

MODEL : PSC-60A

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 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1 : 12 V~ 15 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	11.71 V~ 15.58 V/ 230 VAC 11.71 V~ 15.57 V/115VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1 : 1 %~ -1 % (Max)	I/P : 115 VAC / 264 VAC O/P : FULL/ MIN LOAD Ta : 25°C	V1 : 0.7 %~ -0.7 %	P
4	LINE REGULATION	V1 : 0.5 %~ -0.5 % (Max)	I/P : 115VAC ~ 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 : 0.32 %~ -0.32 %	P
6	SET UP TIME	230VAC : 800 ms (Max) 115 VAC : 1600 ms (Max)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 277 ms 115VAC/ 554 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/ 7 ms 115VAC/ 6 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/ 68 ms 115VAC/ 13 ms	P
9	OVER/UNDERSHOOT TEST	< $\pm 5\%$	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 O/P : FULL /Min LOAD 90% DUTY/1KHZ Ta : 25°C	322 mVp-p	P
11	CH2 BAT. CHARGE CURRENT	1.5A (TYP)	I/P : 230 VAC O/P : CH1:FULL LOAD CH2:BAT. Ta : 25°C	1.665 A	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	47 V~264V	P
			I/P : LOW-LINE-3V= 87 V HIGH-LINE+15%=300 V O/P : FULL/MIN LOAD ON : 30 Sec . OFF : 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST : OK	
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE OSC	I/P : 90VAC ~ 264 VAC O/P : FULL~MIN LOAD Ta : 25°C	TEST : OK	P
4	EFFICIENCY	84% (TYP)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	85 %	P
5	INPUT CURRENT	230V/ 1 A (TYP) 115V/ 1.6 A (TYP)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 0.63 A/ 230 VAC I = 1.08 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 60 A (TYP) 115V/ 30 A(TYP) COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 45 A/ 230 VAC I = 22.5 A/ 115 VAC	P
7	LEAKAGE CURRENT	< 1 mA / 240 VAC	I/P : 264 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.035 mA N-FG : 0.01 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105%~ 150 %	I/P : 230 VAC I/P : 115 VAC O/P : TESTING Ta : 25°C	132 %/ 230 VAC 134 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1 : 14.49 V~ 18.63 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	17.73 V/ 230 VAC 17.35 V/ 115 VAC Hiccup Model	P
3	BATTERY CUT OFF	10.5V $\pm$ 0.5V	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	10.49 V/230VAC	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	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	AC OK	TTL open collector output, ON : AC OK ; OFF : AC Fail ; Ice : max. 30mA@ 50VDC	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	OK	P
2	BATTERY LOW	TTL open collector output, ON : Battery Low ; OFF : Battery OK ; Ice : max. 30mA@ 50VDC Battery low voltage < 11V	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	10.62V	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																						
1	TEMPERATURE RISE TEST	MODEL : PSC-60A 1. ROOM AMBIENT BURN-IN : 31.5 HRS I/P : 230VAC O/P : FULL LOAD Ta= 23.4 °C 2. HIGH AMBIENT BURN-IN : 1.5 HRS I/P : 230VAC O/P : FULL LOAD Ta= 54.5 °C <table><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 23.4 °C</th><th>HIGH AMBIENT Ta= 54.5 °C</th></tr><tr><td>1</td><td>LF1</td><td>LF853</td><td>58.3°C</td><td>83.0°C</td></tr><tr><td>2</td><td>BD1</td><td>4A/800V 梳型 SILICON</td><td>56.1°C</td><td>82.2°C</td></tr><tr><td>3</td><td>D1</td><td>EGP20J 2A/600V</td><td>76.4°C</td><td>102.5°C</td></tr><tr><td>4</td><td>C5</td><td>100u/400V 105°C KMG</td><td>54.9°C</td><td>81.7°C</td></tr><tr><td>5</td><td>T1</td><td>TF1891</td><td>80.0°C</td><td>106.1°C</td></tr><tr><td>6</td><td>Q1</td><td>2SK4110 6A/600V</td><td>82.7°C</td><td>113.0°C</td></tr><tr><td>7</td><td>C36</td><td>100u/35V L7Kh 8*11.5 YXF</td><td>64.0°C</td><td>89.5°C</td></tr><tr><td>8</td><td>U1</td><td>NCP1200D</td><td>66.4°C</td><td>92.4°C</td></tr><tr><td>9</td><td>D100</td><td>20CTQ150 20A/150V</td><td>80.2°C</td><td>105.5°C</td></tr><tr><td>10</td><td>C105</td><td>560u/35V UL7Kh 10*25 KY</td><td>66.0°C</td><td>93.4°C</td></tr><tr><td>11</td><td>C107</td><td>220u/35V UL7Kh 8*15 KY</td><td>51.3°C</td><td>77.9°C</td></tr><tr><td>12</td><td>C108</td><td>470u/25V UL7Kh KY</td><td>73.9°C</td><td>98.7°C</td></tr><tr><td>13</td><td>L100</td><td>1.2Φ 1.1uH</td><td>67.6°C</td><td>93.9°C</td></tr></table>			NO	Position	P/N	ROOM AMBIENT Ta= 23.4 °C	HIGH AMBIENT Ta= 54.5 °C	1	LF1	LF853	58.3°C	83.0°C	2	BD1	4A/800V 梳型 SILICON	56.1°C	82.2°C	3	D1	EGP20J 2A/600V	76.4°C	102.5°C	4	C5	100u/400V 105°C KMG	54.9°C	81.7°C	5	T1	TF1891	80.0°C	106.1°C	6	Q1	2SK4110 6A/600V	82.7°C	113.0°C	7	C36	100u/35V L7Kh 8*11.5 YXF	64.0°C	89.5°C	8	U1	NCP1200D	66.4°C	92.4°C	9	D100	20CTQ150 20A/150V	80.2°C	105.5°C	10	C105	560u/35V UL7Kh 10*25 KY	66.0°C	93.4°C	11	C107	220u/35V UL7Kh 8*15 KY	51.3°C	77.9°C	12	C108	470u/25V UL7Kh KY	73.9°C	98.7°C	13	L100	1.2Φ 1.1uH	67.6°C	93.9°C	P
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 114 % LOAD Ta : 25.8 °C	TEST : OK	P																																																																						
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 230 VAC O/P : 100 % LOAD Ta= -25 °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 %(0~50°C)	I/P : 230 VAC O/P : FULL LOAD	± 0.005 %(0~50°C)	P																																																																						
6	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	P																																																																						

