CKJ1-03 A 2GHz HBT Power Amplifier Module

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Nowadays, wireless communication has become so popular. People use mobile phones for their convenience. As more and more people use the wireless communication, the existing frequency bandwidth for the wireless communication has become shortage. Due to the need of the frequency bandwidth, the frequency bandwidth has tried to shift to higher frequency in satellite communication. Our project will implement Power Amplifier Module by using high-speed heterojunction bipolar transistor (HBT) technology at 2GHz frequency range.

HBT device

The label ‘B’ is the base. The label ‘E’ is the emitter. The label ‘C’ is the collector.
Schematics of the Power Amplifier

System Blocks Diagram

- Biasing circuit with lump elements
- Lump-element matching
- Transmission line
- HBT device
- Transmission line
- Lump-element matching
- Network Analyzer

- SMA connector
- Lump Elements Matching Network
- HBT device
- Lump Elements Matching Network
- SMA connector
The power gain of the Power Amplifier at 1.6GHz with 3.28dB gain

This is the product of the Power Amplifier module.