

# SAC1001Q3E2

GaAs MMIC Envelope Detector (Package)  
0.5~20GHz

Rev 1.2

## Features

- Frequency: 0.5~20GHz
- Dynamic Range: 30dB
- Package Size: 3mm×3mm×1.2mm

## Typical Applications

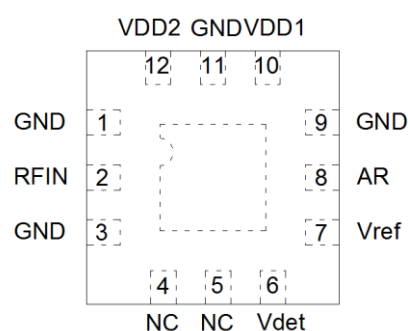
- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- SatCom
- VSAT
- Military and Aerospace

## General Description

SAC1001Q3E2 is a GaAs MMIC Envelope Detector which surface mount package. It integrated Vdet and Vref.

SAC1001Q3E2 is used to many industries. And it has accurate TPC and typical commercial communication system.

## Functional Diagram



## Electrical Performance ( $T_A=+25^{\circ}\text{C}$ , $V_D=+5\text{V}$ , $Z_0=50\Omega$ )

Parameter	Min.	Typ.	Max.	Units
Frequency	0.5~20			GHz
Flatness	—	1	—	dB
Dynamic Range	—	30	—	dB
Return Loss	—	-10	—	dB
Rise Time	—	100	—	ns
Fall Time	—	300	—	ns
$I_D$	—	2.5	—	mA

## Absolute Maximum Ratings

Maximum Input Power detection	+18dBm	Operating temperature range	-55°C~+85°C
$V_D$	+6V	Storage temperature range	-65°C~+150°C

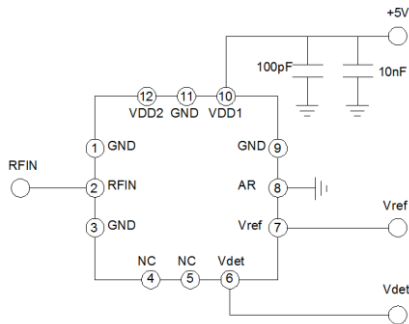
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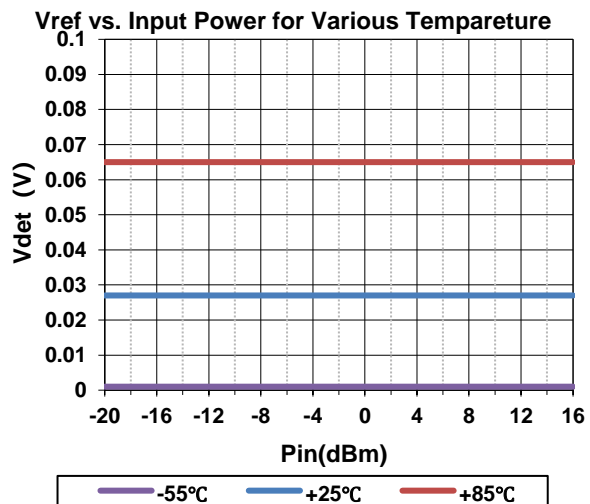
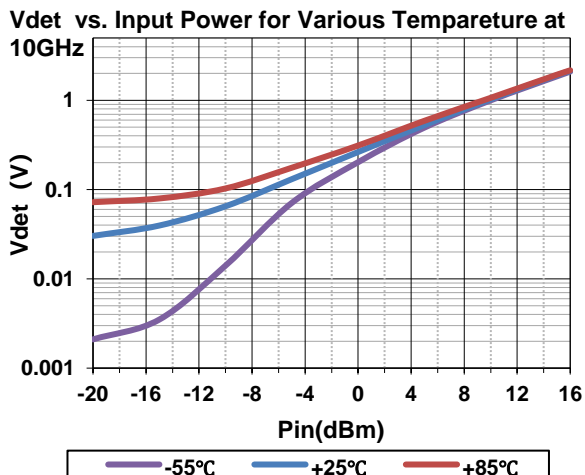
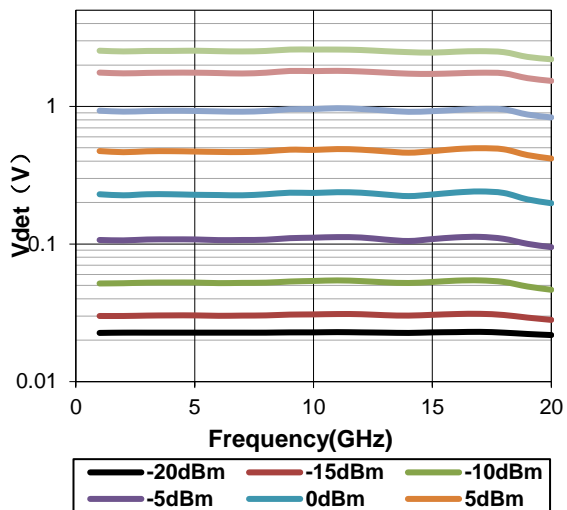
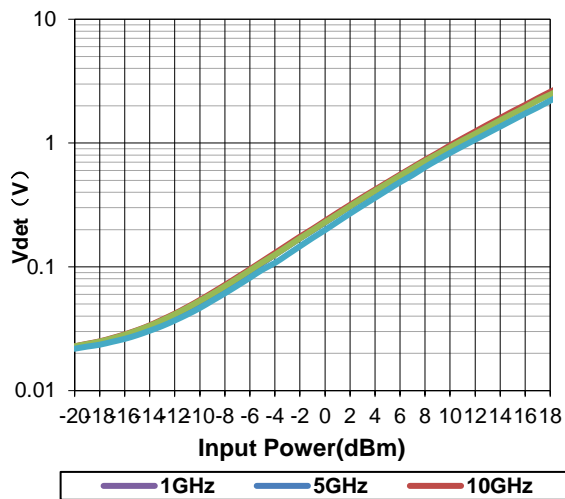
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## Application 1 (0.5~20GHz Detector)



