

Reliability Prediction Report

Part Number VTS4800(DC-DC)
 Date 2003 11, 18
 Environment GB
 Ambient Temperature 40 degrees C

MIL-HDBK-217FN2 Part Stress
 Failure Rate 25.905674
 MTBF 38,602

| Assembly Name | Part Number | Ref Des | Qty | Failure Rate | MTBF | Reliability |
|----------------|----------------|----------------|------|--------------|--------|-------------|
| VTS4800(DC-DC) | VTS4800(DC-DC) | VTS4800(DC-DC) | 1.00 | 25.905674 | 38,602 | .9974 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|---------------|----------------------------------|--------------------|---|------|--------------|---------------|
| XPC855TZP80D4 | CPU, PBGA357,Stepping D4 | Integrated Circuit | C1: 0.060000 C2: 0.015045 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.306413 Model Failure Rate: 0.051814 | 1.00 | .05 | 19,299,735.29 |
| CS-306 | Crystal,32.768Khz, ±20ppm, SMD | Miscellaneous | Lambda B: 0.029007 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 1.000000 Model Failure Rate: 0.029007 | 1.00 | .03 | 34,474,911.34 |
| SX-6 | Crystal,25.000Mhz, ±30ppm, SMD | Miscellaneous | Lambda B: 0.027256 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 1.000000 Model Failure Rate: 0.027256 | 1.00 | .03 | 36,688,541.36 |
| SCO-060 | Oscillator,5.000Mhz, ±30ppm, DIP | Other | Model Failure Rate: 0.092600 | 1.00 | .09 | 10,799,136.07 |

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|-----------------|--|--------------------|---|------|--------------|---------------|
| SCO-060 | Oscillator,14.7456Mhz, ±30ppm, DIP | Other | Model Failure Rate: 0.092600 | 1.00 | .09 | 10,799,136.07 |
| K4S511632M-TC75 | Dram Memory,SDRAM 64MB, TSOP54 | Integrated Circuit | C1: 0.062000 C2: 0.010235 Lambda Cyc: 0.000000 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.306413 Model Failure Rate: 0.048230 | 4.00 | .19 | 5,183,476.71 |
| 1N4002 | Diode,Rectifier Diode, 100V, 1A, AXIAL | Semiconductor | Lambda B: 0.025000 Pi C: 1.000000 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 2.400000 Pi S: 0.420328 Pi T: 1.643920 Model Failure Rate: 0.041459 | 2.00 | .08 | 12,060,067.51 |

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|-------------------|----------------------------|--------------------|---|------|--------------|----------------|
| AM29DL642G90MDI | Flash Memory,16MB, FBGA63 | Integrated Circuit | C1: 0.062000 C2: 0.010235 Lambda Cyc: 0.000000 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.306413 Model Failure Rate: 0.048230 | 2.00 | .10 | 10,366,953.41 |
| AT24C01A-10SC-2.7 | EEprom Serial,1Kbit, SOIC8 | Integrated Circuit | C1: 0.000850 C2: 0.002645 Lambda Cyc: 0.000000 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.306413 Model Failure Rate: 0.003166 | 1.00 | 3.17e-003 | 315,823,558.64 |

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|--------------------|---|--------------------|---|-------|--------------|---------------|
| XC95288XL-10BG256C | IC-Cpld,3.3V CPLD, BGA256 | Integrated Circuit | C1: 0.006800 C2: 0.015045 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.192167 Model Failure Rate: 0.017658 | 1.00 | .02 | 56,631,084.64 |
| LXT972ALC A4 | IC-Custom,Ethernet Transceiver, LQFP64 | Integrated Circuit | C1: 0.060000 C2: 0.024994 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.306413 Model Failure Rate: 0.061763 | 1.00 | .06 | 16,190,841.25 |
| TL16C554APN | IC-Custom,QUAD UART, TQFP80 | Integrated Circuit | C1: 0.060000 C2: 0.026685 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.306413 Model Failure Rate: 0.063455 | 12.00 | .76 | 1,313,276.26 |

