



Test Report: HBG-240-36

240W 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

DESIGN VERIFY TEST

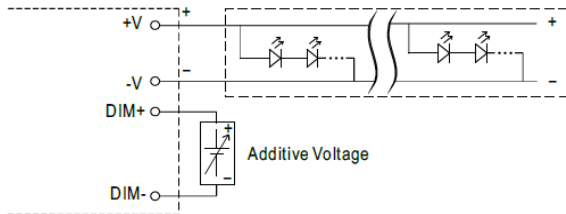
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	CONSTANT CURRENT REGION	21.6 V~ 36 V	I/P: 230VAC O/P: LED MODE Ta: 25°C	21.6V~ 36 V
2	OUTPUT CURRENT ADJUST RANGE (For A-Type)	4A~6.7A	I/P: 230VAC O/P: SETTING Ta: 25°C	3.724A~6.575A
3	OUTPUT VOLTAGE TOLERANCE	-2%~+2%	I/P: 90VAC / 305VAC O/P: FULL/ NO LOAD Ta: 25°C	-0.120%~ 0.100%
4	LINE REGULATION	-0.5%~+0.5%	I/P: 90VAC ~ 305VAC O/P: 80% ~ FULL LOAD Ta: 25°C	-0.120%~ 0.100 %
5	LOAD REGULATION	-0.5%~+0.5%	I/P: 230VAC O/P: FULL/ NO LOAD Ta: 25°C	-0%~ 0.025%
6	OVER/UNDERSHOOT TEST	<±5 %	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	<5 %
7	RIPPLE & NOISE (Max)	250mVp-p	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	40 mVp-p
8	SET UP TIME(Max)	230VAC/ 500ms 115VAC/ 2500ms	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta: 25°C	230VAC/ 444 ms 115VAC/ 1623 ms
9	RISE TIME (Max)	230VAC/ 120ms 115VAC/ 120ms	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta: 25°C	230VAC/ 39.11ms 115VAC/ 39.05 ms
10	HOLD UP TIME(Typ)	230VAC/ 15ms 115VAC/ 15ms	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta: 25°C	230VAC/ 33.53 ms 115VAC/ 32.51 ms
11	DYNAMIC LOAD	V1: 3600 mVp-p	I/P: 230VAC O/P: (1) FULL/50% LOAD 50%DUTY / 120HZ (2) FULL /50% LOAD 50%DUTY / 1KHZ Ta: 25°C	(1) 1940mVp-p (2) 1930mVp-p

12 DIMMING OPERATION (for B-Type)

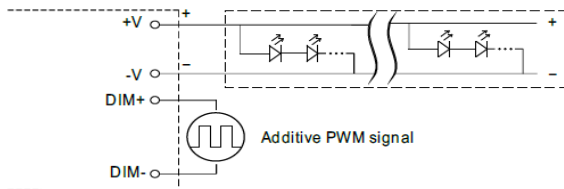
- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-:
 - 1 ~ 10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100 μ A (typ.)

⊙ Applying additive 1 ~ 10VDC



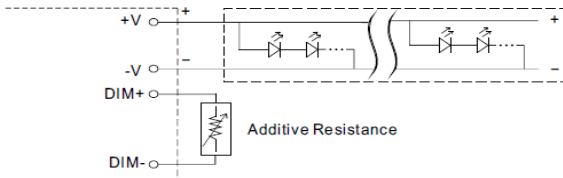
"DO NOT connect "DIM- to -V"

⊙ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



"DO NOT connect "DIM- to -V"

⊙ Applying additive resistance:



"DO NOT connect "DIM- to -V"

