

MODEL : APC-16-350

## OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 300 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 41.2 mVp-p (Max)	PASS
2	OUTPUT VOLTAGE TOLERANCE	V1: -5%~ +5% (Max)	I/P: 100VAC / 264 VAC O/P:FULL/ 0% LOAD Ta:25°C	V1: -0.1%~ 0.1%	PASS
3	LINE REGULATION	V1: -1%~ +1% (Max)	I/P: 100 VAC ~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0%~ 0.03%	PASS
4	LOAD REGULATION	V1: -3%~ +3% (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.1%~ 0.1%	PASS
5	SET UP TIME	230VAC/ 3000 ms (Max) 115VAC/ 3000 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 986.372 ms 115 VAC/ 1895.782ms	PASS
6	RISE TIME	230VAC/ 200 ms (Max) 115VAC/ 200 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 82.323 ms 115 VAC/ 73.836ms	PASS
7	HOLD TIME	230VAC/ 20 ms (Typ) 115VAC/ 12 ms (Typ)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 85.413 ms 115 VAC/ 20.402 ms	PASS
8	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: ±0.83%	PASS

## INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90 VAC~ 264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	90 V~ 264 V	PASS
			(1)I/P: LOW-LINE-3V= 87 V HIGH-LINE+15%= 300 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (2) I/P:230VAC ON: 0.5 Sec . OFF: 0.5 Sec 20MIN ( AC POWER ON/OFF NO DAMAGE )	TEST: (1) OK (2) OK	

2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE OSC	I/P: 90 VAC ~264 VAC O/P: FULL-MIN LOAD Ta:25°C	TEST: OK	PASS
3	EFFICIENCY	84 % (Typ)	I/P: 230 VAC O/P: FULL LOAD Ta:25°C	87.034 %	PASS
4	INPUT CURRENT	230 V/ 0.3 A (Typ) 115 V/ 0.5 A (Typ)	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta:25°C	I=0.2034A/ 230VAC I=0.3102A/ 115VAC	PASS
5	INRUSH CURRENT	230 V/ 45 A Twidth =210 us measured at 50% Ipeak COLD START	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I=36.539 A Twidth = 105 us	PASS

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER VOLTAGE PROTECTION	CH1: 50.4 V~ 60 V	I/P: 264 VAC I/P: 230 VAC I/P: 90 VAC O/P: MIN LOAD Ta:25°C	53.65 V/ 264VAC 53.65 V/ 230VAC 53.65 V/ 90VAC Shut off O/P voltage, clamping by zener diode	PASS
2	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE Constant Current Limiting	PASS

### ENVIRONMENT TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : APC-16-350 1. ROOM AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 29.5 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 46.8 °C			PASS

2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 264 VAC/100 VAC O/P: 100% LOAD Ta= -30 °C	TEST : OK	PASS
3	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 40 °C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 40 °C HUMIDITY= 95 %R.H	TEST : OK	PASS
4	TEMPERATURE COEFFICIENT	± 0.2 %(0~50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.092 %(0~50°C)	PASS
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	PASS
6.	THERMAL SHOCK TEST	1. Thermal shock Temperature : -35 °C~ +45 °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/Full Load 58SEC ON/2SEC OFF		TEST : OK	PASS
7	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	PASS
8	CAPACITOR LIFE CYCLE	APC-16-350: SUPPOSE C15 IS THE MOST CRITICAL COMPONENT (1) I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 129686 HRS (2) I/P: 230 VAC O/P:FULL LOAD Ta= 40 °C LIFE TIME= 53375 HRS			PASS
9	MTBF	Conducted by Parts Stress Analysis Prediction 6411.4K hrs min. Telcordia SR-332 (Bellcore); 1092.9K hrs min. MIL-HDBK-217F (25°C)			PASS
10	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure(Expected Life) : 20,000 hours @ Tcase 70°C , 50,000 hours @ Tcase 55°C			PASS

### SAFETY TEST

1	WITHSTAND VOLTAGE	I/P-O/P: 3.75 KVAC/min EN 60950	I/P-O/P: 4.2 KVAC/min Ta:25°C	I/P-O/P: 1.575 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
3	LEAKAGE CURRENT	< 0.25 mA / 240VAC EN 60950	I/P: 264 VAC O/P:NO LOAD Ta:25°C	L-FG: 2.2 uA N-FG: 2.2 uA	PASS

### E.M.C TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 220V/230V/240V AC 50HZ O/P:100%/75%/50%/25% LOAD Ta:25°C	PASS	PASS
2	CONDUCTION	EN55015	I/P:230 VAC (50HZ) /115V(60HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	PASS

3	RADIATION	EN55015	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	EN61000-4-5 LIGHT INDUSTRY L-N :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	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	U1 Rated SD4843 : 650 V 11 A	I/P:High-Line +3V =267 V O/P: (1)Full Load input on/off (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (4)Dynamic Load 50% Load/ Min. Load 50%Duty/120Hz  I/P:Low-Line -3V = 87 V O/P: (1)Full Load input on/off (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (4)Dynamic Load 50% Load/ Min. Load 50%Duty/120Hz  Ta:25°C	(1)596V/2.08A (2)480V/1.78A (3)526V/900mA (4)544V/1.08A  (1)352V/1.17A (2)200V/690mA (3)312V/920mA (4)340V/1.13A	PASS
2	Diode <b>Peak Voltage</b>	D10 Rated HER306 : 600 V 3 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load input on/off (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (4)Dynamic Load 50% Load/ Min. Load 50%Duty/120Hz  I/P:Low-Line -3V = 87 V O/P: (1)Full Load input on/off (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (4)Dynamic Load 50% Load/ Min. Load 50%Duty/120Hz  Ta:25°C	(1) 410V (2) 340V (3) 386V (4) 390V  (1) 46.6V (2) 51.4V (3) 38V (4) 37.2V	PASS



# 16W Single Output Switching Power Supply

# APC-16 series

3	Input Capacitor Voltage	C 5 Rated CAPXON : 15 u / 400 V 105°C / KM Series	I/P:High-Line +3V =267 V O/P: (1)Full Load input on/off (2)Min load input on /off (3)Burn-IN 1Hour  Ta:25°C	(1) 392 V (2) 360 V (3) 360 V	PASS
4	Control IC Voltage Test	U 1 Rated SD4843 : 21 V	I/P:High-Line +3V = 267 V O/P:(1).Output Short (2).O.L.P (3).O.V.P. (4).NO LOAD LOW LINE  Ta:25°C	(1) 16.3V (2) 16.3V (3) 16.3V (4) 12.6V	PASS

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DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2011/3/8	RD SAMPLE	PASS	SKY	HOWAY
2011/6/10	PRODUCT SAMPLE (W1106A181)	PASS	SKY	HOWAY
2011/7/29	PRODUCT SAMPLE (W1107G161)	PASS	SKY	HOWAY