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|--------------|---|--------------------|---|------|--------------|---------------|
| MMDF3N02HD | IC-MOSFET,Dual N-Channel FET, SOIC8 | Semiconductor | Lambda B: 0.012000 Pi A: 2.000000 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 2.400000 Pi T: 3.793289 Model Failure Rate: 0.218493 | 2.00 | .44 | 2,288,397.95 |
| LM1085IS-3.3 | IC-Regulator,Low Dropout Regulator 3A, TO-263 | Integrated Circuit | C1: 0.010000 C2: 0.005593 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.991596 Model Failure Rate: 0.025424 | 1.00 | .03 | 39,332,224.60 |
| LTC1314CS | IC-Regulator,PCMCIA Switching Matrix, SOIC14 | Integrated Circuit | C1: 0.010000 C2: 0.004841 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.336382 Model Failure Rate: 0.011569 | 1.00 | .01 | 86,437,224.94 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|-------------|-------------------------------------|--------------------|---|-------|--------------|----------------|
| MAX704TCSA | IC-Reset,3.3V Voltage monitor,SOIC8 | Integrated Circuit | C1: 0.010000 C2: 0.004841 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.357697 Model Failure Rate: 0.011995 | 1.00 | .01 | 83,365,320.63 |
| SP3243ECA | IC-RS232,RS-232, SSOP28 | Integrated Circuit | C1: 0.010000 C2: 0.010235 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.336382 Model Failure Rate: 0.016963 | 49.00 | .83 | 1,203,123.51 |
| SM8578BV | IC-RTC,Real-time Clock, VSOP8 | Integrated Circuit | C1: 0.010000 C2: 0.002645 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.336382 Model Failure Rate: 0.009373 | 1.00 | 9.37e-003 | 106,688,817.13 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|-------------|---------------------------------------|--------------------|---|------|--------------|---------------|
| 74LCX541WM | IC-TTL,Octal Buffer, SOIC20 | Integrated Circuit | C1: 0.002500 C2: 0.007117 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.211262 Model Failure Rate: 0.008173 | 7.00 | .06 | 17,479,422.00 |
| 74LCX573WM | IC-TTL,Octal Latch, SOIC20 | Integrated Circuit | C1: 0.002500 C2: 0.007117 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.211262 Model Failure Rate: 0.008173 | 4.00 | .03 | 30,588,988.49 |
| 74LCX574WM | IC-TTL,Octal D-Type Flip-Flop, SOIC20 | Integrated Circuit | C1: 0.002500 C2: 0.007117 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.211262 Model Failure Rate: 0.008173 | 6.00 | .05 | 20,392,659.00 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|-------------|---|--------------------|---|------|--------------|----------------|
| 74LCX245WM | IC-TTL,Bidirectional Transceiver, SOIC20 | Integrated Circuit | C1: 0.002500 C2: 0.007117 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.211262 Model Failure Rate: 0.008173 | 1.00 | 8.17e-003 | 122,355,953.97 |
| SEC-0103 | LED Diode,2X1 pin, Yellow, 3mm, Dip | Semiconductor | Lambda B: 0.000230 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 2.400000 Pi T: 1.566240 Model Failure Rate: 8.64565E-4 | 3.00 | 2.59e-003 | 385,550,481.37 |
| SEC-0133 | LED Diode,2X2 pin Array, Yellow, Yellow, 3mm, Dip | Semiconductor | Lambda B: 0.000230 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 2.400000 Pi T: 1.566240 Model Failure Rate: 8.64565E-4 | 2.00 | 1.73e-003 | 578,325,722.05 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|-------------------|----------------------------------|---------------|--|------|--------------|------------------|
| SEO-0407 | LED Diode,2X1 pin, Red, 5mm, Dip | Semiconductor | Lambda B: 0.000230 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 2.400000 Pi T: 1.566240 Model Failure Rate: 8.64565E-4 | 2.00 | 1.73e-003 | 578,325,722.05 |
| HB2012 | SMD Bead,2012, Bead, 600 | Inductor | Lambda B: 0.000030 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 1.000000 Pi T: 1.227881 Model Failure Rate: 3.68364E-5 | 5.00 | 1.84e-004 | 5,429,408,751.85 |
| 1μF, 16V, 3216(A) | SMD Capacitor,Tantal | Capacitor | Lambda B: 0.000400 Pi C: 4.897788 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.323051 Pi V: 1.001015 Model Failure Rate: 0.007784 | 1.00 | 7.78e-003 | 128,469,947.55 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|---------------------------|----------------------|-----------|--|-------|--------------|---------------|
| 10 μ F, 6.3V, 3216(A) | SMD Capacitor,Tantal | Capacitor | Lambda B: 0.000400 Pi C: 4.897788 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.323051 Pi V: 1.001015 Model Failure Rate: 0.007784 | 10.00 | .08 | 12,846,994.75 |
| 10 μ F, 10V, 3216(A) | SMD Capacitor,Tantal | Capacitor | Lambda B: 0.000400 Pi C: 4.897788 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.323051 Pi V: 1.001015 Model Failure Rate: 0.007784 | 4.00 | .03 | 32,117,486.89 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|--------------------------|----------------------|-----------|--|------|--------------|----------------|
| 22 μ F, 16V, 6032(C) | SMD Capacitor,Tantal | Capacitor | Lambda B: 0.000400 Pi C: 4.897788 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.323051 Pi V: 1.001015 Model Failure Rate: 0.007784 | 1.00 | 7.78e-003 | 128,469,947.55 |
| 47 μ F, 16V, 7343(D) | SMD Capacitor,Tantal | Capacitor | Lambda B: 0.000400 Pi C: 4.897788 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.323051 Pi V: 1.001015 Model Failure Rate: 0.007784 | 1.00 | 7.78e-003 | 128,469,947.55 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|--------------------------|---------------|-----------|--|-------|--------------|---------------|
| 1608, 0.001 μ F, 50V | SMD Capacitor | Capacitor | Lambda B: 0.002000 Pi C: 1.064370 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.921670 Pi V: 1.296296 Model Failure Rate: 0.015908 | 3.00 | .05 | 20,953,264.23 |
| 1608, 0.01 μ F, 16V | SMD Capacitor | Capacitor | Lambda B: 0.002000 Pi C: 1.064370 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.921670 Pi V: 1.296296 Model Failure Rate: 0.015908 | 19.00 | .30 | 3,308,410.14 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|------------------------|---------------|-----------|--|--------|--------------|---------------|
| 1608, 0.1 μ F, 16V | SMD Capacitor | Capacitor | Lambda B: 0.002000 Pi C: 1.064370 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.921670 Pi V: 1.296296 Model Failure Rate: 0.015908 | 360.00 | 5.73 | 174,610.54 |
| 1608, 10pF, 50V | SMD Capacitor | Capacitor | Lambda B: 0.002000 Pi C: 1.064370 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.921670 Pi V: 1.296296 Model Failure Rate: 0.015908 | 1.00 | .02 | 62,859,792.68 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|-----------------|---------------|-----------|--|------|--------------|---------------|
| 1608, 15pF, 50V | SMD Capacitor | Capacitor | Lambda B: 0.002000 Pi C: 1.064370 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.921670 Pi V: 1.296296 Model Failure Rate: 0.015908 | 2.00 | .03 | 31,429,896.34 |
| 1608, 18pF, 50V | SMD Capacitor | Capacitor | Lambda B: 0.002000 Pi C: 1.064370 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.921670 Pi V: 1.296296 Model Failure Rate: 0.015908 | 2.00 | .03 | 31,429,896.34 |

