



Test Report: PSC-35B

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. Test

■ RELIABILITY TEST

ENVIRONMENT TEST

DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1 : 240 mVp-p (Max)	I/P : 230VAC O/P : FULL LOAD Ta : 25°C	V1 : 30.8 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1 : 24 V ~ 29V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	23.19 V~ 29.84 V/ 230 VAC 23.19 V~ 29.84 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 : -0.043 %~ 0.043 %	P
4	LINE REGULATION	V1 : 0.5 %~ -0.5 % (Max)	I/P : 90VAC ~ 264 VAC O/P : FULL LOAD Ta : 25°C	V1 : -0.022 %~ 0 %	P
5	LOAD REGULATION	V1 : 0.5 %~ -0.5 % (Max)	I/P : 230 VAC O/P : FULL ~MIN LOAD Ta : 25°C	V1 : -0.043 %~ 0.043 %	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/ 231.694 ms 115VAC/ 236.531 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/ 6.512 ms 115VAC/ 8.300 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/ 80.396 ms 115VAC/ 17.329 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 : 2760 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)170 mVp-p (2)64.0 mVp-p (3)50.0 mVp-p (4)220 mVp-p	P

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)	71.012 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	86% (TYP)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	87.62 %	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 = 0.314 A/ 230 VAC I = 0.576 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 = 28.343 A/ 230 VAC I = 13.992 A/ 115 VAC	P
6	LEAKAGE CURRENT	< 1 mA/240 VAC	I/P : 264 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.398 mA N-FG : 0.398 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	BATTERY CUT OFF	20±1V	I/P : 230 VAC O/P : MIN LOAD Ta : 25°C	20.6V/230VAC	P
2	OVER VOLTAGE PROTECTION	CH:28.98V~39.5V	I/P: 230VAC O/P:MIN LOAD Ta:25°C	35.5V/ 230VAC 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	136.51 %/ 230 VAC 129.23%/ 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

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	AC OK	TTLOPENCOLLECTOROUTPUT 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	TTLOPENCOLLECTOROUTPUT OFF :BATTERY OK ON :BATTERY LOW MAX RATING: 50VDC/30mA BATTERY LOW VOLTAGE:<22V	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	BATTERY OK:OK BATTERY LOW:OK BATTERY LOW VOLTAGE: 21.38V	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/ 620 V	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)528V (2)494V (3)530V (4)518V	P
2	Diode Peak Voltage	D100 Rated : 20A/ 150 V	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	D100: (1)123V (2)120V (3)123V (4)123V	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)374V (2)374V (3)374V	P
4	Control IC Voltage Test	PWM IC U1 Rated : 28 V 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)16.0V (2)16.0V (3)16.0V	P
5	Clamp Diode Peak Voltage	D1 Rated : 800V 2A	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) 480 V (2) 402 V (3) 484 V (4) 482 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 : 2.247 mA I/P-FG : 2.395 mA O/P-FG : 1.101 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 : 2175 MΩ I/P-FG : 1834 MΩ O/P-FG : 3165 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					

ENVIRONMENT TEST

RELIABILITY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																
1	TEMPERATURE RISE TEST	MODEL : PSC-35A 1. ROOM AMBIENT BURN-IN : 1 HRS I/P : 230VAC O/P : FULL LOAD Ta=27.8 °C 2. HIGH AMBIENT BURN-IN : 1 HRS I/P : 230VAC O/P : FULL LOAD Ta=47.3°C	<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta=27.8°C</th> <th>HIGH AMBIENT Ta=47.3°C</th> </tr> </thead> <tbody> <tr><td>1</td><td>LF1</td><td>54.0°C</td><td>71.1°C</td></tr> <tr><td>2</td><td>BD1</td><td>56.1°C</td><td>74.2°C</td></tr> <tr><td>3</td><td>C5</td><td>54.1°C</td><td>73.4°C</td></tr> <tr><td>4</td><td>D1</td><td>74.0°C</td><td>94.7°C</td></tr> <tr><td>5</td><td>Q1</td><td>76.0°C</td><td>97.2°C</td></tr> <tr><td>6</td><td>T1</td><td>85.2°C</td><td>102.5°C</td></tr> <tr><td>7</td><td>C105</td><td>62.0°C</td><td>81.3°C</td></tr> <tr><td>8</td><td>D100</td><td>79.9°C</td><td>97.9°C</td></tr> <tr><td>9</td><td>C200</td><td>69.3°C</td><td>87.4°C</td></tr> <tr><td>10</td><td>U1</td><td>65.7°C</td><td>84.1°C</td></tr> <tr><td>11</td><td>U200</td><td>65.9°C</td><td>83.8°C</td></tr> <tr><td>12</td><td>D4</td><td>59.9°C</td><td>78.6°C</td></tr> <tr><td>13</td><td>RY1</td><td>63.5°C</td><td>80.4°C</td></tr> <tr><td>14</td><td>LF100</td><td>49.5°C</td><td>69.1°C</td></tr> <tr><td>15</td><td>C36</td><td>59.4°C</td><td>76.8°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta=27.8°C	HIGH AMBIENT Ta=47.3°C	1	LF1	54.0°C	71.1°C	2	BD1	56.1°C	74.2°C	3	C5	54.1°C	73.4°C	4	D1	74.0°C	94.7°C	5	Q1	76.0°C	97.2°C	6	T1	85.2°C	102.5°C	7	C105	62.0°C	81.3°C	8	D100	79.9°C	97.9°C	9	C200	69.3°C	87.4°C	10	U1	65.7°C	84.1°C	11	U200	65.9°C	83.8°C	12	D4	59.9°C	78.6°C	13	RY1	63.5°C	80.4°C	14	LF100	49.5°C	69.1°C	15	C36	59.4°C	76.8°C		P
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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=50°C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta=50°C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta=50°C LIFE TIME	(1) 232024HRS (2) 41616HRS (3) 71877HRS (4) 104566HRS	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

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