

Bipolar RF Transistors

Class C 2.7-2.9 GHz

Product Description

The WPTB48F2729Cx is an application specific transistor implemented using Northrop Grumman's SiGe Power Bipolar process and developed for pulsed radar systems. Optimal internal matching delivers high performance for Air Traffic Control applications with collector efficiencies approaching the values normally observed for L-Band devices operating at less than half the frequency. This device is configured for common base operation and is tested at 60 msec pulse width and 6% duty cycle.

Features

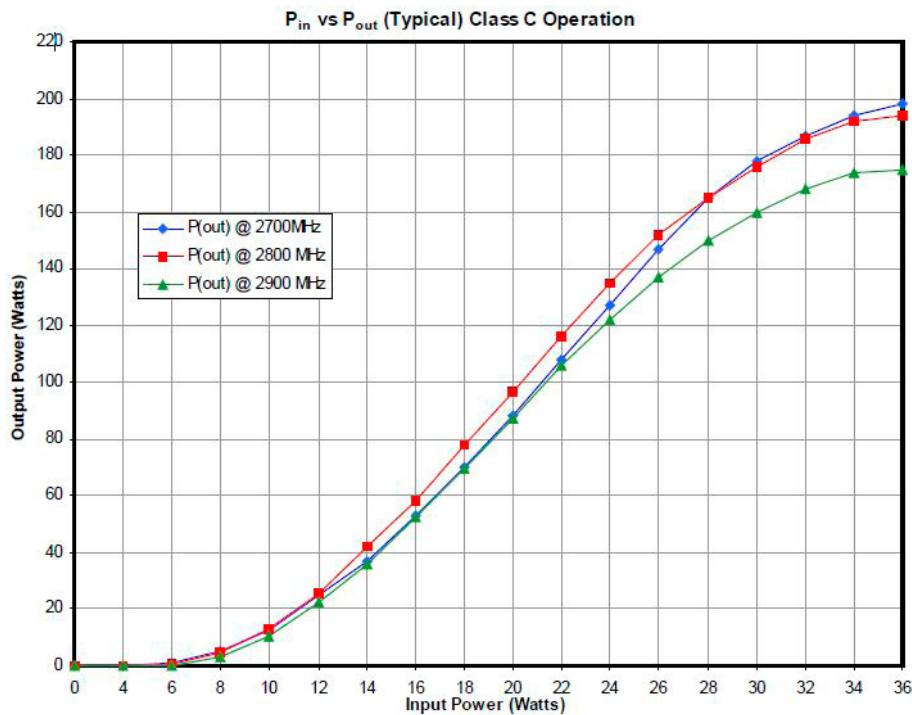
- Silicon Germanium HBT Technology
- Refractory/Gold Metalization
- Two Stage Internal Matching
- Metal/Ceramic Hermetic Package
- Single Transistor Die Implementation

Absolute Maximum Ratings

| | |
|---|----------------|
| Storage Temperature | -65° to 200° C |
| Operating Junction Temperature | 200° C |
| Lead Temperature (Soldering 10 sec) | 300° C |
| Collector-Base Voltage | 55V |
| Emitter-Base Voltage | 3V |
| Peak Collector Current | 14A |
| Transient Thermal Resistance..... | 0.25°C/W |

| Electrical Performance | | | | | | |
|----------------------------------|------------|-----|-----|-----|-------|--|
| Characteristic | Symbol | Min | Typ | Max | Units | Test Conditions |
| Collector-Base Breakdown Voltage | BV_{cbo} | 55 | 60 | | Volts | $I = 10 \text{ mA}$ |
| Emitter-Base Breakdown Voltage | BV_{ebo} | 3 | 5 | | Volts | $I = 10 \text{ mA}$ |
| Forward Current Transfer Ratio | H_{fe} | 20 | 50 | 125 | | $V_{ce} = 5 \text{ V}$ $I_c = 500 \text{ mA}$ |
| Common Base Power Gain | | 6.9 | 7.1 | 8 | dB | Note 1 |
| Collector Efficiency | | 40 | 46 | | % | Note 2 |
| Load Mismatch Tolerance | | 2:1 | | | VSWR | Note 1 |
| Frequency Band | | 2.7 | | 2.9 | GHz | |

Note 1: $V_{cc} = 36 \text{ Volts}$, Pulse Width = 60 μsec , Duty = 6.33%, $P_{in} = 28 \text{ Watts}$



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Specifications and features subject to change without notice.

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