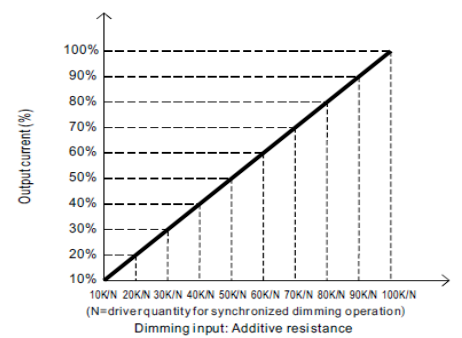
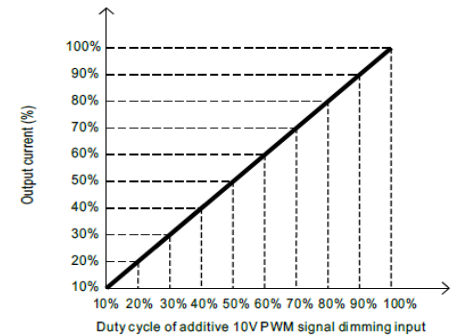
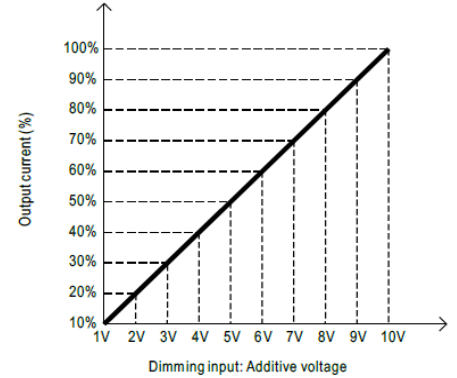
I/P: 230 VAC

O/P: DIMMING TEST

Ta: 25°C

	DIMMING	Short	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V
1	Output Current	0	0.564A	1.310A	1.988A	2.704A	3.423A	4.118A	4.772A	5.417A	6.123A	6.645A
	%	0%	8.42%	19.55%	29.67%	40.36%	51.09%	61.46%	71.22%	80.85%	91.39%	99.18%
	PWM(100Hz)	0V	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
2	Output Current	0	0.592A	1.276A	1.980A	2.672A	3.359A	4.027A	4.676A	5.353A	5.978A	6.577A
	%	0%	8.84%	19.04%	29.55%	39.88%	50.13%	60.10%	69.79%	79.90%	89.22%	98.16%
	R	0%	10K	20K	30K	40K	50K	60K	70K	80K	90K	100K
3	Output Current	0	0.529A	1.223A	1.927A	2.627A	3.312A	3.961A	4.665A	5.318A	5.938A	6.540A
	%	0%	7.90%	18.25%	28.76%	39.21%	49.43%	59.12%	69.63%	79.37%	88.63%	97.61%

TEST RESULT: OK



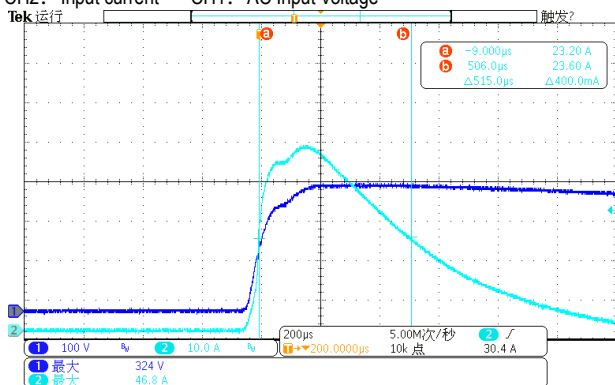
13	DALI DIMMING OPERATION (primary side; for DA-Type)	<p>※DALI Interface ·Apply DALI signal between DA+ and DA-. ·DALI protocol comprises 16 groups and 64 addresses. ·First step is fixed at 8% of output.</p> <p>I/P: 230 VAC O/P: DIMMING TEST Ta: 25°C TEST RESULT: OK</p>
----	---	--

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~305VAC	I/P: TESTING O/P: 80% ~FULL LOAD Ta: 25°C	87 V~ 305 V
			(1)I/P: LOW-LINE-3V=87 V HIGH-LINE+10V=315 V O/P: 80% ~FULL LOAD ON: 30 Sec OFF: 30 Sec 10MIN (2)230VAC ON: 0.5 Sec OFF: 0.5 Sec 20MIN (POWER ON/OFF NO DAMAGE)	TEST: OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 90 VAC ~305 VAC O/P: FULL ~NO LOAD Ta: 25°C	TEST: OK
3	AC CURRENT	2.5A/115VAC 1.3A/230VAC 1.2A/277VAC	I/P: 115 VAC I/P: 230 VAC I/P: 277 VAC O/P: FULL LOAD Ta: 25°C	I = 2.31 A/ 115VAC I = 1.14 A/ 230VAC I = 0.99 A/ 277VAC
4	LEAKAGE CURRENT	< 0.75mA / 277VAC	I/P: 277 VAC O/P: NO LOAD Ta: 25°C	L-FG: 0.371 mA N-FG: 0.378 mA
5	INRUSH CURRENT(Typ)	230V/ 75A Twidth =680us measured at 50% Ipeak COLD START	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	I = 46.8 A/ 230VAC Twidth =515 us

