



RF5616 Reliability Report

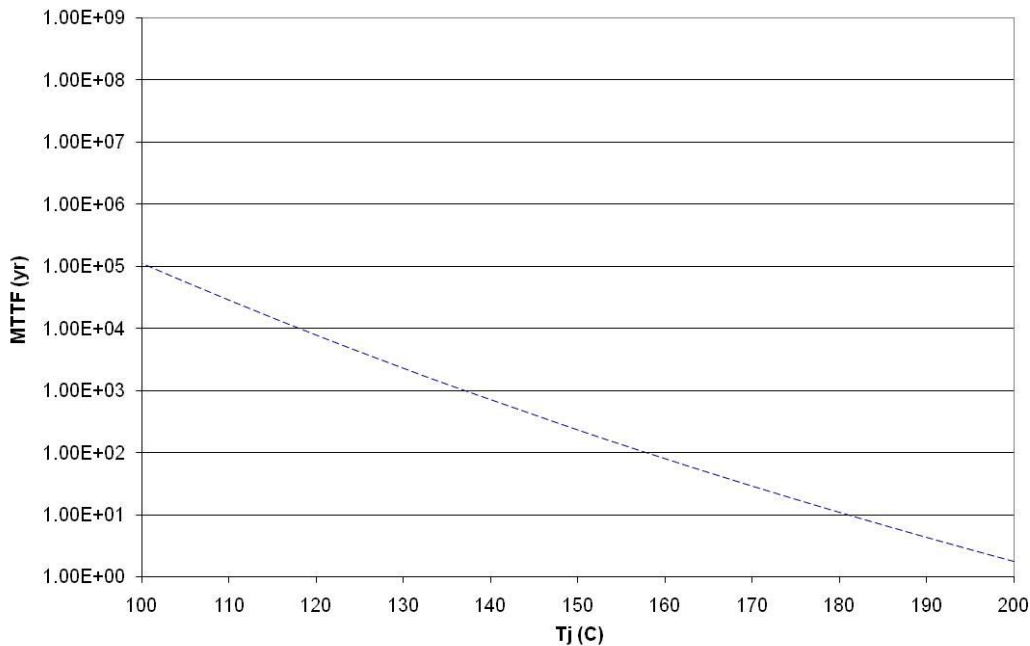
Introduction

The RF5616 is a linear, medium-power, high-efficiency power amplifier IC designed specifically for battery-powered WLAN applications such as PC cards, mini PCI, and compact flash applications. It is also designed to meet IEEE802.11a, IEEE802.11n, IEEE802.16e (4.9GHz to 5.850GHz only) WiMax, FCC, and ETSI requirements for operation in the 4.9GHz to 5.850GHz band. The device is manufactured on an advanced InGaP GaAs Heterojunction Bipolar Transistor process, and has been designed for use as the final RF amplifier in 5GHz WLAN and other spread-spectrum transmitters. The device is provided in a QFN, 16-pin, 3mmx3mmx0.45mm, leadless chip carrier with backside ground. The RF5616 operates from a single supply and will be easily incorporated into WLAN and other designs with minimal external components.

Wearout Failure Rate

The process wearout reliability tests were performed on single HBT transistors at the RFMD GaAs fabrication facility. The wearout activation energy and other distribution parameters were determined with 3-temperature life tests. The wearout failure rate of products are calculated based on the parameters and product specific information such as total number of transistors on each GaAs die. Therefore, the wearout reliability is determined by both process wearout parameters and product specific information. E_a was observed to be 1.68 eV. The MTTF results are presented in the graph below.

RF5616 Wearout MTTF vs T_j



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