



Test Report: HVG-65-48

65W Constant Voltage + Constant Current LED Driver

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

■ RELIABILITY TEST

ENVIRONMENT TEST

■ ESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	RIPPLE & NOISE	V1 : 300 mVp-p (Max)	I/P : 347VAC O/P : FULL LOAD Ta : 25°C	V1 : 42 mVp-p (Max)
2	OUTPUT VOLTAGE ADJUST RANGE	CH1 : 43V ~ 53 V	I/P : 480 VAC I/P : 347 VAC O/P : MIN LOAD Ta : 25°C	41.76 V ~ 55.15 V / 480 VAC 41.755 V ~ 55.15 V / 347 VAC
3	OUTPUT CURRENT ADJUST RANGE	CH1 : 0.81A~1.36 A	I/P : 480 VAC I/P : 347 VAC O/P : CV MODE Ta : 25°C	0.592 A~ 1.532 A / 480 VAC 0.592 A~ 1.531 A / 347 VAC
4	OUTPUT VOLTAGE TOLERANCE	V1 : 1%~-1 % (Max)	I/P : 180 VAC / 480 VAC O/P : FULL/ MIN LOAD Ta : 25°C	V1 : 0.039 %~- -0.039 %
5	LINE REGULATION	V1 : 0.5 %~- -0.5% (Max)	I/P : 180 VAC ~ 480 VAC O/P : FULL LOAD Ta : 25°C	V1 : 0 %~- 0 %
6	LOAD REGULATION	V1 : 0.5 %~- -0.5% (Max)	I/P : 347 VAC O/P : FULL ~MIN LOAD Ta : 25°C	V1 : 0.053 %~- -0.025 %
7	SET UP TIME	480 VAC : 400 ms (Max) 347VAC : 400 ms(Max) 230VAC : 500 ms(Max)	I/P : 480 VAC I/P : 347 VAC I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	480 VAC/ 169 ms 347VAC/ 268 ms 230VAC/ 329 ms
8	RISE TIME	480 VAC : 80 ms (Max) 347VAC : 80 ms (Max) 230VAC : 80 ms (Max)	I/P : 480 VAC I/P : 347 VAC I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	480 VAC/ 47 ms 347VAC/ 48 ms 230VAC/ 48 ms
9	HOLD UP TIME	480 VAC : 30 ms (TYP) 347VAC : 16 ms (TYP)	I/P : 480 VAC I/P : 347 VAC O/P : FULL LOAD Ta : 25°C	480 VAC/ 41 ms 347VAC/ 18 ms
10	OVER/UNDERSHOOT TEST	< ±5%	I/P : 347 VAC O/P : FULL LOAD Ta : 25°C	TEST : <5 %

