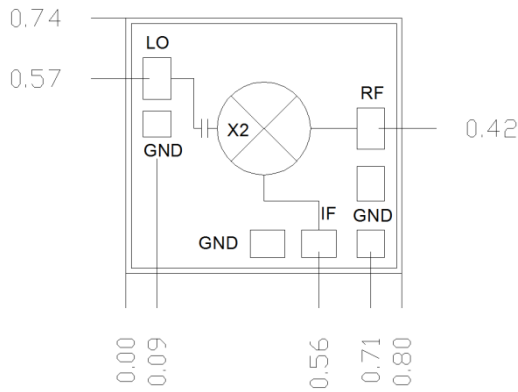
Maximum RF/IF Input	10dBm	Operating Temperature	-55°C~+85°C
Maximum LO Input	20dBm	Storage Temperature	-65°C~+150°C

Typical Performance Curve

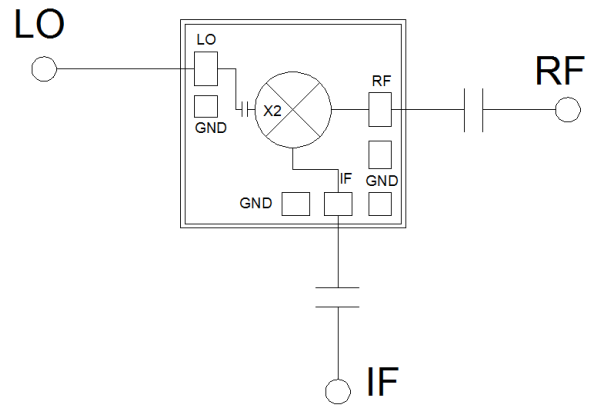




Die Outline
(all dimensions in mm)



Assembly Diagram



Attention:

GaAs MMIC devices are susceptible to damage from electrostatic discharge. Proper precautions should be observed during handling, assembly and test.