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| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|------------------|---------------|-----------|--|--------|--------------|---------------|
| 1608, 33pF, 50V | SMD Capacitor | Capacitor | Lambda B: 0.002000 Pi C: 1.064370 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.921670 Pi V: 1.296296 Model Failure Rate: 0.015908 | 343.00 | 5.46 | 183,264.70 |
| 1608, 270pF, 50V | SMD Capacitor | Capacitor | Lambda B: 0.002000 Pi C: 1.064370 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.921670 Pi V: 1.296296 Model Failure Rate: 0.015908 | 2.00 | .03 | 31,429,896.34 |

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|-------------|--|---------------|---|------|--------------|----------------|
| 1N4733 | SMD Diode,Zener Diode, 5.1V, 1W, SMD | Semiconductor | Lambda B: 0.002000 Pi C: 1.000000 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 2.400000 Pi S: 1.000000 Pi T: 4.468766 Model Failure Rate: 0.021450 | 1.00 | .02 | 46,619,878.61 |
| 1N5819 | SMD Diode,Schottky Diode, 40V, 1A, SMD | Semiconductor | Lambda B: 0.003000 Pi C: 1.000000 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 2.400000 Pi S: 0.420328 Pi T: 1.643920 Model Failure Rate: 0.004975 | 2.00 | 9.95e-003 | 100,500,562.62 |
| SL42 | SMD Diode,Schottky Diode, 20V, 4A, SMD | Semiconductor | Lambda B: 0.003000 Pi C: 1.000000 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 2.400000 Pi S: 0.420328 Pi T: 1.643920 Model Failure Rate: 0.004975 | 2.00 | 9.95e-003 | 100,500,562.62 |