11	DYNAMIC LOAD	V1 : 4800 mVp-p	I/P : 347VAC (1).O/P : FULL /Min LOAD 90%DUTY/ 1KHZ (2).O/P : FULL /Min LOAD 90%DUTY/ 3KHZ (3).O/P : FULL /Min LOAD 90%DUTY/ 5KHZ (4).O/P : FULL /Min LOAD 50%DUTY/ 120HZ Ta : 25°C	(1)269 mVp-p (2)131 mVp-p (3)123 mVp-p (4)650 mVp-p																																																																																																																																																																																																						
12	<p>DIMMER TEST (B Type only) SPEC: ※Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 0 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-. ※Please DO NOT connect "DIM-" to "-V". ※Reference resistance value for output current adjustment (Typical)</p> <table border="1" data-bbox="148 797 1326 891"> <tr> <th>Resistance value</th> <th>Short</th> <th>10K</th> <th>20K</th> <th>30K</th> <th>40K</th> <th>50K</th> <th>60K</th> <th>70K</th> <th>80K</th> <th>90K</th> <th>100K</th> <th>OPEN</th> </tr> <tr> <td>Output current</td> <td>0%</td> <td>10%</td> <td>20%</td> <td>30%</td> <td>40%</td> <td>50%</td> <td>60%</td> <td>70%</td> <td>80%</td> <td>90%</td> <td>100%</td> <td>95%~108%</td> </tr> </table> <p>*1 ~ 10V dimming function for output current adjustment (Typical)</p> <table border="1" data-bbox="148 925 1326 1019"> <tr> <th>Dimming value</th> <th>Short</th> <th>1V</th> <th>2V</th> <th>3V</th> <th>4V</th> <th>5V</th> <th>6V</th> <th>7V</th> <th>8V</th> <th>9V</th> <th>10V</th> <th>OPEN</th> </tr> <tr> <td>Output current</td> <td>0%</td> <td>10%</td> <td>20%</td> <td>30%</td> <td>40%</td> <td>50%</td> <td>60%</td> <td>70%</td> <td>80%</td> <td>90%</td> <td>100%</td> <td>95%~108%</td> </tr> </table> <p>*10V PWM signal for output current adjustment (Typical) : Frequency range :100Hz ~ 3KHz</p> <table border="1" data-bbox="148 1052 1326 1146"> <tr> <th>Duty value</th> <th>Short</th> <th>10%</th> <th>20%</th> <th>30%</th> <th>40%</th> <th>50%</th> <th>60%</th> <th>70%</th> <th>80%</th> <th>90%</th> <th>100%</th> <th>OPEN</th> </tr> <tr> <td>Output current</td> <td>0%</td> <td>10%</td> <td>20%</td> <td>30%</td> <td>40%</td> <td>50%</td> <td>60%</td> <td>70%</td> <td>80%</td> <td>90%</td> <td>100%</td> <td>95%~108%</td> </tr> </table> <p>TEST RESULT: I/P : 230 VAC ;Ta : 25°C</p> <table border="1" data-bbox="148 1211 1369 1630"> <tr> <td rowspan="3">1</td> <td>Resistance value</td> <td>SHORT</td> <td>10K</td> <td>20K</td> <td>30K</td> <td>40K</td> <td>50K</td> <td>60K</td> <td>70K</td> <td>80K</td> <td>90K</td> <td>100K</td> <td>OPEN</td> </tr> <tr> <td>Output current</td> <td>0.000A</td> <td>0.154A</td> <td>0.286A</td> <td>0.418A</td> <td>0.550A</td> <td>0.681A</td> <td>0.812A</td> <td>0.946A</td> <td>1.074A</td> <td>1.205A</td> <td>1.328A</td> <td>1.409A</td> </tr> <tr> <td>%</td> <td>0.00%</td> <td>11.32%</td> <td>21.03%</td> <td>30.74%</td> <td>40.44%</td> <td>50.07%</td> <td>59.71%</td> <td>69.56%</td> <td>78.97%</td> <td>88.60%</td> <td>97.65%</td> <td>103.60%</td> </tr> <tr> <td rowspan="3">2</td> <td>Dimming value</td> <td>SHORT</td> <td>1V</td> <td>2V</td> <td>3V</td> <td>4V</td> <td>5V</td> <td>6V</td> <td>7V</td> <td>8V</td> <td>9V</td> <td>10V</td> <td>OPEN</td> </tr> <tr> <td>Output current</td> <td>0.000A</td> <td>0.162A</td> <td>0.299A</td> <td>0.433A</td> <td>0.567A</td> <td>0.694A</td> <td>0.826A</td> <td>0.969A</td> <td>1.095A</td> <td>1.231A</td> <td>1.369A</td> <td>1.409A</td> </tr> <tr> <td>%</td> <td>0.00%</td> <td>11.91%</td> <td>21.99%</td> <td>31.84%</td> <td>41.69%</td> <td>51.03%</td> <td>60.74%</td> <td>71.25%</td> <td>80.51%</td> <td>90.51%</td> <td>100.66%</td> <td>103.60%</td> </tr> <tr> <td rowspan="3">3</td> <td>Duty value</td> <td>SHORT</td> <td>10%</td> <td>20%</td> <td>30%</td> <td>40%</td> <td>50%</td> <td>60%</td> <td>70%</td> <td>80%</td> <td>90%</td> <td>100%</td> <td>OPEN</td> </tr> <tr> <td>Output current</td> <td>0.000A</td> <td>0.171A</td> <td>0.301A</td> <td>0.435A</td> <td>0.568A</td> <td>0.702A</td> <td>0.836A</td> <td>0.970A</td> <td>1.103A</td> <td>1.237A</td> <td>1.371A</td> <td>1.409A</td> </tr> <tr> <td>%</td> <td>0.00%</td> <td>12.57%</td> <td>22.13%</td> <td>31.99%</td> <td>41.76%</td> <td>51.62%</td> <td>61.47%</td> <td>71.32%</td> <td>81.10%</td> <td>90.96%</td> <td>100.81%</td> <td>103.60%</td> </tr> </table>				Resistance value	Short	10K	20K	30K	40K	50K	60K	70K	80K	90K	100K	OPEN	Output current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%	Dimming value	Short	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN	Output current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%	Duty value	Short	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN	Output current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%	1	Resistance value	SHORT	10K	20K	30K	40K	50K	60K	70K	80K	90K	100K	OPEN	Output current	0.000A	0.154A	0.286A	0.418A	0.550A	0.681A	0.812A	0.946A	1.074A	1.205A	1.328A	1.409A	%	0.00%	11.32%	21.03%	30.74%	40.44%	50.07%	59.71%	69.56%	78.97%	88.60%	97.65%	103.60%	2	Dimming value	SHORT	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN	Output current	0.000A	0.162A	0.299A	0.433A	0.567A	0.694A	0.826A	0.969A	1.095A	1.231A	1.369A	1.409A	%	0.00%	11.91%	21.99%	31.84%	41.69%	51.03%	60.74%	71.25%	80.51%	90.51%	100.66%	103.60%	3	Duty value	SHORT	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN	Output current	0.000A	0.171A	0.301A	0.435A	0.568A	0.702A	0.836A	0.970A	1.103A	1.237A	1.371A	1.409A	%	0.00%	12.57%	22.13%	31.99%	41.76%	51.62%	61.47%	71.32%	81.10%	90.96%	100.81%	103.60%
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13	CONSTANT CURRENT REGION	28.8V ~ 48V	I/P : 347 VAC O/P : FULL LOAD Ta : 25°C	O/P=28.8V :1.435 A O/P=47 V: 1.436 A																																																																																																																																																																																																						

