

MODEL : APC-12E-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 : 45 mVp-p (Max)	PASS
2	OUTPUT VOLTAGE TOLERANCE	V1 : -5%~ +5% (Max)	I/P : 180VAC / 264 VAC O/P : FULL/ NO LOAD Ta : 25°C	V1: -0.05%~ 0.3 %	PASS
3	LINE REGULATION	V1 : -1%~ +1% (Max)	I/P : 190 VAC ~ 264VAC O/P : FULL LOAD Ta : 25°C	V1: -0.01%~ 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%~ 0.3 %	PASS
5	SET UP TIME	230VAC/ 500 ms (Max)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230 VAC/ 400 ms	PASS
6	RISE TIME	230VAC/ 180 ms (Max)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230 VAC/ 137.648 ms	PASS
7	HOLD TIME	230VAC/ 20 ms (Typ)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230 VAC/ 82.954 ms	PASS
8	OVER/UNDERSHOOT TEST	< ±5 %	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	TEST : ±1.66%	PASS
9	CURRENT ACCURACY	±8%	I/P : 180V~264VAC O/P : FULL ~MIN LOAD	-5.16%~1.84%	PASS
10	OPERATING VOLTAGE RANGE	9V~ 36V	I/P : 230VAC O/P : LED MODE Ta : 25°C	9V~36V	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	177 V~ 264 V	PASS
			(1) I/P : LOW-LINE-3V= 177 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 : 180 VAC ~264 VAC O/P : FULL-MIN LOAD Ta : 25°C	TEST : OK	PASS
3	NO LOAD POWER CONSUMPTION	<0.5 W	I/P : 230VAC O/P : NO LOAD	0.41 W	PASS
4	EFFICIENCY	81 % (Typ)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	82.68 %	PASS
5	POWER FACTOR	>0.5/ 230VAC	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	PF= 0.5402	PASS
6	INPUT CURRENT	230 V/ 0.2 A (Typ)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I=0.1474A	PASS
7	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=53.945 A Twidth = 102 us	PASS
8	LEAKAGE CURRENT	< 0.25 mA/ 240VAC	I/P : 240 VAC O/P : NO LOAD Ta : 25°C	L-FG : 2.2 uA N-FG : 2.2 uA	PASS

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER VOLTAGE PROTECTION	CH1 : 39.6 V~ 46.8 V	I/P : 264 VAC I/P : 230 VAC I/P : 180 VAC O/P : NO LOAD Ta : 25°C	42.864 V/264VAC 42.864 V/ 230VAC 42.864 V/ 180VAC 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

COMPONENT STRESS TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	U1 Rated 650 V/11 A	I/P : High-Line +3V =267 V O/P : (1)Full Load input on/off (2)Output Short (3) Full load continue Ta : 25°C	(1) 512V (2) 460V (3) 478V	PASS
2	Diode Peak Voltage	D10 Rated 600 V/3 A	I/P : High-Line +3V = 267 V O/P : (1)Full Load input on/off (2)Output Short (3) Full load continue Ta : 25°C	(1) 237V (2) 203V (3) 234V	PASS

3	Input Capacitor Voltage	C 5 Rated 12 u /400 V	I/P : High-Line +3V =267 V O/P : (1)Full Load input on/off (2)Min load input on /off Ta : 25°C	(1) 398 V (2) 390 V	PASS
4	Control IC Voltage Test	U 1 Rated 21 V	I/P : High-Line +3V = 267 V O/P : (1)Full Load input on/off (2)Min load input on /off Ta : 25°C	(1) 16.2V (2) 16.2V	PASS

SAFETY TEST

1	WITHSTAND VOLTAGE	I/P-O/P : 3.75 KVAC/min	I/P-O/P : 4.2 KVAC/min Ta : 25°C	I/P-O/P : 1.883 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

E.M.C TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	PASS	PASS
2	CONDUCTION	EN55015	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab	PASS
3	RADIATION	EN55015	I/P : 230 VAC/50HZ 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 : 230VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A	PASS
6	SURGE	EN61000-4-5 INDUSTRY L-N : 2KV	I/P : 230VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A	PASS
7	Test by certified Lab & Test Report Prepare				

ENVIRONMENT TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT																																																								
1	TEMPERATURE RISE TEST	MODEL : APC-12E-350 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	<table border="1"> <thead> <tr> <th>NO</th> <th>Position</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>56.5°C</td><td>70.5°C</td></tr> <tr><td>2</td><td>L1</td><td>59.1°C</td><td>73.0°C</td></tr> <tr><td>3</td><td>C5</td><td>53.6°C</td><td>67.4°C</td></tr> <tr><td>4</td><td>C6</td><td>71.9°C</td><td>85.3°C</td></tr> <tr><td>5</td><td>D1</td><td>81.5°C</td><td>94.5°C</td></tr> <tr><td>6</td><td>U1</td><td>84.4°C</td><td>97.8°C</td></tr> <tr><td>7</td><td>C9</td><td>73.4°C</td><td>86.3°C</td></tr> <tr><td>8</td><td>T1</td><td>72.2°C</td><td>84.8°C</td></tr> <tr><td>9</td><td>C2</td><td>80.8°C</td><td>93.7°C</td></tr> <tr><td>10</td><td>D10</td><td>83.8°C</td><td>95.5°C</td></tr> <tr><td>11</td><td>C15</td><td>62.8°C</td><td>75.3°C</td></tr> <tr><td>12</td><td>C16</td><td>56.3°C</td><td>68.9°C</td></tr> <tr><td>13</td><td>C17</td><td>71.1°C</td><td>83.6°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 32.3 °C	HIGH AMBIENT Ta= 45.1 °C	1	BD1	56.5°C	70.5°C	2	L1	59.1°C	73.0°C	3	C5	53.6°C	67.4°C	4	C6	71.9°C	85.3°C	5	D1	81.5°C	94.5°C	6	U1	84.4°C	97.8°C	7	C9	73.4°C	86.3°C	8	T1	72.2°C	84.8°C	9	C2	80.8°C	93.7°C	10	D10	83.8°C	95.5°C	11	C15	62.8°C	75.3°C	12	C16	56.3°C	68.9°C	13	C17	71.1°C	83.6°C		PASS
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2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 264 VAC/190 VAC O/P : FULL LOAD Ta= -35 °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	± 0.075 % (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 58 SEC ON/2 SEC 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 : 60 min in each axis (X.Y.Z) (6) Ta : 25°C		TEST : OK	PASS																																																								
8	CAPACITOR LIFE CYCLE	APC-12E-350; SUPPOSE C15 IS THE MOST CRITICAL COMPONENT (1) I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 187624 HRS (2) I/P: 230 VAC O/P:FULL LOAD Ta= 45 °C LIFE TIME= 47892 HRS			PASS																																																								
9	MTBF	Conducted by Parts Stress Analysis Prediction 6112.3K hrs min. Telcordia SR-332 (Bellcore); 1013.6K 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			PASS																																																								



TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	ZHANGZJ/ZHUOKB	SKY	LIUWY