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|---------------------------------|----------------------------|--------------------|--|-------|--------------|---------------|
| SMDA15C-8 | TVS Diode, Surge, ESD, EFT | Integrated Circuit | C1: 0.010000 C2: 0.002645 Pi E: 0.500000 Pi FY: 4.000000 Pi L: 1.000000 Pi Q: 2.000000 Pi T: 0.336382 Model Failure Rate: 0.009373 | 49.00 | .46 | 2,177,322.80 |
| 0.001 μ F, 2KV, DIP 10MM | Capacitor Surge | Capacitor | Lambda B: 0.000990 Pi C: 1.064370 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 3.000000 Pi SR: 1.000000 Pi T: 1.921670 Pi V: 1.296296 Model Failure Rate: 0.007875 | 6.00 | .05 | 21,164,913.36 |

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|-----------------------|--------------|----------|---|--------|--------------|---------------|
| 3216, 0 , 5%, 1/8W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 2.00 | .02 | 41,313,076.50 |
| 1608, 0 , 5%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 345.00 | 4.18 | 239,496.10 |
| 1608, 10kΩ, 5%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 98.00 | 1.19 | 843,124.01 |

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|-------------------------|--------------|----------|---|-------|--------------|---------------|
| 1608, 1kΩ, 5%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 38.00 | .46 | 2,174,372.45 |
| 1608, 1.2kΩ, 5%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 1.00 | .01 | 82,626,152.99 |
| 1608, 22.1kΩ, 1%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 1.00 | .01 | 82,626,152.99 |

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|------------------------|--------------|----------|---|-------|--------------|---------------|
| 1608, 22 , 5%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 15.00 | .18 | 5,508,410.20 |
| 1608, 220 , 5%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 11.00 | .13 | 7,511,468.45 |
| 1608, 2.7kΩ, 5%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 4.00 | .05 | 20,656,538.25 |

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| 1608, 330 , 5%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 2.00 | .02 | 41,313,076.50 |
| 1608, 3.3kΩ, 5%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 16.00 | .19 | 5,164,134.56 |
| 1608, 4.7kΩ, 5%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 12.00 | .15 | 6,885,512.75 |

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|---------------------------|--|----------|---|-------|--------------|----------------|
| 1608, 49.9 , 1%, 1/16W | SMD Resistor | Resistor | Lambda B: 0.003700 Pi E: 1.000000 Pi FY: 4.000000 Pi P: 0.763130 Pi Q: 3.000000 Pi S: 1.230610 Pi T: 1.161023 Model Failure Rate: 0.012103 | 11.00 | .13 | 7,511,468.45 |
| HA-003A | SMD Transformer,1:1, 10/100 BASE-T, 16P | Inductor | Lambda B: 0.022000 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 1.000000 Pi T: 1.227881 Model Failure Rate: 0.027013 | 1.00 | .03 | 37,018,696.04 |
| CR2032 SOCKET | Socket-Battery,1x2pin | Other | Model Failure Rate: 0.011600 | 1.00 | .01 | 86,206,896.55 |
| DIP 2.50MM | Socket-Jumper,1x3pin,Male,22-0- 4-1031 | Other | Model Failure Rate: 0.009319 | 1.00 | 9.32e-003 | 107,302,000.00 |
| DIP 2.50MM | Socket-Jack,1x4pin,Male,22-04-1- 041 | Other | Model Failure Rate: 0.015300 | 2.00 | .03 | 32,679,738.56 |

Reliability Prediction Report

Part Number VTS4800(DC-DC)
 Date 2003 11, 18
 Environment GB
 Ambient Temperature 40 degrees C

MIL-HDBK-217FN2 Part Stress
 Failure Rate 25.905674
 MTBF 38,602

| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|-----------------|--|----------|------------------------------|------|--------------|----------------|
| DIP 2.54MM | Socket-Jumper,2x5pin,Male | Other | Model Failure Rate: 0.009319 | 1.00 | 9.32e-003 | 107,302,000.00 |
| DIP 2.54MM | Socket-Jumper,1x6pin,Male | Other | Model Failure Rate: 0.009319 | 1.00 | 9.32e-003 | 107,302,000.00 |
| 61126-050CAH | Socket-PCMCIA,3.3V PCMCIA Single Socket | Other | Model Failure Rate: 0.032000 | 1.00 | .03 | 31,250,000.00 |
| STP-1236A | Switch Push,Tact Switch, DIP, Right Angle | Other | Model Failure Rate: 0.003200 | 1.00 | 3.20e-003 | 312,500,000.00 |
| XRJD-S-21-8-8-4 | RJ-45 Conn,RJ45, 2X1 Array, shield, EMI Flip | Other | Model Failure Rate: 0.010000 | 1.00 | .01 | 100,000,000.00 |
| 5808-57G122 | RJ-45 Conn,RJ45, 2x8 Array, shield, EMI Flip | Other | Model Failure Rate: 0.010000 | 3.00 | .03 | 33,333,333.33 |

