

MODEL : LPV-35-24

## OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1:150 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 21 mVp-p (Max)	P
2	OUTPUT VOLTAGE TOLERANCE	V1:5 %~ -5 % (Max)	I/P: 100VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.2 %~ -0.2 %	P
3	LINE REGULATION	V1: 1 %~ -1 % (Max)	I/P: 100 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0.05 %~ -0.05 %	P
4	LOAD REGULATION	V1: 2%~ -2% (Max)	I/P: 230 VAC O/P:FULL -MIN LOAD Ta:25°C	V1: 0.2 %~ -0.2 %	P
5	SET UP TIME	230VAC: 500 ms (Max) 115 VAC: 500 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 162 ms 115VAC/ 122 ms	P
6	RISE TIME	230VAC: 20 ms (Max) 115VAC: 20 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 16 ms 115VAC/ 15 ms	P
7	HOLD UP TIME	230VAC: 50 ms (TYP) 115VAC: 16 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 123 ms 115VAC/ 27 ms	P
8	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: <5 %	P
9	DYNAMIC LOAD	V1: 2400 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	156 mVp-p	P

## INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	57 V~264V	P
			I/P: LOW-LINE-3V= 87 V HIGH-LINE+15%=300 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 OSC	I/P:100VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	85 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	86 %	P
4	INPUT CURRENT	230V/ 0.7 A (TYP) 115V/ 1.1 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.37 A/ 230 VAC I = 0.64 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 55 A (TYP) 115V/ 30 A (TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 51 A/ 230 VAC I = 26 A/ 115 VAC	P
6	LEAKAGE CURRENT	< 0.25 mA / 240 VAC	I/P: 264 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.01 mA N-FG 0.01 mA :	P

## PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110%~ 150 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	134 %/ 230 VAC 130 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 27.6V~ 32.4V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	30.62 V/ 230 VAC 30.62 V/ 115 VAC Shut down Re- power ON	P
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P:FULL LOAD Ta:25°C	NO DAMAGE Hiccup Mode	P

## ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : LPV-35-24 1. ROOM AMBIENT BURN-IN : 2.5 HRS I/P: 230VAC O/P: FULL LOAD Ta= 28.4 °C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230VAC O/P: FULL LOAD Ta= 67.2 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P:125 % LOAD Ta:32.9°C	TEST : OK	P
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P: 100 % LOAD Ta= -35 °C	TEST : OK	P
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 65°C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 65 °C HUMIDITY= 95 %R.H	TEST : OK	P
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.005 %(0-50°C)	P
6	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency:10-500Hz (3) Sweep Time:10min/sweep cycle (4) Acceleration:2G (5) Test Time:1 hour in each axis (X.Y.Z) (6) Ta:25°C		TEST : OK	P

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 3 KVAC/min	I/P-O/P: 3.6 KVAC/min	I/P-O/P: 1.971 mA  NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P: 500 VDC  Ta:25°C / 70%RH	I/P-O/P: 19.3 GΩ  NO DAMAGE	P
3	APPROVAL	TUV: Certificate NO : UL: File NO :			N

### E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A CLASS C	I/P: 230/240/220 VAC/50HZ O/P:100/75/50/25% LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ)/115V(60HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) /115(60HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab	P
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	CRITERIA A	P
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N :1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
7	Test by certified Lab & Test Report Prepare				

### M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	LPV-35-24 : SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta=25 °C LIFE TIME=158798 HRS I/P: 230VAC O/P:FULL LOAD Ta=65 °C LIFE TIME=13343 HRS I/P: 230VAC O/P:75% LOAD Ta=65 °C LIFE TIME=19559 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 743.5 KHRS			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure(Expected Life) : 20,000 hours @ Tcase 80°C ; 50,000 hours @ Tcase 65°C			P



COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	Q1 Rated STF6NM60N :600 V/ 4.6A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C	(1) 576 V (2) 582 V	P
2	Diode <b>Peak Voltage</b>	D100Rated FMX-12SL 10A/200V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C	(1) 190 V (2) 178 V	P
3	Clamp Diode <b>Peak Voltage</b>	D1 Rated EGP20J : 2A/600V	I/P:High-Line +3V = 267 V O/P: (1) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 506 V	P
4	<b>Input Capacitor Voltage</b>	C5 Rated 120u/400V 105°C KMG	I/P:High-Line +3V = 267 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) 370 V (2) 377 V (3) 377 V	P
5	<b>Control IC Voltage Test</b>	U1 NCP1230/ 18V	I/P:High-Line +3V = 267 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) 11.2 V (2) 9.24 V (3) 11.2 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2008/5/5	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2008/9/4	PRODUCT SAMPLE W0806C09	PASS	SANFORD SU	VINCENT TSENG
2008/9/16	PRODUCT SAMPLE W0808D12	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023