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	180VAC~528 VAC	I/P : TESTING O/P : FULL LOAD Ta : 25°C	160V~480V
			I/P : LOW-LINE-3V=177V HIGH-LINE+3V=531 V O/P : FULL/MIN LOAD ON : 30 Sec . OFF : 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST : OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P : 180VAC ~ 528 VAC O/P : FULL-MIN LOAD Ta : 25°C	TEST : OK
3	POWER FACTOR	0.98 / 230 VAC(TYP)	I/P : 230VAC	PF= 0.9963 / 230 VAC
		0.97 / 277VAC(TYP)	I/P : 277VAC	PF= 0.9923 / 277 VAC
		0.97 /347 VAC(TYP)	I/P : 347VAC	PF= 0.979 / 347VAC
		0.93 / 480 VAC(TYP)	I/P : 480VAC O/P : FULL LOAD Ta : 25°C	PF= 0.97 / 480VAC
4	EFFICIENCY	90 % (TYP)	I/P : 347 VAC O/P : FULL LOAD Ta : 25°C	90.79 %
5	INPUT CURRENT	347V/ 0.22 A (TYP)	I/P : 347 VAC	I = 0.21 A/ 347 VAC
		480V/ 0.18 A (TYP)	I/P : 480 VAC O/P : FULL LOAD Ta : 25°C	I = 0.155 A/ 480 VAC
6	INRUSH CURRENT	480V/ 25 A (TYP) (twidth=420us measured at 50% Ipeak) COLD START	I/P : 480VAC O/P : FULL LOAD Ta : 25°C	I = 20 A/ 480VAC T50= 400 us
7	LEAKAGE CURRENT	< 0.75 mA / 480 VAC	I/P : 480 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.24 mA N-FG : 0.26 mA
8	TOTAL HARMONIC DISTORTION	Total harmonic distortion will be lower than 20% when output loading is 60% or higher at 230VAC / 277VAC / 347VAC	I/P : 230VAC I/P : 277VAC I/P : 347VAC O/P : 60% LOAD Ta : 25°C	THD : 14.49 % THD : 15.13 % THD : 12.59 %
		Total harmonic distortion will be lower than 20% when output loading is 75% or higher at 480VAC	I/P : 480VAC O/P : 75% LOAD Ta : 25°C	THD : 10.6 %

