



Test Report: PSC-35AC

35W Single Output With Battery Charger (UPS Function)

■ DESIGN VERIFY TEST

Output Function Test
Input Function Test
Protection Function Test
Control Function Test
Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test
E.M.C. Tes

■ RELIABILITY TEST

ENVIRONMENT TEST

DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1 : 120 mVp-p (Max)	I/P : 230VAC O/P : FULL LOAD Ta : 25°C	V1 : 30.0 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1 : 12 V ~ 15V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	11.56 V~ 15.52 V/ 230 VAC 11.56 V~ 15.52 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1 : 1%~ -1 % (Max)	I/P : 90 VAC / 264 VAC O/P : FULL/ MIN LOAD Ta : 25°C	V1 : -0.18 %~ 0.13 %	P
4	LINE REGULATION	V1 : 0.5 %~ -0.5 % (Max)	I/P : 90VAC ~ 264 VAC O/P : FULL LOAD Ta : 25°C	V1 : 0 %~ 0 %	P
5	LOAD REGULATION	V1 : 0.5 %~ -0.5 % (Max)	I/P : 230 VAC O/P : FULL ~MIN LOAD Ta : 25°C	V1 : -0.18 %~ 0.13 %	P
6	SET UP TIME	230VAC : 800 ms (Max) 115VAC : 1600 ms(Max)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 203.931 ms 115VAC/ 241.064 ms	P
7	RISE TIME	230VAC : 50 ms (Max) 115VAC : 50 ms (Max)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 3.518 ms 115VAC/ 4.120 ms	P
8	HOLD UP TIME	230VAC : 50 ms (TYP) 115VAC : 10 ms (TYP)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 77.525 ms 115VAC/ 15.976 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	TEST : <5 %	P
10	DYNAMIC LOAD	V1 : 1380 mVp-p	I/P : 230 VAC (1).O/P : FULL /Min LOAD 90%DUTY/ 1KHZ (2).O/P : FULL /Min LOAD 90%DUTY/ 3KHZ (3).O/P : FULL /Min LOAD 90%DUTY/ 5KHZ (4).O/P : FULL /Min LOAD 50%DUTY/ 120HZ Ta : 25°C	(1) 342 mVp-p (2) 186 mVp-p (3) 150 mVp-p (4) 808 mVp-p	P



35W Single Output With Battery Charger (UPS Function) PSC-35series

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 I/P : (1)LOW-LINE-3V=87 V HIGH-LINE+15%=300 V O/P:FULL/MIN LOAD ON: 30 Sec OFF: 30 Sec 10MIN (2)230Vac ON: 0.5 Sec OFF: 0.5 Sec 20MIN (3)230Vac ON:3Sec OFF:3Sec 12HOURS (POWER ON/OFF NO DAMAGE)	67.043 V~264V TEST : (1) OK (2)OK (3)OK	P
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P : 90 VAC ~ 264 VAC O/P : FULL~MIN LOAD Ta : 25°C	TEST : OK	P
3	EFFICIENCY	84 % (TYP)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	86.3 %	P
4	INPUT CURRENT	230V/ 0.5 A (TYP) 115V/ 0.75 A (TYP)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 0.300 A/ 230 VAC I = 0.592 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 40 A (TYP) 115V/ 20 A(TYP) COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 28.218 A/ 230 VAC I = 14.054 A/ 115 VAC	P
6	LEAKAGE CURRENT	< 1 mA/240 VAC	I/P : 264 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.404 mA N-FG : 0.405 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	BATTERY CUT OFF	10.5±0.5V	I/P : 230 VAC O/P : MIN LOAD Ta : 25°C	10.32 V/230VAC	P
2	OVER VOLTAGE PROTECTION	CH:14.49V~19.5V	I/P: 230VAC I/P: 115VAC O/P:MIN LOAD Ta:25°C	18.59V/ 230VAC 18.57/115VAC Shut down Re- power ON	P
3	OVER LOAD PROTECTION	105 % ~ 150 %	I/P : 230 VAC I/P : 115 VAC O/P : TESTING Ta : 25°C	131.64%/ 230 VAC 129.61%/ 115 VAC Hiccup Mode, recovers automatically after fault condition is removed	P
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,, recovers automatically after fault condition is removed	P