Reliability Prediction Report

Part Number VTS4800(DC-DC)
 Date 2003 11, 18
 Environment GB
 Ambient Temperature 40 degrees C

MIL-HDBK-217FN2 Part Stress
 Failure Rate 25.905674
 MTBF 38,602

| Part Number | Description | Category | Pi Factors | Qty | Failure Rate | MTBF |
|------------------|----------------------------|---------------|---|------|--------------|------------------|
| KRC101S | Transistor,NPN, SOT23 | Semiconductor | Lambda B: 0.000740 Pi A: 1.500000 Pi E: 1.000000 Pi FY: 4.000000 Pi Q: 2.400000 Pi R: 0.773782 Pi S: 0.212016 Pi T: 1.466456 Model Failure Rate: 6.40901E-4 | 1.00 | 6.41e-004 | 1,560,302,749.94 |
| VTS4800 REV. 0.2 | PCB,8Layers, 389mm x 243mm | Other | Model Failure Rate: 0.658600 | 1.00 | .66 | 1,518,372.30 |
| NFC25 | | Other | | 1.00 | 3.03 | 330,000.00 |

Percentage Summary

| <u>Part Type</u> | <u>Quantity</u> | <u>% Quantity</u> | <u>Failure Rate</u> | <u>% Failure Rate</u> |
|------------------|-----------------|-------------------|---------------------|-----------------------|
| IC, Logic | 18.00 | 1.20 | 0.147112 | 0.56 |
| IC, PAL, PLA | 1.00 | 0.07 | 0.017658 | 0.07 |
| IC, Memory | 7.00 | 0.47 | 0.292547 | 1.11 |
| IC, Microproc | 14.00 | 0.94 | 0.875032 | 3.31 |
| IC, Linear | 102.00 | 6.83 | 1.348811 | 5.10 |
| Trans, Bipolar | 1.00 | 0.07 | 0.012090 | 0.05 |
| Trans, FET | 2.00 | 0.13 | 0.020629 | 0.08 |
| Diode | 7.00 | 0.47 | 0.071150 | 0.27 |
| Opto-elec | 7.00 | 0.47 | 1.014152 | 3.83 |
| Res, Fixed | 556.00 | 37.22 | 6.729104 | 25.44 |
| Cap, Fixed | 755.00 | 50.54 | 11.824538 | 44.70 |
| Ind, Transformer | 1.00 | 0.07 | 0.027013 | 0.10 |
| Ind, Coil | 5.00 | 0.33 | 0.000184 | 0.00 |
| Crystal | 2.00 | 0.13 | 0.056263 | 0.21 |
| User | 1.00 | 0.07 | 3.030303 | 11.45 |
| NPRD Part | 15.00 | 1.00 | 0.989158 | 3.74 |

First Year Dropout

| <u>Month</u> | <u>Failure Rate</u> | <u>Expected # of Failures</u> | <u>Avg. Cumulative Failure Rate</u> |
|--------------|---------------------|-------------------------------|-------------------------------------|
| 1 | 188.377002 | 0.000550 | 753.505005 |
| 2 | 112.009636 | 0.000654 | 448.036418 |
| 3 | 82.639359 | 0.000724 | 330.555702 |
| 4 | 66.601328 | 0.000778 | 266.403809 |
| 5 | 56.337864 | 0.000823 | 225.350113 |
| 6 | 49.137657 | 0.000861 | 196.549401 |
| 7 | 43.772802 | 0.000895 | 175.090074 |
| 8 | 39.601386 | 0.000925 | 158.404484 |
| 9 | 36.253171 | 0.000953 | 145.011683 |
| 10 | 33.498694 | 0.000978 | 133.993828 |
| 11 | 31.187701 | 0.001002 | 124.749900 |
| 12 | 29.217426 | 0.001024 | 116.868835 |