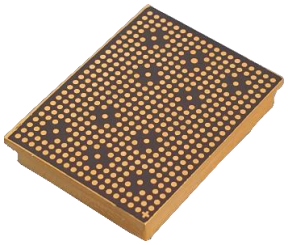
GF05005T080B

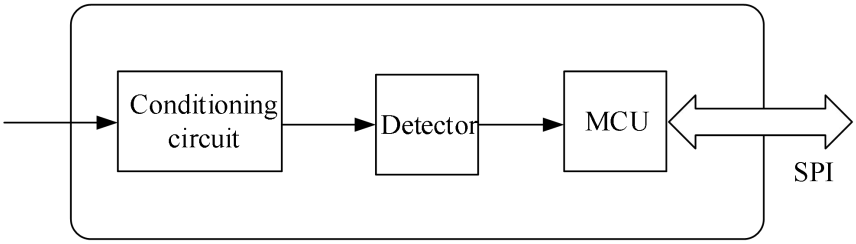
Large dynamic range detector, 0.5～8GHz

Performance characteristics

- Operating frequency: 0.5～8GHz
- Dynamic range: -60～+10dBm
- Detection accuracy: ±1.5dB
- Outline Dimensions: 21x16x3.5mm



Principle diagram



Product Introduction

GF05005T080B is a broadband large dynamic range logarithmic detector that accurately converts RF input signals into DC voltage output signals that vary linearly with input power. It has a linear dynamic range of 70dB, does not require input matching, supports fast response to input power changes, and has no trailing phenomenon in rising and falling waveforms. It can provide a nominal logarithmic positive slope of 15.3mV/dB in the frequency range of 0.5-8GHz. Under broadband frequency range and high and low temperature conditions, GF05005T080B maintains good consistency in output. It is housed in a ceramic package, suitable for SMT.

Absolute maximum ratings	
Parameter	Ratings
VDD	+7V
Input power	+20dBm
Operating temperature	-55～+85° C
Storage temperature	-55～+150° C
Note: Exceeding any of these limits may cause permanent damage.	

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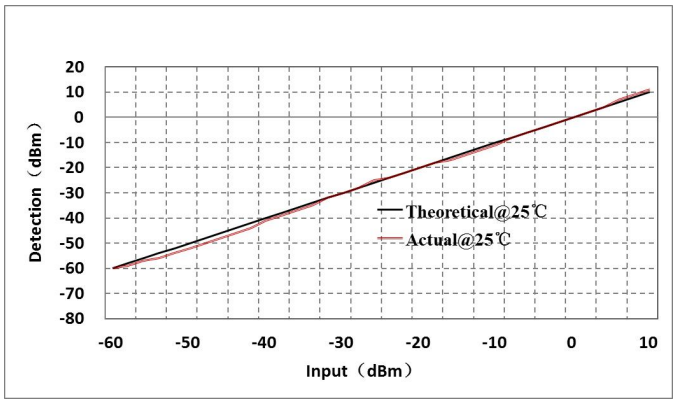
GF05005T080B

Large dynamic range detector, 0.5～8GHz

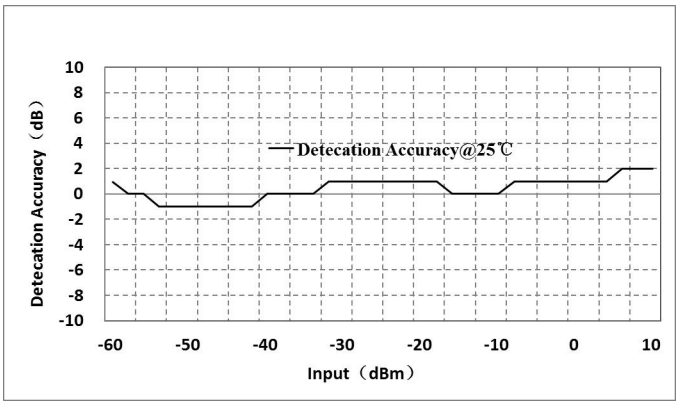
Electrical parameters(TA = +25°C, 50Ω system)				
Parameter	Min	Typ	Max	Unit
Operating frequency	0.5～8			GHz
High accuracy in full temperature	±1.5dB@-40～+85℃			
Dynamic range	70dB@3dB Logarithmic error			
Fast response	Rise time 10ns/Fall time 13ns@8GHz			
Slope	15.3mV/dB			