## Application 1 Typical Performance Curve



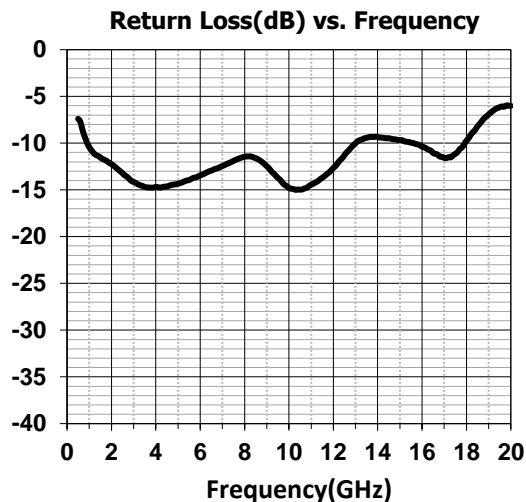
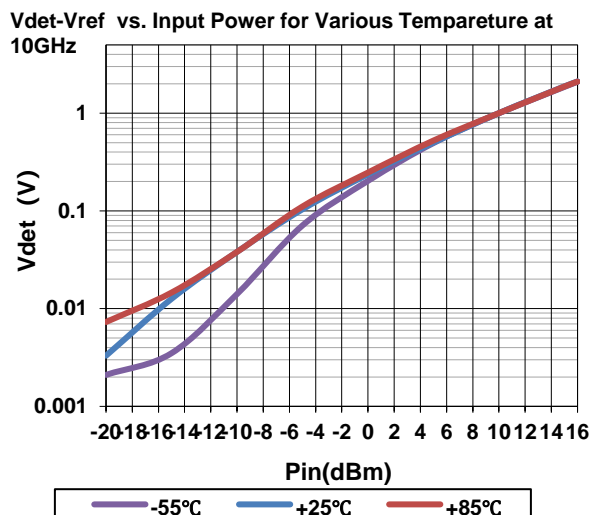
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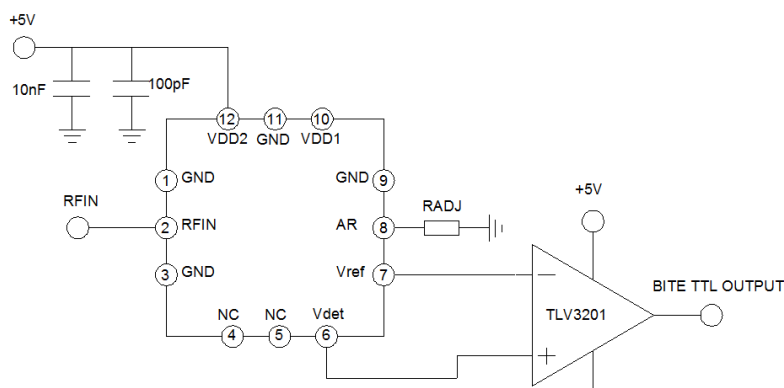
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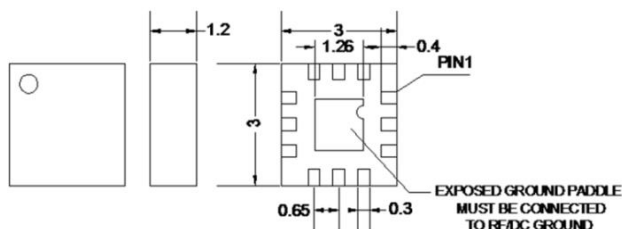


## Application 2(0.5~20GHz Detector)



The circuit is used in built-in test equipment. Resistor R1 sets threshold power. When the input signal is higher than threshold power, the comparator generates output TTL high level. R1: 510ohm~5.1KOhm.

## Outline Drawing (All dimensions are in mm)



### 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. After un-packing, it is necessary to bake the parts for 6 hours in  $125 \pm 5$  degree environment before soldering.