INPUT=230VAC/50HZ @ FULL LOAD

CH2: Input current CH1: AC Input Voltage



6	EFFICIENCY(Typ)	92.5%	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	93.25%																																												
<p>EFFICIENCY vs LOAD</p> <table border="1"> <caption>Efficiency vs Load Data</caption> <thead> <tr> <th>LOAD (%)</th> <th>277V (%)</th> <th>230V (%)</th> <th>115V (%)</th> </tr> </thead> <tbody> <tr><td>10%</td><td>81.5</td><td>80.5</td><td>79.5</td></tr> <tr><td>20%</td><td>83.5</td><td>82.5</td><td>81.5</td></tr> <tr><td>30%</td><td>85.5</td><td>84.5</td><td>83.5</td></tr> <tr><td>40%</td><td>87.5</td><td>86.5</td><td>85.5</td></tr> <tr><td>50%</td><td>89.0</td><td>88.0</td><td>87.0</td></tr> <tr><td>60%</td><td>90.0</td><td>89.0</td><td>88.5</td></tr> <tr><td>70%</td><td>90.5</td><td>90.0</td><td>89.0</td></tr> <tr><td>80%</td><td>91.0</td><td>90.5</td><td>89.5</td></tr> <tr><td>90%</td><td>91.5</td><td>91.0</td><td>90.0</td></tr> <tr><td>100%</td><td>92.0</td><td>91.5</td><td>90.5</td></tr> </tbody> </table>					LOAD (%)	277V (%)	230V (%)	115V (%)	10%	81.5	80.5	79.5	20%	83.5	82.5	81.5	30%	85.5	84.5	83.5	40%	87.5	86.5	85.5	50%	89.0	88.0	87.0	60%	90.0	89.0	88.5	70%	90.5	90.0	89.0	80%	91.0	90.5	89.5	90%	91.5	91.0	90.0	100%	92.0	91.5	90.5
LOAD (%)	277V (%)	230V (%)	115V (%)																																													
10%	81.5	80.5	79.5																																													
20%	83.5	82.5	81.5																																													
30%	85.5	84.5	83.5																																													
40%	87.5	86.5	85.5																																													
50%	89.0	88.0	87.0																																													
60%	90.0	89.0	88.5																																													
70%	90.5	90.0	89.0																																													
80%	91.0	90.5	89.5																																													
90%	91.5	91.0	90.0																																													
100%	92.0	91.5	90.5																																													
7	POWER FACTOR	0.98/ 115VAC 0.95/ 230VAC 0.93/ 277VAC	I/P: 115 VAC I/P: 230 VAC I/P: 277 VAC O/P: FULL LOAD Ta: 25°C	PF= 0.997 / 115VAC PF= 0.973 / 230VAC PF= 0.942 / 277VAC																																												
<p>P.F vs LOAD</p> <table border="1"> <caption>P.F vs Load Data</caption> <thead> <tr> <th>LOAD (%)</th> <th>277V</th> <th>230V</th> </tr> </thead> <tbody> <tr><td>50%</td><td>0.85</td><td>0.93</td></tr> <tr><td>60%</td><td>0.88</td><td>0.95</td></tr> <tr><td>70%</td><td>0.91</td><td>0.96</td></tr> <tr><td>80%</td><td>0.92</td><td>0.97</td></tr> <tr><td>90%</td><td>0.93</td><td>0.975</td></tr> <tr><td>100%</td><td>0.94</td><td>0.98</td></tr> </tbody> </table>					LOAD (%)	277V	230V	50%	0.85	0.93	60%	0.88	0.95	70%	0.91	0.96	80%	0.92	0.97	90%	0.93	0.975	100%	0.94	0.98																							
LOAD (%)	277V	230V																																														
50%	0.85	0.93																																														
60%	0.88	0.95																																														
70%	0.91	0.96																																														
80%	0.92	0.97																																														
90%	0.93	0.975																																														
100%	0.94	0.98																																														
8	TOTAL HARMONIC DISTORTION	THD < 20% (@load ≥ 60% / 115VAC, 230VAC; @load ≥ 80% / 277VAC)	I/P: 115 VAC / 60% LOAD I/P: 230 VAC / 60% LOAD I/P: 277 VAC / 80% LOAD Ta: 25°C	THD=5.44% @60% load / 115VAC THD=11.67% @60% load / 230VAC THD=11.94% @80% load / 277VAC																																												
<p>THD vs LOAD</p> <table border="1"> <caption>THD vs Load Data</caption> <thead> <tr> <th>LOAD (%)</th> <th>277V (%)</th> <th>230V (%)</th> </tr> </thead> <tbody> <tr><td>50%</td><td>23</td><td>18</td></tr> <tr><td>60%</td><td>19</td><td>16</td></tr> <tr><td>70%</td><td>16</td><td>15</td></tr> <tr><td>80%</td><td>15</td><td>14</td></tr> <tr><td>90%</td><td>13</td><td>13</td></tr> <tr><td>100%</td><td>12</td><td>12</td></tr> </tbody> </table>					LOAD (%)	277V (%)	230V (%)	50%	23	18	60%	19	16	70%	16	15	80%	15	14	90%	13	13	100%	12	12																							
LOAD (%)	277V (%)	230V (%)																																														
50%	23	18																																														
60%	19	16																																														
70%	16	15																																														
80%	15	14																																														
90%	13	13																																														
100%	12	12																																														

