

MODEL : APC-12-700

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 250 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 53 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: -0.42%~ 0.14 %	PASS
3	LINE REGULATION	V1: -1 %~ +1 % (Max)	I/P: 100 VAC ~ 264VAC O/P:FULL LOAD Ta:25°C	V1: -0.03 %~ 0.03 %	PASS
4	LOAD REGULATION	V1: -3 %~ +3 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0%~ 0.03 %	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/ 763.916 ms 115 VAC/ 408.383 ms	PASS
6	RISE TIME	230VAC/ 180 ms (Max) 115VAC/ 150 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 81.499 ms 115 VAC/ 38.018 ms	PASS
7	HOLD TIME	230VAC/ 20 ms (Typ) 115VAC/ 15 ms (Typ)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 93.277 ms 115 VAC/ 16.828 ms	PASS
8	OVER/UNDERSHOOT TEST	< ±5 %	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: ± 1.10%	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



# 12W Single Output Switching Power Supply

# APC-12 series

3	EFFICIENCY	80 % (Typ)	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	83.68 %	PASS
4	INPUT CURRENT	230 V/ 0.2 A (Typ) 115 V/ 0.35 A (Typ)	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta: 25°C	I = 0.1635A/ 230VAC I = 0.2311A/ 115VAC	PASS
5	INRUSH CURRENT	230 V/ 70 A Twidth = 120 us measured at 50% Ipeak COLD START	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I = 54.039 A Twidth = 102 us	PASS

## PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER VOLTAGE PROTECTION	CH1: 20.7 V~ 24.3 V	I/P: 264 VAC I/P: 230 VAC I/P: 90 VAC O/P: MIN LOAD Ta: 25°C	22.108 V/264VAC 22.108 V/230VAC 22.108 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-12-700 1. ROOM AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 32.3 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 45.1 °C			PASS																																																																						
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>P/N</th> <th>ROOM AMBIENT Ta= 32.3 °C</th> <th>HIGH AMBIENT Ta= 45.1 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>BD1</td><td>KBP208G</td><td>53.7°C</td><td>67.1°C</td></tr> <tr><td>2</td><td>L1</td><td>DRGZ001D</td><td>56.6°C</td><td>69.6°C</td></tr> <tr><td>3</td><td>C5</td><td>12uF/400V KM</td><td>51.8°C</td><td>65.0°C</td></tr> <tr><td>4</td><td>C6</td><td>12uF/400V KM</td><td>67.4°C</td><td>79.7°C</td></tr> <tr><td>5</td><td>D1</td><td>1N4007</td><td>77.1°C</td><td>88.8°C</td></tr> <tr><td>6</td><td>U1</td><td>SD4843</td><td>74.1°C</td><td>86.6°C</td></tr> <tr><td>7</td><td>C9</td><td>10uF/50V YXF</td><td>65.7°C</td><td>78.0°C</td></tr> <tr><td>8</td><td>T1</td><td>TF6319</td><td>82.6°C</td><td>94.9°C</td></tr> <tr><td>9</td><td>C2</td><td>22uF/50V KY</td><td>66.3°C</td><td>79.1°C</td></tr> <tr><td>10</td><td>D10</td><td>HER303</td><td>93.2°C</td><td>104.5°C</td></tr> <tr><td>11</td><td>C15</td><td>220uF/25V KY</td><td>67.2°C</td><td>79.3°C</td></tr> <tr><td>12</td><td>C16</td><td>100uF/35V GL</td><td>58.4°C</td><td>70.7°C</td></tr> <tr><td>13</td><td>C17</td><td>47uF/50V GL</td><td>71.5°C</td><td>83.4°C</td></tr> </tbody> </table>	NO	Position	P/N	ROOM AMBIENT Ta= 32.3 °C	HIGH AMBIENT Ta= 45.1 °C	1	BD1	KBP208G	53.7°C	67.1°C	2	L1	DRGZ001D	56.6°C	69.6°C	3	C5	12uF/400V KM	51.8°C	65.0°C	4	C6	12uF/400V KM	67.4°C	79.7°C	5	D1	1N4007	77.1°C	88.8°C	6	U1	SD4843	74.1°C	86.6°C	7	C9	10uF/50V YXF	65.7°C	78.0°C	8	T1	TF6319	82.6°C	94.9°C	9	C2	22uF/50V KY	66.3°C	79.1°C	10	D10	HER303	93.2°C	104.5°C	11	C15	220uF/25V KY	67.2°C	79.3°C	12	C16	100uF/35V GL	58.4°C	70.7°C	13	C17	47uF/50V GL	71.5°C	83.4°C	
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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 45 °C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 45 °C HUMIDITY= 95 %R.H	TEST : OK	PASS
4	TEMPERATURE COEFFICIENT	± 0.2 % (0~50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.069 % (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 ~ +50 °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-12-700: SUPPOSE C15 IS THE MOST CRITICAL COMPONENT (1) I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 190395 HRS (2) I/P: 230 VAC O/P:FULL LOAD Ta= 45 °C LIFE TIME= 49981 HRS			PASS
9	MTBF	Conducted by Parts Stress Analysis Prediction 6418.1K hrs min. Telcordia SR-332 (Bellcore); 1097.4K 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: 1.753 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) 544V/1.26 A (2) 426V/880mA (3) 500V/408mA (4) 546V/820mA  (1) 280V/608mA (2) 170V/416mA (3) 244V/380mA (4) 304V/808mA	PASS
2	Diode <b>Peak Voltage</b>	D10 Rated HER303 : 200 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) 105V (2) 103V (3) 107V (4) 108V  (1) 42.2V (2) 51.8V (3) 37.4V (4) 39.2V	PASS



# 12W Single Output Switching Power Supply

# APC-12 series

3	Input Capacitor Voltage	C 5 Rated CAPXON : 12 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) 398 V (2) 394 V (3) 388 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) 16.7V (2) 16.6V (3) 16.7V (4) 12.6V	PASS

2007/11/26 A50-G058

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2010/11/9	RD SAMPLE	PASS	SKY	HOWAY
2011/6/10	PRODUCT SAMPLE (W1106A172)	PASS	SKY	HOWAY
2011/7/28	PRODUCT SAMPLE (W1107G152)	PASS	SKY	HOWAY