

MODEL : LPH-18-36

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 200 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 48 mVp-p (Max)	PASS
2	OUTPUT VOLTAGE TOLERANCE	V1: -3 %~ +3 % (Max)	I/P: 190VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: -0.024 %~ +0.024 %	PASS
3	LINE REGULATION	V1: -1 %~ +1 % (Max)	I/P: 190 VAC ~ 264VAC O/P:FULL LOAD Ta:25°C	V1: -0.017%~+0.017 %	PASS
4	LOAD REGULATION	V1: -2 %~ +2 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0% ~ 0%	PASS
5	SET UP TIME	230VAC/ 1500 ms (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 851.7 ms	PASS
6	RISE TIME	230VAC/ 30 ms (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 16.5 ms	PASS
7	HOLD UP TIME	230VAC/ 50 ms (Typ)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 63.5 ms	PASS
8	OVER/UNDERSHOOT TEST	<±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: < 5 %	PASS
9	DYNAMIC LOAD	V1: 3600 mVp-p	I/P: 230 VAC O/P: (1)FULL /Min LOAD 90%DUTY/1KHZ (2)FULL /Min LOAD 50%DUTY/120HZ Ta:25°C	(1) 176 mVp-p (2) 260 mVp-p	PASS

## INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	180 VAC~ 264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	120 V~ 264 V	PASS
			I/P: LOW-LINE-3V= 177 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: 180 VAC ~264 VAC O/P:FULL-MIN LOAD Ta:25°C	TEST:  OK	PASS
3	EFFICIENCY	83 % (Typ)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	84.92 %	PASS
4	INPUT CURRENT	230 V/ 0.3 A (Typ)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I = 0.14 A/ 230VAC	PASS
5	INRUSH CURRENT	230 V/ 50 A (max) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I = 43.6 A/ 230VAC	PASS

## PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	>105% RATED OUTPUT POWER	I/P: 264 VAC I/P: 230 VAC I/P: 190 VAC O/P:TESTING Ta:25°C	146 %/264VAC 140 %/ 230VAC 132 %/190 VAC  Hiccup Mode	PASS
2	OVER VOLTAGE PROTECTION	CH1: 41.4 V~ 48.6 V	I/P: 230 VAC O/P:MIN LOAD Ta:25°C	44.36 V/ 230VAC  Shut off o/p voltage, clamping by zener diode	PASS
3	OVER TEMPERATURE PROTECTION	SPEC: Tj 170°C O.T.P. NO DAMAGE	I/P: 230 VAC O/P:FULL LOAD	O.T.P. Active Hiccup Mode , recovers automatically after temperature goes down	PASS
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE Hiccup Mode	PASS

## ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : LPH-18-36 1. ROOM AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 28.8 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 53.4 °C			PASS
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 120 % LOAD Ta:25°C	TEST : OK	PASS
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P: 100 % LOAD Ta= -30 °C	TEST : OK	PASS
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK	PASS
5	TEMPERATURE COEFFICIENT	± 0.03 %(0~50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.001 %(0~50°C)	PASS
6	VIBRATION TEST	1 Carton & 1 Set Operating at I/P: VAC NO LOAD (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	PASS

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

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	LPH-18-36 SUPPOSE C 106 I/P: 230 VAC O/P:FULL LOAD I/P: 230 VAC O/P:FULL LOAD	IS THE MOST CRITICAL COMPONENT Ta= 25 °C LIFE TIME= 378088.8 HRS Ta 50 °C LIFE TIME= 82302.6 HRS		PASS
2	MTBF	Conducted by Parts Stress Analysis Prediction 7827.3K hrs min. Telcordia SR-332 (Bellcore); 1311.1K hrs min. MIL-HDBK-217F (25°C)			PASS

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 3.0 KVAC/min	I/P-O/P: 3.6 KVAC/min Ta:25°C	I/P-O/P: 0.834 mA NO DAMAGE	PASS
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P: 500 VDC Ta:25°C	I/P-O/P: >9999 MΩ NO DAMAGE	PASS
4	LEAKAGE CURRENT	< 0.25 mA / 240VAC	I/P: 264 VAC O/P:NO LOAD Ta:25°C	L-FG: 0.084 mA N-FG: 0.083 mA	PASS

### E.M.C TEST

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



COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	U1 Rated VIPER22A : 730 V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load 50% Load/ Min. Load 90%Duty/1KHz Ta:25°C	(1) 502 V (2) 486 V (3) 498 V (4) 492 V	PASS
2	Diode Peak Voltage	D 100 Rated UF3004 : 400 V 3 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load 50% Load/ Min. Load 90%Duty/1KHz Ta:25°C	(1) 164 V (2) 120 V (3) 166 V (4) 169 V	PASS
3	Clamp Diode Peak Voltage	D1 Rated GP20A : 800 V 2 A	I/P:High-Line +3V = 267 V O/P: (1)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (2)Dynamic Load 50% Load/ Min. Load 90%Duty/1KHz Ta:25°C	(1) 552 V (2) 556 V	PASS
4	Input Capacitor Voltage	C 5 Rated CAPXON : 27 u / 400 V 105 °C/KM Series	I/P:High-Line +3V =267 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Burn-IN 0.5 Hour Ta:25°C	(1) 312 V (2) 318 V (3) 320 V	PASS
5	Control IC Voltage Test	U 1 Rated VIPER22A : 50 V	I/P:High-Line +3V =267 V O/P:(1) Output Short (2)O.L.P Ta:25°C	(1) 14.3 V (2) 14.3 V	PASS

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DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2008/2/29	RD SAMPLE	PASS	SKY	LIUWY
2008/4/29	PRODUCT SAMPLE (W0804C313)	PASS	SKY	LIUWY
2008/7/11	PRODUCT SAMPLE (W0805D013)	PASS	SKY	LIUWY