Main indicator testing curve

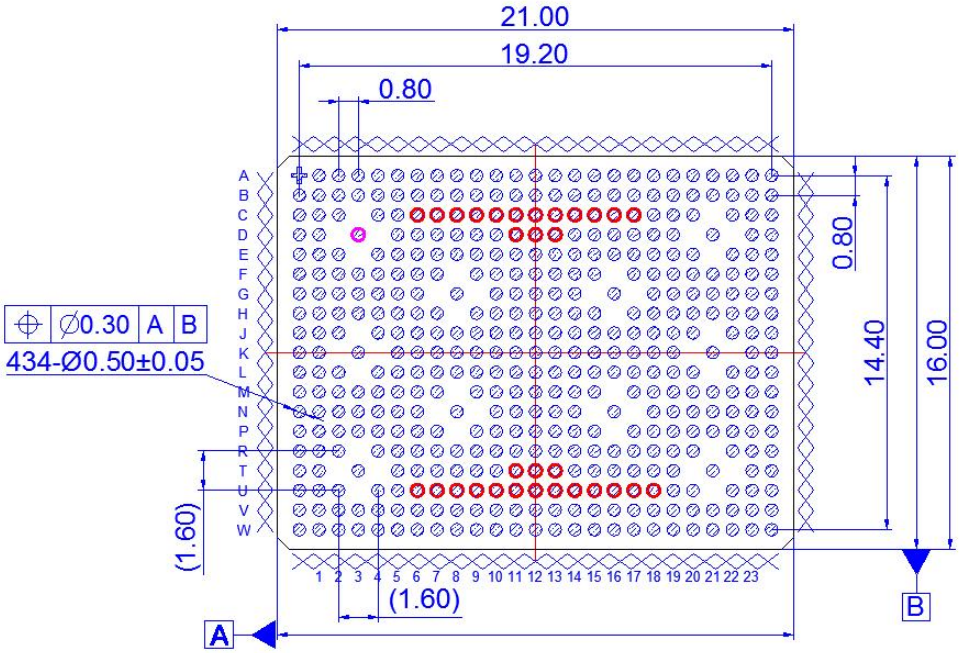
Detection power VS. Input power



Detection accuracy VS. Input power



External structure



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Pin	Function	Description
D3	RFin	RF input, no need for blocking capacitors
C6、C14、U14	+3.3V	+3.3V power supply
C19	+5V	+5V power supply
C10	LE	Enable
D11	CLK	Clock
C11	DATA	Data
U17、U18	NC	Not connected
Others	GND	Ground

Control requirements

Frame header	Detection power		Check bit	End of frame
0xFF	D1	D0	Xor	0x55

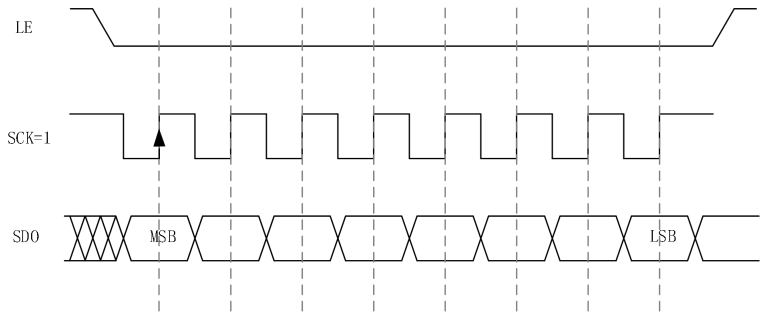

Fig. SPI serial port timing diagram

Instructions:

1) SPI communication;

2) LE is the enable signal, and when LE is at a low level, the data and clock signals are valid;

3) SCK is the clock signal, which can support a maximum clock frequency of 10MHz and LVTTL level;

4) SDO is serial output data, valid when SCK rises, LVTTL level.

Note:

- Unit: mm;
- The device should be stored in a dry and nitrogen environment. When the device cannot be used up after being unpacked, it should be immediately stored in a drying oven or vacuum sealed to avoid absorbing moisture from the air;
- Devices are sensitive to static electricity, and attention should be paid to anti-static measures during storage, transportation, assembly, and use;
- Please connect all grounding pins to RF ground;
- This product is suitable for reflow soldering installation process, with a maximum reflow soldering peak temperature of 210 ℃.