

**SOFASCO INC.**  
**THE TEST REPORT OF MTBF**

試驗機種 SAMPLES P/N	D6010V12MB		試驗條件 TEST CONDITION	文件編號 DOCUNEMT NO.	R-8203	
取樣數量 TESTED SAMPLES	50	PCS.	<input checked="" type="checkbox"/> 溫度 TEMP. : 70 °C <input type="checkbox"/> ON : SEC. <input type="checkbox"/> OFF : SEC. <input type="checkbox"/> 其他 OTHER :	試驗時間 開始 START	2007/3/1 _17:00	
試驗時間 HRS/EA	1000	HRS		TEST PERIOD	結束 FINISHED	2007/4/12 _09:00
總試驗時間 TOTAL TEST HRS	50000	HRS				

故障定義 PRODUCT SPECIFICATION & FAILURE DEFINITION	試驗結果：包含故障時間、數據、統計、...等 TEST RESULT：INCLUDING TIME OF FAILURE、DATUM、STATISTICS、...ETC.																																														
1. 風扇不轉 (FAN NOT WORK.)  2. 轉速超出規格30% (ROUND SPEED OVER 30% ORIGIN.)  3. 電流超出規格30% (CURRENT OVER 30% ORIGIN.)	• 溫度加速因子 TEMP A.F = $e^{(\Delta H / K) \times (\frac{1}{273+Tl} - \frac{1}{273+Th})}$  • 總試驗時間 TOTAL TEST HRS = 50000 HRS. ↓ (r=1, M=3.8897) • 查表得 (MTTF BY GEM TABLE) MTTF = 12854 HRS.																																														
Description : 1. 性能測試時點 The Time Of Check Point 1000Hrs, 1000Hrs And Finished  $70^{\circ}\text{C MTTF} = \frac{\text{Total test time (T)}}{\text{Total failure (r)}}$ <p style="text-align: center;"><b>GEM TABLE</b> Generalized Exponential Model (for Time-Terminated Test)</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>r</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>M</td> <td>2.3026</td> <td>3.8897</td> <td>5.3223</td> <td>6.6808</td> <td>7.99364</td> <td>9.2747</td> </tr> <tr> <td>r</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> <td></td> </tr> <tr> <td>M</td> <td>10.5321</td> <td>11.7709</td> <td>12.9947</td> <td>14.2060</td> <td>15.4066</td> <td></td> </tr> </table>	r	0	1	2	3	4	5	M	2.3026	3.8897	5.3223	6.6808	7.99364	9.2747	r	6	7	8	9	10		M	10.5321	11.7709	12.9947	14.2060	15.4066		• 溫度 / TEMP. / MTTF / L10  <table border="1" style="width: 100%; text-align: center;"> <tr> <td>溫度TEMP.</td> <td>信賴水準90% CONFIDENCE LEVEL MTTF</td> <td>L10</td> </tr> <tr> <td>30°C</td> <td>187154</td> <td>19700</td> </tr> <tr> <td>40°C</td> <td>89849</td> <td>9458</td> </tr> <tr> <td>50°C</td> <td>44989</td> <td>4736</td> </tr> <tr> <td>60°C</td> <td>22900</td> <td>2411</td> </tr> <tr> <td>70°C</td> <td>12854</td> <td>1353</td> </tr> </table>	溫度TEMP.	信賴水準90% CONFIDENCE LEVEL MTTF	L10	30°C	187154	19700	40°C	89849	9458	50°C	44989	4736	60°C	22900	2411	70°C	12854	1353
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3. Herewith, we could assume as right on the basis of above test result. Besides, if the actual test time exceed the required, it comes out that those fans' L10 expectancy and MTTF are greater than the warrant.  MTTF: Mean Time To Failures. It should be used in a non-requirable system setting. Now we show the MTTF in our life report, that's because we will not repair the failed fans during life experiment. MTBF: Mean Time Between Failures. It should be used in a repairable system setting Basically, MTBF is equal to MTTF, they use same formula to work out a life data.																																															

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