

MODEL : CLG-100-24

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	RIPPLE & NOISE	V1 : 150 mVp-p (Max)	I/P : 230VAC O/P : 95% LOAD Ta : 25°C	V1 : 22 mVp-p (Max)
2	OUTPUT CURRENT ADJUST RANGE	CH1 : 4.12A~3A	I/P : 230 VAC I/P : 115 VAC Ta : 25°C	2.85 A~ 4.28 A/ 230 VAC 2.83 A~ 4.28 A/ 115 VAC
3	OUTPUT VOLTAGE TOLERANCE	V1 : 5%~ -5% (Max)	I/P : 100 VAC / 295 VAC O/P : 95% LOAD / MIN LOAD Ta : 25°C	V1 : 1.5%~ -1.5%
4	LINE REGULATION	V1 : 1%~ -1% (Max)	I/P : 100VAC ~ 295 VAC O/P : 95% LOAD Ta : 25°C	V1 : 0.08%~ -0.08%
5	LOAD REGULATION	V1 : 2%~ -2% (Max)	I/P : 230 VAC O/P : 95% LOAD ~MIN LOAD Ta : 25°C	V1 : 0.05%~ -0.05%
6	SET UP TIME	230VAC : 500 ms (Max) 115 VAC : 1200 ms (Max)	I/P : 230 VAC I/P : 115 VAC O/P : 95% LOAD Ta : 25°C	230VAC/ 364 ms 115VAC/ 694 ms
7	RISE TIME	230VAC : 80 ms (Max) 115VAC : 80 ms (Max)	I/P : 230 VAC I/P : 115 VAC O/P : 95% LOAD Ta : 25°C	230VAC/ 13 ms 115VAC/ 14 ms
8	HOLD UP TIME	230VAC : 60 ms (TYP) 115VAC : 30 ms (TYP)	I/P : 230 VAC I/P : 115 VAC O/P : 95% LOAD Ta : 25°C	230VAC/ 90 ms 115VAC/ 35 ms
9	OVER/UNDERSHOOT TEST	< ±5%	I/P : 230 VAC O/P : 95% LOAD Ta : 25°C	TEST : <5%
10	DYNAMIC LOAD	V1 : 2400 mVp-p	I/P : 230 VAC O/P : 95% LOAD /Min LOAD 90%DUTY/1KHZ Ta : 25°C	686 mVp-p

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~295 VAC	I/P : TESTING O/P : 95% LOAD Ta : 25°C	52 V~295V
			I/P : LOW-LINE-3V= 87V HIGH-LINE+15%=300 V O/P : 95% LOAD /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 : 90 VAC ~ 295 VAC O/P : 95% LOAD ~MIN LOAD Ta : 25°C	TEST : OK
3	POWER FACTOR	0.95 / 230 VAC(TYP) 0.98 / 115 VAC(TYP) 0.92 / 277 VAC(TYP)	I/P : 230 VAC I/P : 115 VAC I/P : 277 VAC O/P : 95% LOAD Ta : 25°C	PF= 0.976 / 230 VAC PF= 0.987 / 115 VAC PF= 0.93 / 277 VAC
4	EFFICIENCY	88.5% (TYP)	I/P : 230 VAC O/P : 95% LOAD Ta : 25°C	90.1 %
5	INPUT CURRENT	230V/ 0.55 A (TYP) 115V/ 1.1 A (TYP)	I/P : 230 VAC I/P : 115 VAC O/P : 95% LOAD Ta : 25°C	I = 0.48 A/ 230 VAC I = 0.91 A/ 115 VAC
6	INRUSH CURRENT	230V/ 40 A (TYP) COLD START	I/P : 230 VAC O/P : 95% LOAD Ta : 25°C	I = 37 A/ 230 VAC
7	LEAKAGE CURRENT	< 0.75 mA / 240 VAC	I/P : 254 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.2 mA N-FG : 0.2 mA

