



Frequency: 1-20GHz

Small Singal Gain: 12.5dB

Flatness: $\leq \pm 0.75\text{dB}$

Noise Figure: 4.5dB

P-1dB: 23dB

Psat: 24.5dBm

Supplying: +8V/250mA

50Ohm Input/Output

100% In-situ Test

Size: 2.6 x 1.65 x 0.1mm

Description:

The YCA-0120B is self-biased pHMET High Dynamic Low Noise Drive Amplifiers which operates between 1~20GHz, The chip is back-metallized and can be die mounted with AuSn eutectic preforms or with electrically conductive epoxy. The mounting surface should be clean and flat.

Limited Parameter	
Max Drain Voltage	+10V
Max Input Power	+20dBm

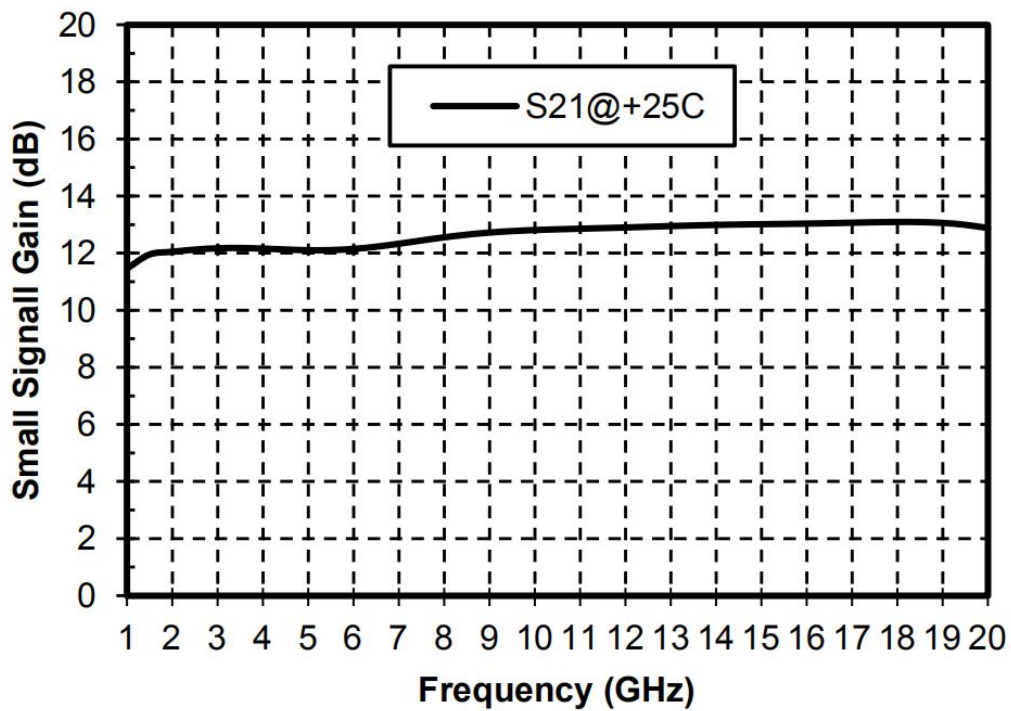


Working Temperature	-55 ~ +85° C
Storage Temperature	-65 ~ +150° C

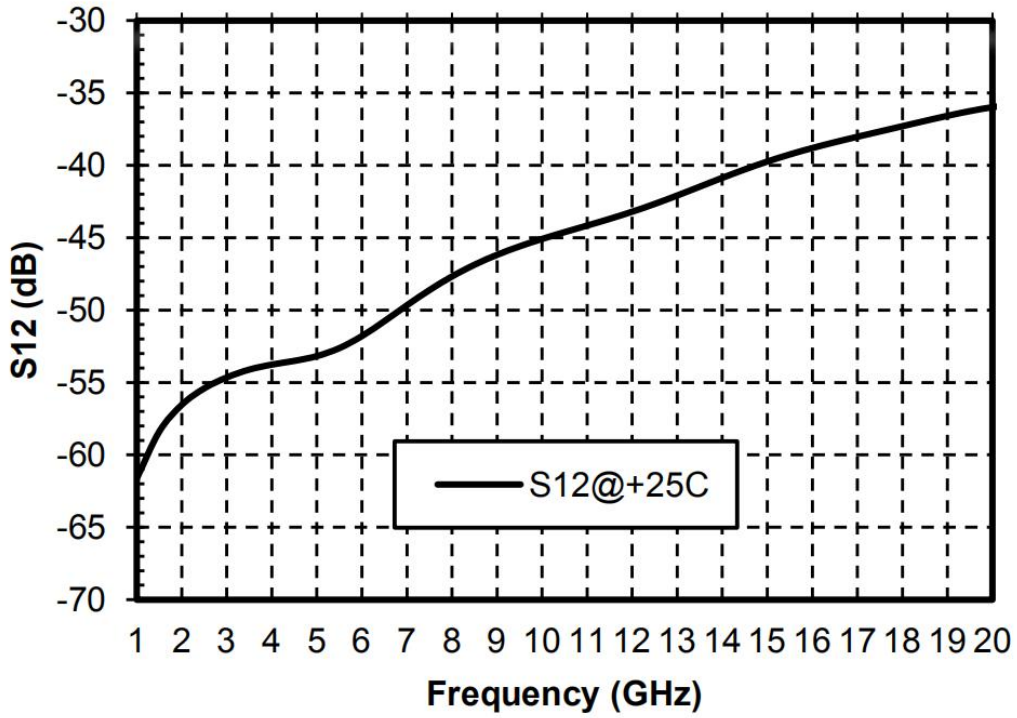
Electronic Spec.: 【Ta=+25° C, Vd=+10V(+11V), *Ids=320mA)】

Features	Min	Typical	Max	Unite
Frequency	1-20G			GHz
Small Singal Grain	11.5	12.5	13	dB
Flatness	±0.75			dB
Noise Figure	-	4.5	5.5	dB
P-1dB	21	23	24.0	dBm
Psat	22.5	24.5	25.5	dBm
Input Return Loss	10	19	-	dB
Output Return Loss	9	18	-	dB
Static Current	250			mA