35W Single Output With Battery Charger (UPS Function) PSC-35series

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	AC OK	TTL OPEN COLLECTOR OUTPUT ON:AC OK OFF:AC FAIL MAX RATING:50VDC/30mA	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	AC OK: OK AC ICE : OK	P
2	BATTERY LOW	TTL OPEN COLLECTOR OUTPUT OFF :BATTERY OK ON :BATTERY LOW MAX RATING: 50VDC/30mA BATTERY LOW VOLTAGE:<11V	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	BATTERY OK:OK BATTERY LOW:OK BATTERY LOW VOLTAGE:10.76V:	P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q 1 Rated : 5.5A/ 620V	I/P:High-Line +3V =267V O/P: (1)Full Load input on/off (2)Output Short (3) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (4)full load continue Ta:25°C	(1)492V (2)432V (3)500V (4)490V	P
2	Diode Peak Voltage	D100 Rated : 30A/100 V	I/P:High-Line +3V =267 V O/P: (1)Full Load input on/off (2)Output Short (3) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (4) full load continue Ta:25°C	D100: (1)54.2V (2)43.6V (3)54.2V (4)54.2V	P
3	Input Capacitor Voltage	C5 Rated: : 68 μ / 400V 105°C/ Series	I/P:High-Line +3V =267 V O/P: (1)Full Load input on/off (2) Min load input on /Off (3)Full Load /Min load Change Ta:25°C	(1)326V (2)328V (3)328V	P
4	Control IC Voltage Test	PWM IC U1 Rated : 28V V(MIN.)	I/P:High-Line +3V =267 V O/P: (1)Full Load input on/off (2) Min load input on /Off (3)Full Load /Min load Change Ta:25°C	(1)16.5V (2)15.3V (3)16.5V	P
5	Clamp Diode Peak Voltage	D1 Rated : 800 V 2 A	I/P:High-Line +3V =267 V O/P: (1)Full Load input on/off (2)Output Short (3) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (4) full load continue Ta:25°C	(1) 440 V (2) 368 V (3) 438 V (4) 438 V	P

■ SAFETY & E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P : 3 KVAC/min I/P-FG : 2 KVAC/min O/P-FG : 0.5 KVAC/min	I/P-O/P : 3.6 KVAC/min I/P-FG : 2.4KVAC/min O/P-FG : 0.6 KVAC/min Ta : 25°C	I/P-O/P : 2.258 mA I/P-FG : 2.394 mA O/P-FG : 1.115 mA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P : 500VDC>100MΩ I/P-FG : 500VDC>100MΩ O/P-FG : 500VDC>100MΩ	I/P-O/P : 500 VDC I/P-FG : 500 VDC O/P-FG : 500 VDC Ta : 25°C/70%RH	I/P-O/P : 1545 MΩ I/P-FG : 3250 MΩ O/P-FG : 5876 MΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta : 25°C / 70%RH	4mΩ	P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	PASS	P
2	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
3	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
4	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	P
Test by certified Lab & Test Report Prepare					

