



RF5616 Reliability Report

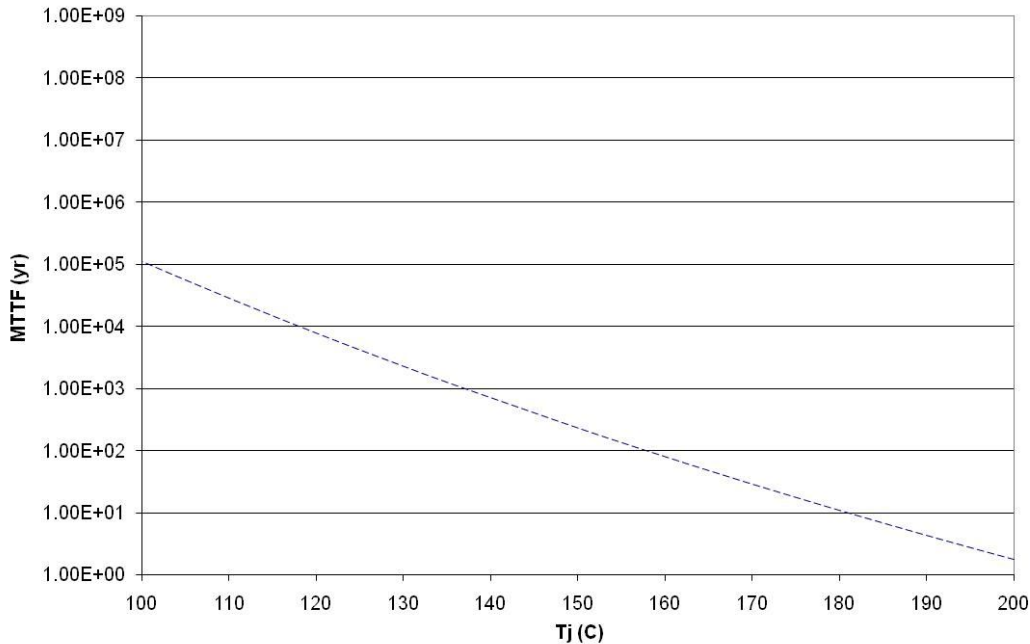
Introduction

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. Ea was observed to be 1.68 eV. The MTTF results are presented in the graph below.

RF5616 Wearout MTTF vs Tj



IMPORTANT DISCLAIMER: Any information provided by RFMD or any employee of RFMD concerning the projected lifetime or projected failure rates of RFMD's products (including, without limitation, any FIT, MTTF or MTBF data), whether contained herein, on RFMD's website or in any other written, electronic or oral communication, represents only such person's knowledge and belief as of the date that it is provided, and is based on limited data that may not allow for accurate projections. Depending on the metric and the context, such knowledge and belief may be based on the results of internal product testing, the use of third party reliability software, or on failure data provided by foundry partners, subcontractors or other third parties. RFMD assumes no responsibility for inaccuracies or omissions in this information or for the use of this information by any recipient, and any such use shall be entirely at the recipient's own risk. While RFMD may perform internal accelerated product lifetime testing, these tests cannot accurately simulate long-term use of products in the field by any particular customer. This information does not constitute an express or implied warranty of any RFMD product, and does not amend or supplement RFMD's Standard Terms and Conditions of Sale, which governs all warranty and any other product sale terms and expressly waives all implied warranties.

RFMD® Corporate Headquarters & GaAs HBT Fabrication Facilities
7628 Thorndike Road
Greensboro, NC 27409-9421
Phone: 336.664.1233