

# SAC1003QP3

GaAs MMIC Envelope Detector (Package)  
0.5~20GHz

Rev 1.3

## Features

- Frequency: 0.5~20GHz
- Dynamic Range: 40dB
- Package Size: 3mm×3mm×0.75mm

## Typical Applications

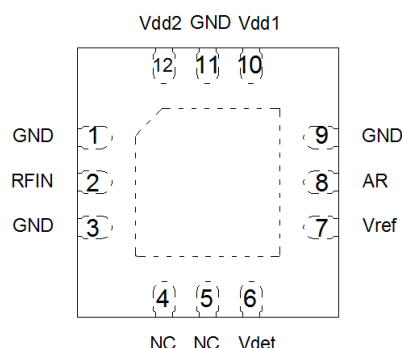
- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- SatCom
- VSAT
- Military and Aerospace

## General Description

SAC1003QP3 is a GaAs MMIC Envelope Detector which surface mount plastic package. It integrated Vdet and Vref.

SAC1003QP3 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	—	2	—	dB
Dynamic Range	—	40	—	dB
Return Loss	—	-10	—	dB
Rise Time	—	100	—	ns
Fall Time	—	300	—	ns
$I_D$ $V_{DD}=+5\text{V}$	—	2.5	—	mA

## Absolute Maximum Ratings

Maximum Input Power detection	+20dBm	Operating temperature range	-55°C~+85°C
$V_D$	+6V	Storage temperature range	-65°C~+150°C

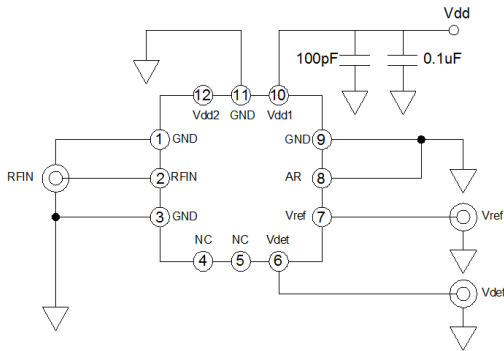
# SAC1003QP3



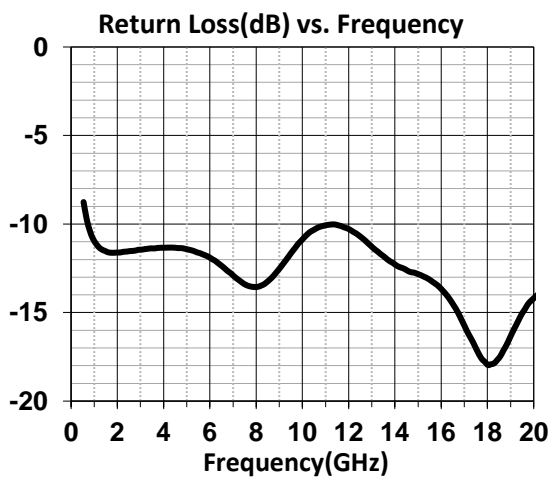
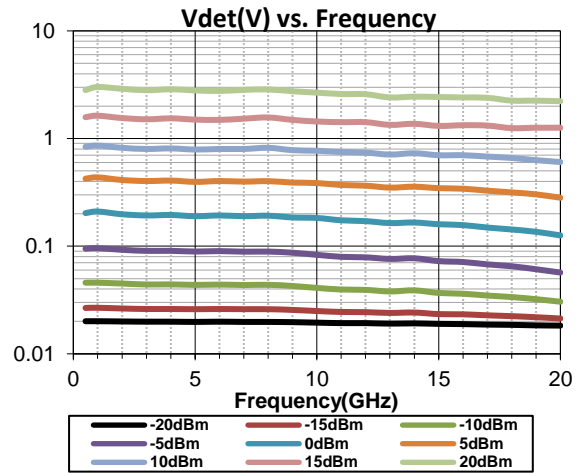
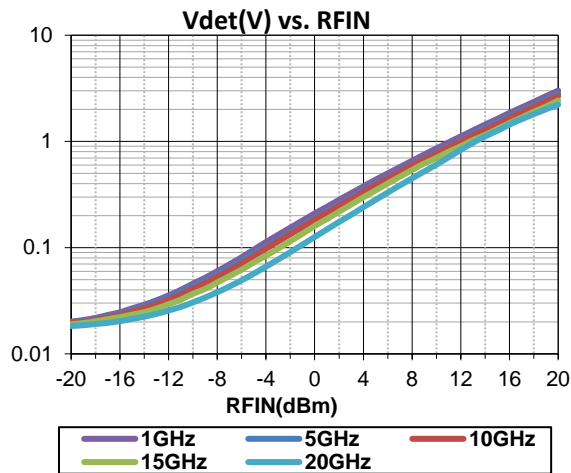
GaAs MMIC Envelope Detector (Package)  
0.5~20GHz

Rev 1.3

## Application 1 (0.5~20GHz Detector)



## Application 1 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

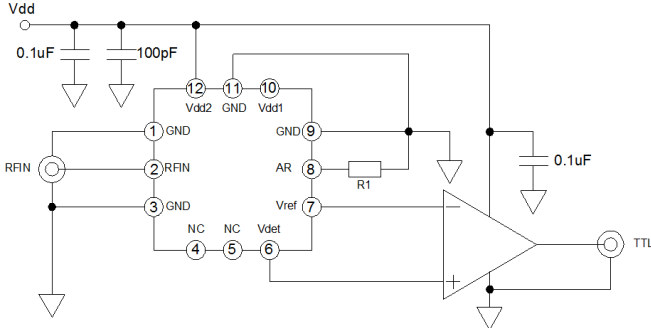
# SAC1003QP3



GaAs MMIC Envelope Detector (Package)  
0.5~20GHz

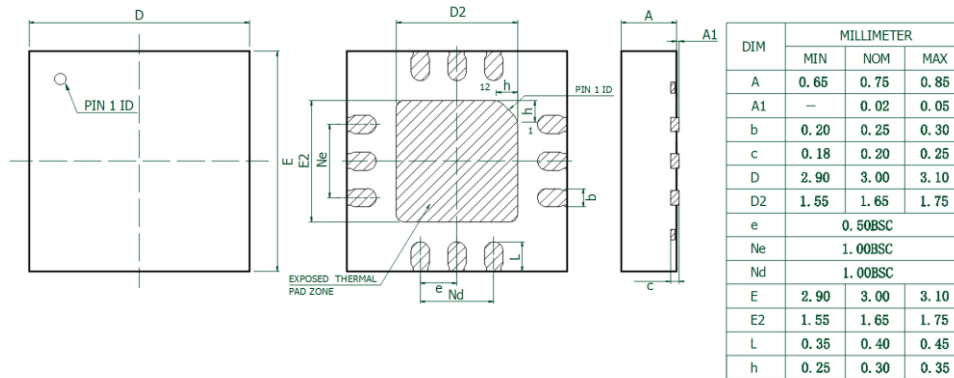
Rev 1.3

## Application 2(0.5~20GHz BITE)



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: 510hm~5.1KOhm.

## Outline Drawing (All dimensions are in mm)



### Attention:

1. The moisture resistant grade of products is 2A, the storage environment  $\leq 30^{\circ}$  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 degree environment before soldering.