RELIABILITY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																
1	TEMPERATURE RISE TEST	MODEL : PSC-35AC 1. ROOM AMBIENT BURN-IN : 1 HRS I/P : 230VAC O/P : FULL LOAD Ta=27.6 °C 2. HIGH AMBIENT BURN-IN : 1 HRS I/P : 230VAC O/P : FULL LOAD Ta=47.2°C	<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta=27.6°C</th> <th>HIGH AMBIENT Ta=47.2°C</th> </tr> </thead> <tbody> <tr><td>1</td><td>U1</td><td>68.2°C</td><td>86.7°C</td></tr> <tr><td>2</td><td>U100</td><td>55.1°C</td><td>74.0°C</td></tr> <tr><td>3</td><td>U200</td><td>61.7°C</td><td>80.7°C</td></tr> <tr><td>4</td><td>C200</td><td>59.6°C</td><td>78.6°C</td></tr> <tr><td>5</td><td>LF1</td><td>62.0°C</td><td>80.6°C</td></tr> <tr><td>6</td><td>BD1</td><td>62.5°C</td><td>80.8°C</td></tr> <tr><td>7</td><td>C5</td><td>57.7°C</td><td>76.6°C</td></tr> <tr><td>8</td><td>D1</td><td>82.1°C</td><td>102.1°C</td></tr> <tr><td>9</td><td>Q1</td><td>72.4°C</td><td>93.4°C</td></tr> <tr><td>10</td><td>T1</td><td>86.8°C</td><td>105.4°C</td></tr> <tr><td>11</td><td>D100</td><td>88.8°C</td><td>107.1°C</td></tr> <tr><td>12</td><td>C105</td><td>68.4°C</td><td>88.0°C</td></tr> <tr><td>13</td><td>D4</td><td>60.0°C</td><td>78.6°C</td></tr> <tr><td>14</td><td>LF100</td><td>50.3°C</td><td>70.2°C</td></tr> <tr><td>15</td><td>C36</td><td>66.7°C</td><td>85.6°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta=27.6°C	HIGH AMBIENT Ta=47.2°C	1	U1	68.2°C	86.7°C	2	U100	55.1°C	74.0°C	3	U200	61.7°C	80.7°C	4	C200	59.6°C	78.6°C	5	LF1	62.0°C	80.6°C	6	BD1	62.5°C	80.8°C	7	C5	57.7°C	76.6°C	8	D1	82.1°C	102.1°C	9	Q1	72.4°C	93.4°C	10	T1	86.8°C	105.4°C	11	D100	88.8°C	107.1°C	12	C105	68.4°C	88.0°C	13	D4	60.0°C	78.6°C	14	LF100	50.3°C	70.2°C	15	C36	66.7°C	85.6°C		P
NO	Position	ROOM AMBIENT Ta=27.6°C	HIGH AMBIENT Ta=47.2°C																																																																		
1	U1	68.2°C	86.7°C																																																																		
2	U100	55.1°C	74.0°C																																																																		
3	U200	61.7°C	80.7°C																																																																		
4	C200	59.6°C	78.6°C																																																																		
5	LF1	62.0°C	80.6°C																																																																		
6	BD1	62.5°C	80.8°C																																																																		
7	C5	57.7°C	76.6°C																																																																		
8	D1	82.1°C	102.1°C																																																																		
9	Q1	72.4°C	93.4°C																																																																		
10	T1	86.8°C	105.4°C																																																																		
11	D100	88.8°C	107.1°C																																																																		
12	C105	68.4°C	88.0°C																																																																		
13	D4	60.0°C	78.6°C																																																																		
14	LF100	50.3°C	70.2°C																																																																		
15	C36	66.7°C	85.6°C																																																																		
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 130 % LOAD Ta : 25°C	TEST : OK	P																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 264VAC/100VAC O/P : 100 % LOAD Ta= -30°C	TEST : OK	P																																																																
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	P																																																																
5	TEMPERATURE COEFFICIENT	±0.03%/°C (0~50°C)	I/P : 230 VAC O/P : FULL LOAD	±0%/°C (0~50°C)	P																																																																
6	STORAGE TEMPERATURE TEST	1. Thermal shock Temperature : -20°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		OK	P																																																																
7	THERMAL SHOCK TEST	1. Thermal shock Temperature : -30°C~ +70°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 AC ON/OFF TEST turn on 58sec ; turn off 2sec		OK	P																																																																



35W Single Output With Battery Charger (UPS Function) **PSC-35series**

8	VIBRATION TEST	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 2G (5) Test Time : 60min in each axis (X.Y.Z) (6) Ta : 25°C	TEST : OK	P
9	CAPACITOR LIFE CYCLE	SUPPOSE C105 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Ta=25°C LIFE TIME (2) I/P : 230VAC O/P : FULL LOAD Ta=45°C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta=45°C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta=45°C LIFE TIME	(1) 146858HRS (2) 36666HRS (3) 83129HRS (4) 122608HRS	P
10	MTBF	MIL-HDBK-217F TOTAL FAILURE RATE : 658.4 KHRS		P
11	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure (Expected Life): Above 50,000 hours @ TA 50°C		P

SAMPLE	TESTER	APPROVAL
PRODUCT SAMPLE	XUJIE	wangdz

2007/3/20 A50-S014