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	95%~ 102 %	I/P : 230 VAC I/P : 115 VAC O/P : TESTING Ta : 25°C	99 %/ 230 VAC 98.5 %/ 115 VAC Constant Current Limiting
2	OVER VOLTAGE PROTECTION	CH1 : 27 V~ 34 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	30.6 V/ 230 VAC 30.6 V/ 115 VAC Shunt down Re- power ON
3	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P : 230 VAC O/P : 95% LOAD	O.T.P. Active Shunt down Re-power ON
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P : 264 VAC O/P : 95% LOAD Ta : 25°C	NO DAMAGE Hiccup Mode or Constant Current Limiting

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																												
1	TEMPERATURE RISE TEST	MODEL : CLG-100-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : 95% LOAD Ta= 29.3 °C 2. HIGH AMBIENT BURN-IN : 3.5 HRS I/P : 230VAC O/P : 95% LOAD Ta= 49.5 °C																																																																														
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 29.3 °C</th> <th>HIGH AMBIENT Ta= 49.5 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>LF3</td><td>52.8°C</td><td>70.0°C</td></tr> <tr><td>2</td><td>BD1</td><td>54.9°C</td><td>71.8°C</td></tr> <tr><td>3</td><td>L2 COIL</td><td>54.9°C</td><td>71.6°C</td></tr> <tr><td>4</td><td>C11</td><td>54.7°C</td><td>71.8°C</td></tr> <tr><td>5</td><td>L1 COIL</td><td>54.7°C</td><td>71.8°C</td></tr> <tr><td>6</td><td>D1</td><td>58.4°C</td><td>75.3°C</td></tr> <tr><td>7</td><td>Q2</td><td>58.2°C</td><td>75.2°C</td></tr> <tr><td>8</td><td>C5</td><td>57.2°C</td><td>74.3°C</td></tr> <tr><td>9</td><td>Q1</td><td>67.0°C</td><td>83.0°C</td></tr> <tr><td>10</td><td>D2</td><td>67.4°C</td><td>84.4°C</td></tr> <tr><td>11</td><td>T1 COIL</td><td>65.3°C</td><td>81.9°C</td></tr> <tr><td>12</td><td>C105</td><td>58.9°C</td><td>76.1°C</td></tr> <tr><td>13</td><td>Q100</td><td>57.4°C</td><td>74.9°C</td></tr> <tr><td>14</td><td>C42</td><td>54.2°C</td><td>70.9°C</td></tr> <tr><td>15</td><td>U1</td><td>55.4°C</td><td>72.4°C</td></tr> <tr><td>16</td><td>U2</td><td>54.1°C</td><td>73.0°C</td></tr> <tr><td>17</td><td>RTH2</td><td>55.3°C</td><td>72.1°C</td></tr> <tr><td>18</td><td>CASE</td><td>44.3°C</td><td>61.7°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 29.3 °C	HIGH AMBIENT Ta= 49.5 °C	1	LF3	52.8°C	70.0°C	2	BD1	54.9°C	71.8°C	3	L2 COIL	54.9°C	71.6°C	4	C11	54.7°C	71.8°C	5	L1 COIL	54.7°C	71.8°C	6	D1	58.4°C	75.3°C	7	Q2	58.2°C	75.2°C	8	C5	57.2°C	74.3°C	9	Q1	67.0°C	83.0°C	10	D2	67.4°C	84.4°C	11	T1 COIL	65.3°C	81.9°C	12	C105	58.9°C	76.1°C	13	Q100	57.4°C	74.9°C	14	C42	54.2°C	70.9°C	15	U1	55.4°C	72.4°C	16	U2	54.1°C	73.0°C	17	RTH2	55.3°C	72.1°C	18	CASE	44.3°C	61.7°C
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 100 % LOAD Ta : 25°C	TEST : OK																																																																												
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 230 VAC O/P : 95 % LOAD Ta= -30 °C	TEST : OK																																																																												
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50°C NO DAMAGE	I/P : 295 VAC O/P : 95% LOAD Ta= 50°C HUMIDITY= 95 %R.H	TEST : OK																																																																												
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50°C)	I/P : 230 VAC O/P : 95% LOAD	± 0.01 %(0-50°C)																																																																												
6	VIBRATION TEST	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Time : 72min (4) Acceleration : 5G (5) Test Time : 1 hour in each axis (X.Y.Z) (6) Ta : 25°C		TEST : OK																																																																												