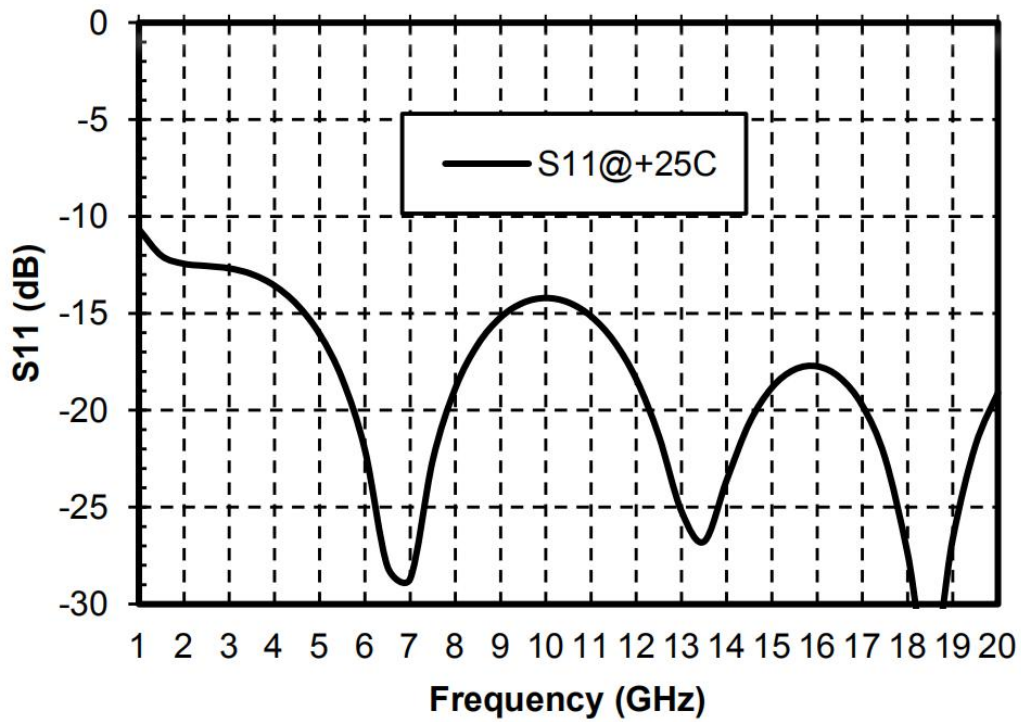
Gain VS Temperature



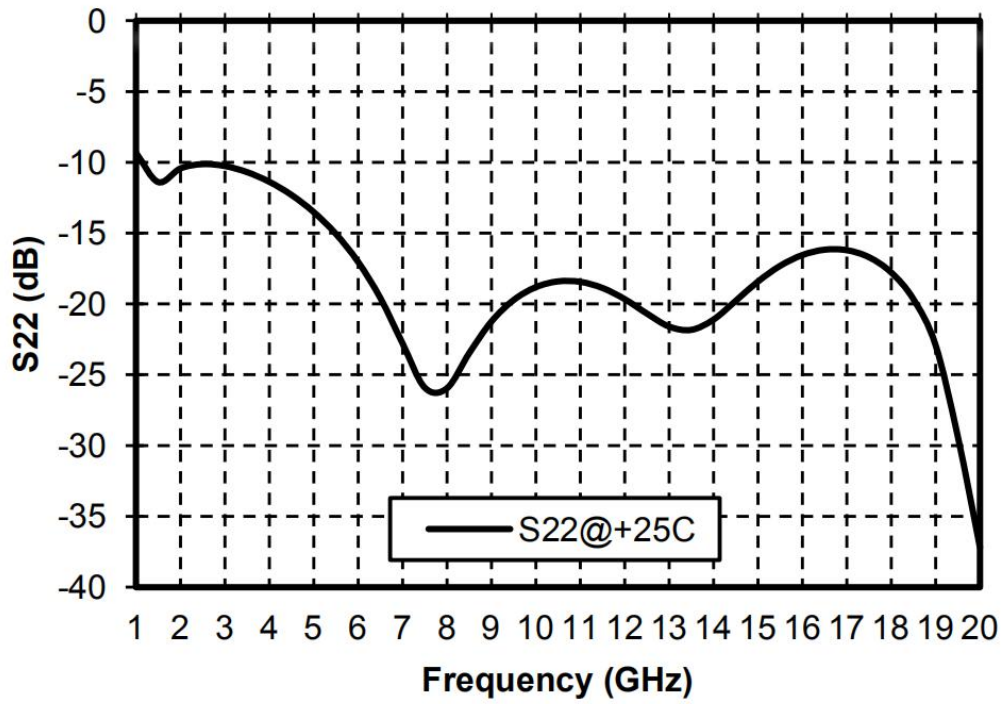
Reverse Isolation VS Frequency



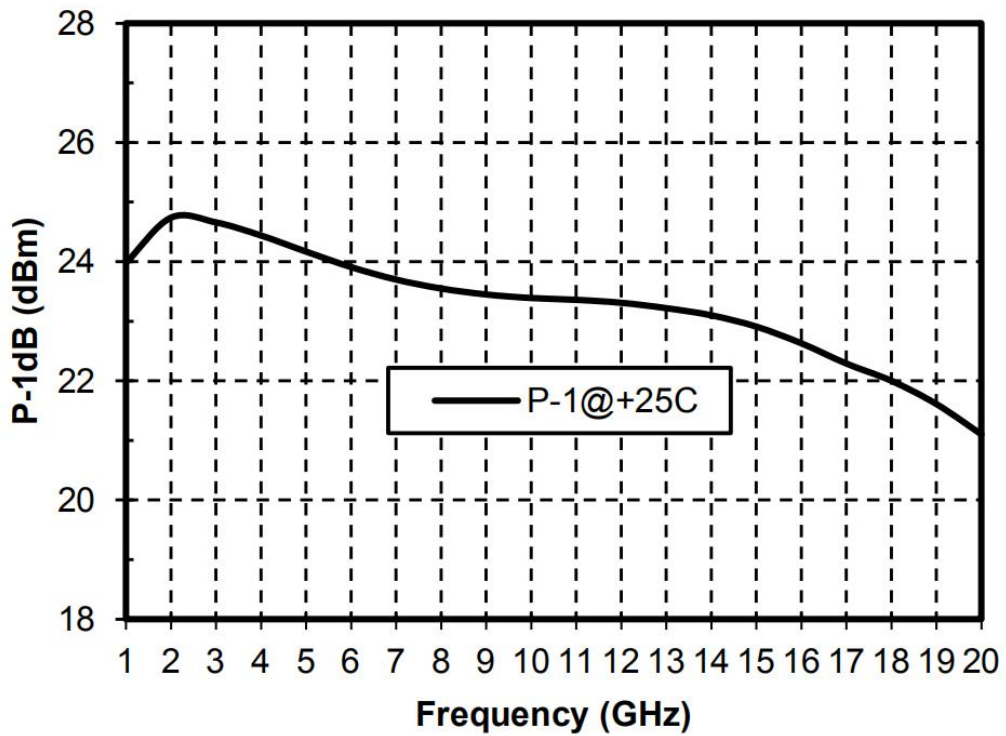
Input Return Loss VS Frequency



Output Return Loss VS Frequency

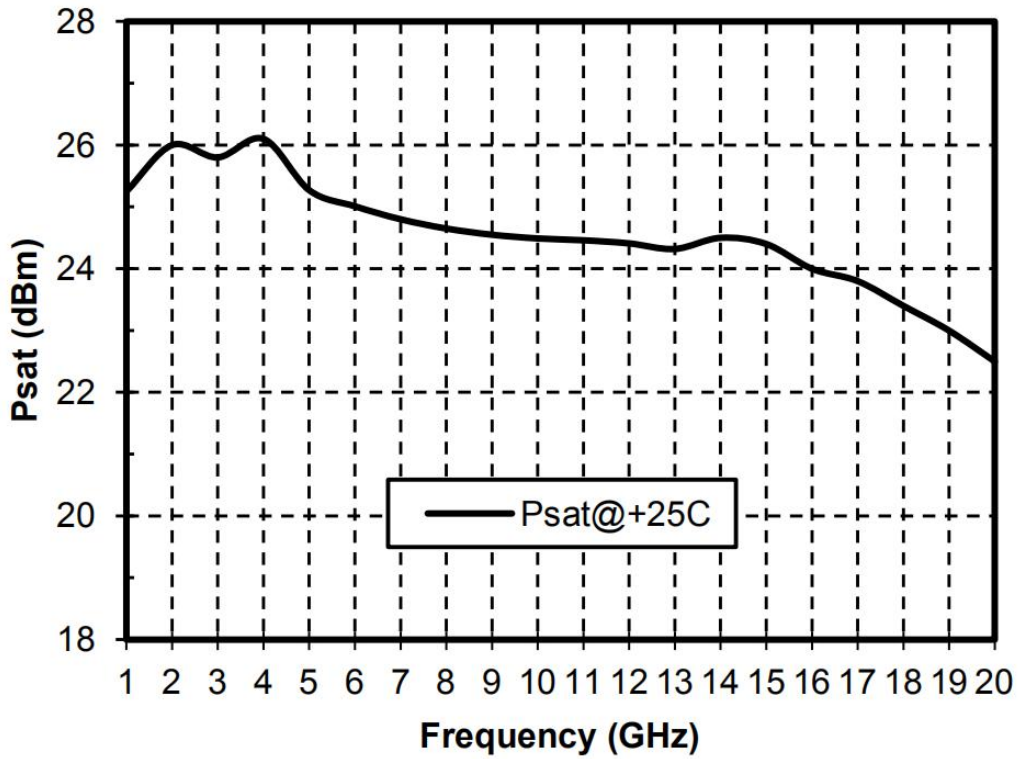


P-1dB VS Frequency





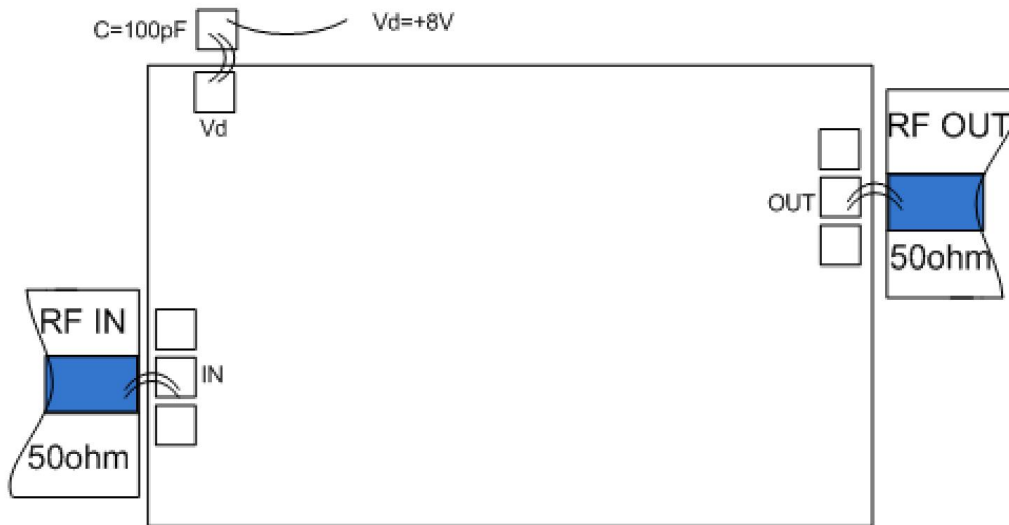
Psat VS Frequency



Outline Drawing:(μ m)



Assembly Diagram:



Handling Precautions

1. All bare die are placed in either Waffle or Gel based ESD protective containers, all die should be stored in a dry nitrogen environment.
2. Cleanliness: Handle the chips in a clean environment. DO NOT attempt to clean the chip using liquid cleaning systems
3. Follow ESD precautions to protect against ESD strikes
Handle the chip along the edges with a vacuum collet or with a sharp pair of bent tweezers. The surface of the chip has fragile air bridges and should not be touched with vacuum collet, tweezers, or fingers
4. Eutectic Die Attach: A 80/20 gold tin preform is recommended with a work surface temperature of 255 ° C and a tool temperature of 265 ° C. When hot 90/10 nitrogen/hydrogen gas is applied, tool tip temperature should
5. Epoxy Die Attach: Apply a minimum amount of epoxy to the mounting surface so that a thin epoxy fillet is observed around the perimeter of the chip once it is placed into position. Cure epoxy per the manufacturer's schedule
6. Ball or wedge bond with 0.025mm (1 mil) diameter pure gold wire. Thermosonic wirebonding with a nominal stage temperature of 150 ° C and a ball bonding force of 40 to 50 grams or wedge bonding force of 18 to 22 grams is recommended. Use the minimum level of ultrasonic energy to achieve reliable wirebonds. Wirebonds should be started on the chip and terminated on the package or substrate. All bonds should be as short as possible <0.31mm (12 mils).