MTBF

APR24-3G Rectifier module

MTBF

Calculated MTBF for the APR24-3G rectifier module is: <u>448841 hours</u> (51.2 years).

Method

For calculation purposes, the rectifier is considered as a "series system" of all its components. This implies that failure of any one component causes the failure of the system. The net result of the series system assumption is a very conservative (i.e. low) estimate of MTBF. A more detailed fault analysis would result in an increased MTBF

The MTBF was calculated using the Parts Count method and the Failure Rate data described in the following document published by British Telecom:

Handbook of Reliability Data for Components used in Telecommunications Systems HRD5

Calculation factors

1.   Environment: Ground Benign

2.   Temperature coefficient (Π_T): 2

3.   Quality Level: 2

4.   Base failure rate of the Power MOSFETs is estimated to be 50. (This is from the base failure rate for Power MOSFETs given in HRD5, being the same as that of power BJTs. The base failure rate for Power BJTs in HRD 4 is 50, therefore 50 has also been used for the Power MOSFETs).

5.   The effects of the 8 hour production burn-in period are ignored. This is because the calculation for MTBF assumes the product will be in the mid-life region of its lifetime and the burn-in period is during the infancy failure region of the product lifetime.

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