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT	95% - 108%	I/P : 480 VAC I/P : 347 VAC O/P : TESTING Ta : 25°C	102.57%/ 480 VAC 102.51%/ 347 VAC Constant current limiting, recovers automatically after fault condition is removed
2	OVER VOLTAGE PROTECTION	CH1 : 54V - 60 V	I/P : 480 VAC I/P : 347 VAC O/P : MIN LOAD Ta : 25°C	56.71V/ 480VAC 56.85V/ 347 VAC Shut down o/p voltage with auto-recovery or re-power on to recovery
3	OVER TEMPERATURE PROTECTION	SPEC : NO DAMAGE	I/P : 347 VAC O/P : FULL LOAD	O.T.P. Active Shut down o/p voltage, recovers automatically after temperature goes down
4	SHORT PROTECTION	NO DAMAGE	I/P : 528VAC O/P : FULL LOAD Ta : 25°C	NO DAMAGE Constant current limiting, recovers automatically after fault condition is removed

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q3 Rated : 9A/950V	I/P : High-Line +3V = 531 V O/P : (1)Full Load Turn on (2) Output Short (3)Full load continue Ta : 25°C	(1) 786 V (2) 762 V (3) 521 V
2	Diode Peak Voltage	D101 Rated : 10A/200V	I/P : High-Line +3V = 531 V O/P : (1)Full Load Turn on (2)Output Short (3)Full load continue Ta : 25°C	(1) 153 V (2) 145 V (3) 143 V
3	Input Capacitor Voltage	C5 Rated : 22u/450V	I/P : High-Line +3V = 531 V O/P : (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta : 25°C	(1) 403 V (2) 403 V (3) 391 V
4	Control IC Voltage Test	U1 Rated : 10.3V-22.5V U2 Rated : 11V-28V	I/P : High-Line +3V = 531 V O/P : (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Ta : 25°C	(1) 18.8 V (2) 18.8 V (3) 18.8 V (4) 16 V (5) 16 V (6) 16 V

5	Power Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated : 9A/950V	I/P : High-Line +3V = 531 V O/P : (1) Full Load Turn on (2) Output Short (3) Full load continue Ta : 25°C	(1) 846 V (2) 862 V (3) 822 V
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■ SAFETY & E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P : 3.75 KVAC/min I/P-FG : 2 KVAC/min O/P-FG : 1.5 KVAC/min	I/P-O/P : 4 KVAC/min I/P-FG : 2.4 KVAC/min O/P-FG : 1.8/KVAC/min Ta : 25°C	I/P-O/P : 3.38 mA I/P-FG : 2.9 mA O/P-FG : 2.08 mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P : 500VDC>100MΩ I/P-FG : 500VDC>100MΩ O/P-FG : 500VDC>100MΩ	I/P-O/P : 500 VDC I/P-FG : 500 VDC O/P-FG : 500 VDC Ta : 25°C/70%RH	I/P-O/P : 15.3 GΩ I/P-FG : 17.3 GΩ O/P-FG : 9.84 GΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta : 25°C / 70%RH	24 mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS C	I/P:230VAC/380VAC/50HZ/60HZ O/P:100/60%ELECTRONIC LOAD O/P:100%LED LOAD Ta:25°C	PASS
2	CONDUCTION	EN55015 CLASS B FCC Part 15 Subpart B	I/P: 230VAC/380VAC/50HZ/60HZ O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab
3	RADIATION	EN55015 CLASS B FCC Part 15 Subpart B	I/P: 230VAC/380VAC/50HZ/60HZ O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 LIGHT INDUSTRY AIR:8KV / Contact:4KV	I/P: 230VAC/380VAC/50HZ/60HZ O/P:FULL LOAD Ta:25°C	CRITERIA A
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT : 1KV	I/P: 230VAC/380VAC/50HZ/60HZ O/P:FULL LOAD Ta:25°C	CRITERIA A
6	SURGE	IEC61000-4-5 INDUSTRY L-N :2KV L,N-PE:4KV	I/P: 230VAC/380VAC/50HZ/60HZ O/P:FULL LOAD Ta:25°C	CRITERIA A
7	Test by certified Lab & Test Report Prepare. Any contradictions of the test results, please refer to the latest EMC test report.			

■ RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																
1	TEMPERATURE RISE TEST	MODEL : HVG-65-24 1. ROOM AMBIENT BURN-IN : 4.5 HRS I/P : 347VAC O/P : FULL LOAD Ta=33.2 °C 2. HIGH AMBIENT BURN-IN : 1 HRS I/P : 347VAC O/P : FULL LOAD Ta=65.5 °C	<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 33.2 °C</th> <th>HIGH AMBIENT Ta= 65.5 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>BD1</td><td>52.5°C</td><td>82.2°C</td></tr> <tr><td>2</td><td>L2</td><td>55.3°C</td><td>84.7°C</td></tr> <tr><td>3</td><td>Q1</td><td>57.8°C</td><td>86.9°C</td></tr> <tr><td>4</td><td>U1</td><td>55.3°C</td><td>85.1°C</td></tr> <tr><td>5</td><td>Q3</td><td>60.1°C</td><td>88.9°C</td></tr> <tr><td>6</td><td>C5</td><td>56.6°C</td><td>85.4°C</td></tr> <tr><td>7</td><td>RTH2</td><td>54.1°C</td><td>83.5°C</td></tr> <tr><td>8</td><td>T1</td><td>65.0°C</td><td>93.4°C</td></tr> <tr><td>9</td><td>C62</td><td>56.7°C</td><td>85.6°C</td></tr> <tr><td>10</td><td>C46</td><td>51.7°C</td><td>81.8°C</td></tr> <tr><td>11</td><td>D101</td><td>65.5°C</td><td>95.1°C</td></tr> <tr><td>12</td><td>C102</td><td>60.3°C</td><td>89.5°C</td></tr> <tr><td>13</td><td>C203</td><td>58.9°C</td><td>87.8°C</td></tr> <tr><td>14</td><td>LF100</td><td>55.1°C</td><td>84.7°C</td></tr> <tr><td>15</td><td>C104</td><td>55.7°C</td><td>85.3°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 33.2 °C	HIGH AMBIENT Ta= 65.5 °C	1	BD1	52.5°C	82.2°C	2	L2	55.3°C	84.7°C	3	Q1	57.8°C	86.9°C	4	U1	55.3°C	85.1°C	5	Q3	60.1°C	88.9°C	6	C5	56.6°C	85.4°C	7	RTH2	54.1°C	83.5°C	8	T1	65.0°C	93.4°C	9	C62	56.7°C	85.6°C	10	C46	51.7°C	81.8°C	11	D101	65.5°C	95.1°C	12	C102	60.3°C	89.5°C	13	C203	58.9°C	87.8°C	14	LF100	55.1°C	84.7°C	15	C104	55.7°C	85.3°C	
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2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 528VAC/180VAC O/P : 100 % LOAD Ta= -40 °C	TEST : OK																																																																
3	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60°C NO DAMAGE	I/P : 528 VAC O/P : FULL LOAD Ta= 60 °C HUMIDITY= 95 %R.H	TEST : OK																																																																
4	TEMPERATURE COEFFICIENT	± 0.03%(0-60°C)	I/P : 347 VAC O/P : FULL LOAD	± 0.011 %(0-60°C)																																																																
5	STORAGE TEMPERATURE TEST	1. Thermal shock Temperature : -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 5 CYCLE 5. Input/Output condition : STATIC		OK																																																																
6	THERMAL SHOCK TEST	1. Thermal shock Temperature : -45°C~ +65°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10 CYCLE 5. Input/Output condition : 347VAC/Full Load AC ON/OFF TEST turn on 58sec ; turn off 2sec		OK																																																																

7	VIBRATION TEST	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10-500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 5G (5) Test Time : 72min in each axis (X.Y.Z) (6) Ta : 25°C	TEST : OK
8	CAPACITOR LIFE CYCLE	SUPPOSE C102 IS THE MOST CRITICAL COMPONENT (1) I/P : 347VAC O/P : FULL LOAD Tc=75 °C LIFE TIME (2) I/P : 347VAC O/P : 75% LOAD Tc= 75 °C LIFE TIME (3) I/P : 347VAC O/P : 50% LOAD Tc=75 °C LIFE TIME	(1) 56870 HRS (2) 63621 HRS (3) 76129 HRS
9	MTBF	Conducted by Parts Stress Analysis Prediction 612.6K hrs min. Telcordia SR-332 (Bellcore) ; 208K hrs min. MIL-HDBK-217F (25°C)	
10	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 62,000 hours	

RESULT	TESTER	REVIEW	APPROVAL
PASS	DANIEL GAO	SANFORD SU	VINCENT TSENG

12.10.30 A50-F031