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P : 3 KVAC/min I/P-FG : 1.5 KVAC/min O/P-FG : 0.5 KVAC/min	I/P-O/P : 3.6 KVAC/min I/P-FG : 1.8 KVAC/min O/P-FG : 0.6 KVAC/min Ta : 25°C	I/P-O/P : 0.886 mA I/P-FG : 0.586 mA O/P-FG : 0.11 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 : 30 GΩ I/P-FG : 30 GΩ O/P-FG : 30 GΩ NO DAMAGE	P
3	APPROVAL	TUV : Certificate NO : UL : File NO :			N/A

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2,-3 CLASS A	I/P : 220/230 /240VAC/50HZ O/P : 100/75/50/25%LOAD Ta : 25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P : 230 VAC (50HZ)/115V(60HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P : 230 VAC(50HZ) /115V(60HZ) O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab	P
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	P
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	P
6	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
7	Test by certified Lab & Test Report Prepare				

M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	PSC-60A : SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P : 230VAC O/P : FULL LOAD Ta= 25 °C LIFE TIME= 96887 HRS I/P : 230VAC O/P : FULL LOAD Ta= 50 °C LIFE TIME= 22119 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE : 589.7 KHRS			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure : Above 20,000 hours @ TA 35°C			P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q 1 Rated 2SK4110 6A/600V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2) Output Short Ta : 25℃	(1) 550 V (2) 552 V	P
2	Diode Peak Voltage	D100Rated 20CTQ150 20A/150V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2)Output Short Ta : 25℃	(1) 138 V (2) 120 V	P
3	Clamp Diode Peak Voltage	D1 Rated EGP20J 2A/600V	I/P : High-Line +3V = 267 V O/P : (1) Dynamic Load 90%DUTY/ 1KHz Ta : 25℃	(1) 488 V	P
4	Input Capacitor Voltage	C 5 Rated 100u/400V 105℃ KMG	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta : 25℃	(1) 373 V (2) 381 V (3) 381 V	P
5	Control IC Voltage Test	U1Rated NCP1200 16V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta : 25℃	(1) 14.119 V (2) 12.868 V (3) 12.866 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2008/11/3	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2009/2/20	PRODUCT SAMPLE W0811C37	PASS	SANFORD SU	VINCENT TSENG
2009/3/11	PRODUCT SAMPLE W0901D38	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023