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	95%~108%	I/P: 90VAC I/P: 230VAC I/P: 305VAC O/P: TESTING Ta: 25°C	100.49 %/ 90VAC 100.52 %/ 230VAC 100.67 %/ 305VAC Constant Current Limiting, recovers automatically after fault condition is removed
2	OVER VOLTAGE PROTECTION	43V~52V	I/P: 90VAC I/P: 230VAC I/P: 305VAC O/P: NO LOAD Ta: 25°C	47.4 V/ 90VAC 47.4 V/ 230VAC 47.4V/ 305VAC Shut down and latch off o/p voltage ,re-power on to removed
3	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 230VAC O/P: FULL LOAD	O.T.P. Active Shut down o/p voltage, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 305VAC O/P: FULL LOAD Ta: 25°C	NO DAMAGE Hiccup mode, recovers automatically after fault condition is removed

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Power Transistor	Q3 Rated 600V/20A	I/P: High-Line +3V =308V O/P: (1) FULL LOAD Turn on (2) Output Short (3) FULL LOAD continue Ta: 25°C	(1) 470 V (2) 456 V (3) 454 V
2	O/P Diode (MOSFET)	Q101 Rated 150 V/ 43A	I/P: High-Line +3V =308V O/P: (1) FULL LOAD Turn on (2) Output Short (3) FULL LOAD continue Ta: 25°C	(1)127 V (2)45.2 V (3)100 V
3	Input Capacitor	C5 Rated 150u/450V	I/P: High-Line +3V =308 V O/P: (1) FULL LOAD input on/off (2) NO LOAD input on /Off (3) FULL LOAD /NO LOAD Change Ta: 25°C	(1) 448 V (2) 440 V (3) 442 V
4	Control IC	U70 Rated 16V (MAX.)	I/P: High-Line +3V =308 V O/P: (1) FULL LOAD (2) NO LOAD input on /Off (3) FULL LOAD /NO LOAD Change Ta: 25°C	(1) 15.4 V (2) 15.4 V (3) 15.2 V
5	PFC Power Transistor	Q 1 Rated 600V/20.2A	I/P: High-Line +3V =308V O/P: (1) FULL LOAD Turn on (2) Output Short (3) FULL LOAD continue Ta: 25°C	(1) 546 V (2) 512 V (3) 510 V

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 3.75KVAC/min I/P-FG: 2.0KVAC/min O/P-FG: 0.5KVAC/min	I/P-O/P: 4.125KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG: 0.6 KVAC/min Ta: 25°C	I/P-O/P: 3.087 mA I/P-FG: 3.412 mA O/P-FG: 1.863 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	I/P-O/P: >9999 MΩ I/P-FG: >9999 MΩ O/P-FG: >9999 MΩ
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 50 mΩ EN 60950-1	40 A / 2min Ta: 25°C /70% RH	19 MΩ