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P : 3.75 KVAC/min I/P-FG : 2KVAC/min O/P-FG : 1.5 KVAC/min	I/P-O/P : 4.2 KVAC/min I/P-FG : 2.4 KVAC/min O/P-FG : 1.8KVAC/min Ta : 25°C	I/P-O/P : 5.84 mA I/P-FG 4.89 mA O/P-FG 2.566 mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P : 500VDC>100MΩ	I/P-O/P : 500 VDC Ta : 25°C	I/P-O/P : 30 GΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta : 25°C	20 mΩ
4	APPROVAL	TUV : Certificate NO : R50091288 / R50113492 UL : File NO : E307078		

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS A CLASS C	I/P : 230 VAC/50HZ O/P : 100% LOAD Ta : 25°C	PASS
2	CONDUCTION	EN55022 EN55015 CLASS B	I/P : 230 VAC (50HZ) O/P : 95% LOAD /50% LOAD Ta : 25°C	PASS Test by certified Lab
3	RADIATION	EN55022 EN55015 CLASS B	I/P : 230 VAC (50HZ) O/P : 95% 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 : 95% LOAD Ta : 25°C	CRITERIA A
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT : 1KV	I/P : 230 VAC/50HZ O/P : 95% LOAD Ta : 25°C	CRITERIA A
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N : 2KV L,N-PE : 4KV	I/P : 230 VAC/50HZ O/P : 95% LOAD Ta : 25°C	CRITERIA A

M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	CAPACITOR LIFE CYCLE	CLG-100-24:SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P : 230VAC O/P : 95% LOAD Ta= 25 °C LIFE TIME= 361900 HRS I/P : 230VAC O/P : 95% LOAD Ta= 50 °C LIFE TIME= 78760 HRS		
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE : 301K HRS		
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure(Expected Life) : 30,000 hours @ Tcase 65°C; 50,000 hours @ Tcase 55°C		



COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated 650V 11A	I/P : High-Line +3V = 298 V O/P : (1) 95% LOAD Turn on (2) Output Short Ta : 25°C	(1) 564 V (2) 500 V
2	Diode Peak Voltage	Q100 Rated 43A 150V	I/P : High-Line +3V = 298 V O/P : (1) 95% LOAD Turn on (2) Output Short Ta : 25°C	(1) 120 V (2) 103 V
3	Clamp Diode Peak Voltage	D2 Rated 1KV 1A	I/P : High-Line +3V = 298 V O/P : (1) Dynamic Load 90%Duty/1KHz Ta : 25°C	(1) 510 V
4	Input Capacitor Voltage	C5 Rated 150 u / 400V/ 105°C	I/P : High-Line +3V = 298 V O/P : (1) 95% LOAD Turn on /Off (2) Min load Turn on /Off (3) 95% /Min load Change Ta : 25°C	(1) 384 V (2) 384 V (3) 384 V
5	Control IC Voltage Test	U2 Rated TEA1552 : 20V	I/P : High-Line +3V = 298 V O/P : (1) 95% LOAD Turn on /Off (2) Min load Turn on /Off (3) 95% /Min load Change Ta : 25°C	(1) 17.8 V (2) 17.8 V (3) 17.8 V

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2006/6/6	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2006/7/26	PRODUCT SAMPLE W0606C45	PASS	VINCENT TSENG	MAX LIN
2006/8/25	PRODUCT SAMPLE W0608B30	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023