MTBF analysis of production DRXP board

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ELECS INDUSTRY CO.,LTD.

# MTBF

The MTBF of the production DRXP board at maximum operational temperature is about 32 years.

# Worst 20 components list

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| MTBF Worst No | Component | Quantity | FIT | FIT Subtotal | MTBF Subtotal  [H] | MTBF Subtotal [Year] |
| 1 | Ceramic capacitor 0.22uF | 112 | 6 | 672 | 1488095 | 170 |
| 2 | DC-DC convertor | 1 | 470 | 470 | 2127660 | 243 |
| 3 | Inductor 4.7uH | 12 | 36 | 432 | 2314815 | 264 |
| 4 | Ceramic capacitor 0.1uF | 67 | 6 | 402 | 2487562 | 284 |
| 5 | Ceramic capacitor 4.7uF | 38 | 6 | 228 | 4385965 | 501 |
| 6 | Ceramic capacitor 22uF | 33 | 6 | 198 | 5050505 | 577 |
| 7 | DDR3 SDRAM | 8 | 20 | 160 | 6250000 | 713 |
| 8 | Ceramic capacitor 22uF | 24 | 6 | 144 | 6944444 | 793 |
| 9 | Ceramic capacitor 10uF | 21 | 6 | 126 | 7936508 | 906 |
| 10 | Ceramic capacitor 47uF | 19 | 6 | 114 | 8771930 | 1001 |
| 11 | Ceramic capacitor 100uF | 18 | 6 | 108 | 9259259 | 1057 |
| 12 | Ceramic capacitor 1500pF | 13 | 6 | 78 | 12820513 | 1464 |
| 13 | NPN Transistor | 5 | 15 | 75 | 13333333 | 1522 |
| 14 | Aluminum solid electrolytic capacitor 220uF | 5 | 13.5 | 67.5 | 14814815 | 1691 |
| 15 | Ceramic capacitor 820pF | 10 | 6 | 60 | 16666667 | 1903 |
| 16 | Ceramic capacitor 0.01uF | 8 | 6 | 48 | 20833333 | 2378 |
| 17 | Ceramic capacitor 220pF | 5 | 6 | 30 | 33333333 | 3805 |
| 18 | Crystal oscillator 200MHz | 2 | 12 | 24 | 41666667 | 4756 |
| 19 | Crystal oscillator 125MHz | 2 | 12 | 24 | 41666667 | 4756 |
| 20 | Ceramic capacitor 4.7uF | 3 | 6 | 18 | 55555556 | 6342 |