E.M.C TEST

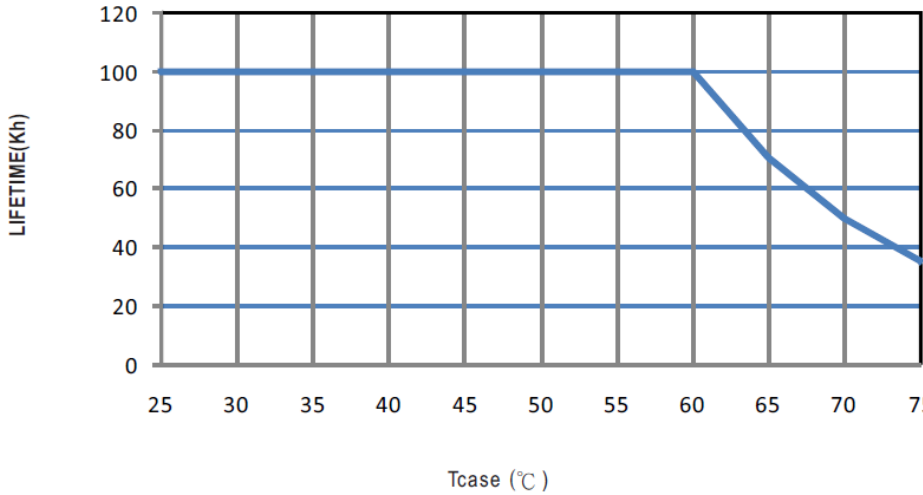
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 Class C	I/P: 230VAC/50HZ O/P: FULL/75% LOAD Ta: 25°C	PASS
2	CONDUCTION	EN55015	I/P: 230 VAC (50HZ) O/P: FULL LOAD Ta: 25°C	PASS Test by certified Lab
3	RADIATION	EN55015	I/P: 230 VAC (50HZ) O/P: FULL LOAD Ta: 25°C	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 LIGHT INDUSTRY AIR: 8KV Contact: 4KV	I/P: 230 VAC/50HZ O/P: FULL LOAD Ta: 25°C	PASS
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 230VAC/50HZ O/P: FULL LOAD Ta: 25°C	PASS
6	SURGE	EN61000-4-5 INDUSTRY L-N: 2KV L,N-PE: 4KV	I/P: 230VAC/50HZ O/P: FULL LOAD Ta: 25°C	PASS
7	Test by certified Lab & Test Report Prepare			

RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																
1	TEMPERATURE RISE TEST	MODEL: HBG-240-24 1. ROOM AMBIENT BURN-IN: 2 HRS I/P: 230VAC O/P: 95% LOAD Ta=24.6 °C 2. HIGH AMBIENT BURN-IN: 2 HRS I/P: 230VAC O/P: 95% LOAD Ta=58.6 °C																																																																		
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta=24.6 °C</th> <th>HIGH AMBIENT Ta=58.6 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>RTH1</td><td>73.4°C</td><td>96.0°C</td></tr> <tr><td>2</td><td>BD1</td><td>57.3°C</td><td>86.5°C</td></tr> <tr><td>3</td><td>C5</td><td>55.5°C</td><td>84.1°C</td></tr> <tr><td>4</td><td>L1</td><td>54.6°C</td><td>83.4°C</td></tr> <tr><td>5</td><td>Q1</td><td>56.4°C</td><td>85.9°C</td></tr> <tr><td>6</td><td>D2</td><td>56.6°C</td><td>85.9°C</td></tr> <tr><td>7</td><td>U1</td><td>51.6°C</td><td>80.9°C</td></tr> <tr><td>8</td><td>C39</td><td>51.0°C</td><td>80.3°C</td></tr> <tr><td>9</td><td>Q3</td><td>57.2°C</td><td>86.6°C</td></tr> <tr><td>10</td><td>Q4</td><td>58.4°C</td><td>87.7°C</td></tr> <tr><td>11</td><td>T1</td><td>68.8°C</td><td>96.0°C</td></tr> <tr><td>12</td><td>Q101</td><td>62.4°C</td><td>93.5°C</td></tr> <tr><td>13</td><td>C103</td><td>56.7°C</td><td>86.9°C</td></tr> <tr><td>14</td><td>TSW1</td><td>53.8°C</td><td>82.9°C</td></tr> <tr><td>15</td><td>TC</td><td>44.5°C</td><td>74.2°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta=24.6 °C	HIGH AMBIENT Ta=58.6 °C	1	RTH1	73.4°C	96.0°C	2	BD1	57.3°C	86.5°C	3	C5	55.5°C	84.1°C	4	L1	54.6°C	83.4°C	5	Q1	56.4°C	85.9°C	6	D2	56.6°C	85.9°C	7	U1	51.6°C	80.9°C	8	C39	51.0°C	80.3°C	9	Q3	57.2°C	86.6°C	10	Q4	58.4°C	87.7°C	11	T1	68.8°C	96.0°C	12	Q101	62.4°C	93.5°C	13	C103	56.7°C	86.9°C	14	TSW1	53.8°C	82.9°C	15	TC	44.5°C	74.2°C
NO	Position	ROOM AMBIENT Ta=24.6 °C	HIGH AMBIENT Ta=58.6 °C																																																																	
1	RTH1	73.4°C	96.0°C																																																																	
2	BD1	57.3°C	86.5°C																																																																	
3	C5	55.5°C	84.1°C																																																																	
4	L1	54.6°C	83.4°C																																																																	
5	Q1	56.4°C	85.9°C																																																																	
6	D2	56.6°C	85.9°C																																																																	
7	U1	51.6°C	80.9°C																																																																	
8	C39	51.0°C	80.3°C																																																																	
9	Q3	57.2°C	86.6°C																																																																	
10	Q4	58.4°C	87.7°C																																																																	
11	T1	68.8°C	96.0°C																																																																	
12	Q101	62.4°C	93.5°C																																																																	
13	C103	56.7°C	86.9°C																																																																	
14	TSW1	53.8°C	82.9°C																																																																	
15	TC	44.5°C	74.2°C																																																																	
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 305VAC/100VAC O/P: FULL LOAD Ta= -45°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: 305VAC O/P: FULL LOAD Ta=60°C HUMIDITY= 95 %R.H	TEST: OK																																																																
4	TEMPERATURE COEFFICIENT	±0.03 %/°C (0~50°C)	I/P: 230 VAC O/P: FULL LOAD	±0.004 %/°C (0~50°C)																																																																
5	STORAGE TEMPERATURE TEST	1. Thermal shock Temperature: -45°C~ +85°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		TEST: 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: 230VAC/95% LOAD AC ON/OFF TEST AC on 3 sec/AC off 1 sec TEST		TEST: 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: 180min in each axis (X.Y.Z) (6) Ta: 25°C	TEST: OK																								
8	CAPACITOR LIFE CYCLE	HBG-240-24: SUPPOSE C102 IS THE MOST CRITICAL COMPONENT (1) I/P: 230VAC O/P: FULL LOAD Ta= 25 °C LIFE TIME (2) I/P: 230VAC O/P: FULL LOAD Ta= 60 °C LIFE TIME (3) I/P: 230VAC O/P: 75% LOAD Ta= 60 °C LIFE TIME (4) I/P: 230VAC O/P: 50% LOAD Ta= 60 °C LIFE TIME	(1) 409516 HRS (2) 46167 HRS (3) 83344 HRS (4) 106254 HRS																								
9	MTBF	Conducted by Parts Stress Analysis Prediction 1792.9K hrs min. Telcordia SR-332 (Bellcore) ; 172.4K hrs min. MIL-HDBK-217F (25°C)																									
10	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure(Expected Life) : 50,000 hours @ Tcase 70°C  <table border="1" data-bbox="494 918 1420 1411"> <caption>Approximate data points from the Lifetime vs Tcase graph</caption> <thead> <tr> <th>Tcase (°C)</th> <th>Lifetime (Kh)</th> </tr> </thead> <tbody> <tr><td>25</td><td>100</td></tr> <tr><td>30</td><td>100</td></tr> <tr><td>35</td><td>100</td></tr> <tr><td>40</td><td>100</td></tr> <tr><td>45</td><td>100</td></tr> <tr><td>50</td><td>100</td></tr> <tr><td>55</td><td>100</td></tr> <tr><td>60</td><td>100</td></tr> <tr><td>65</td><td>70</td></tr> <tr><td>70</td><td>45</td></tr> <tr><td>75</td><td>35</td></tr> </tbody> </table>		Tcase (°C)	Lifetime (Kh)	25	100	30	100	35	100	40	100	45	100	50	100	55	100	60	100	65	70	70	45	75	35
Tcase (°C)	Lifetime (Kh)																										
25	100																										
30	100																										
35	100																										
40	100																										
45	100																										
50	100																										
55	100																										
60	100																										
65	70																										
70	45																										
75	35																										

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	SHENJW/ZHUOKB	SKY	LIUWY