



全漢企業股份有限公司
FSP TECHNOLOGY INC.

表單版本：2

QUALIFICATION TEST REPORT

Customer: Cisco

Model name: FSP150-A54C1401

Tested by: Brian Chien

Report Rev: 01

Stage: B-TEST

Checked by: Brian Lin

Spec. Rev: 00

Date: 2019/06/20

Approved by: Jason Wei

Item	Sub-Item	Results	Page	Comments
Input Characteristics	Efficiency	Pass	1	
	Power saving	Pass	5	
	Input current	Pass	6	
	Inrush current	Pass	7	
	Turn on time	Pass	11	
	Hold up time	Pass	19	
Output Characteristics	Output voltage regulation	Pass	27	
	Ripple & Noise	Pass	29	
	Dynamic load	Pass	31	
	Overshoot (turn on)	Pass	39	
	Overshoot (turn off)	Pass	62	
	Rise time	Pass	85	
	Brownout	Pass	93	
Protections	Short circuit	Pass	95	
	Over power	Pass	97	
	Over voltage	Pass	98	
	Over temperature	Pass	105	
Safety	Leakage current	Pass	108	
	Hi-pot	Pass	109	
	Insulation resistance	Ref	110	

Environment/Reliability	Thermal	Pass	111	
	Power de-rating	Pass	115	
	Acoustic emissions	Pass	124	
	Burn in	Pass	126	IEC60068-2-2
	ON/OFF cycling	Pass	127	
	Low temperature storage	Pass	128	IEC60068-2-1
	High temperature storage	Pass	129	IEC60068-2-2
	Temperature & Humidity cycling	Pass	130	IEC60068-2-14
	Cold start	Pass	132	IEC60068-2-1
E.M.C.	Lightning surge	Pass	133	EN61000-4-5
	ESD	Pass	141	EN61000-4-2
	EFT	Pass	143	EN61000-4-4
	EMI	Pass	145	EN55032
	AC Voltage DIPS and Short interruptions	Pass	170	EN61000-4-11
	Harmonic current	Pass	173	EN61000-3-2

表單編號:A000W-00502

Efficiency

1. Specification:

DOE(Level VI):

(1)115Vac / 0A load $\leq 0.21W$

(2)115Vac / 25%,50%,75%,100% load $\geq 88\%$

(Average Active Mode Efficiency ,Warm up 30 minutes later , DC Cable ≤ 1500 mm,20AWG)

Erp(Tier 2):

(1)230Vac / 0A load $\leq 0.15W$

(2)230Vac / 25%,50%,75%,100% load $\geq 89\%$

(Average Active Mode Efficiency ,Warm up 30 minutes later , DC Cable ≤ 1500 mm,20AWG)

Coc V5(Tier 2):

(1)230Vac / 0A load $\leq 0.15W$

(2)230Vac / 25%,50%,75%,100% load $\geq 89\%$

(3)230Vac / 10% load $\geq 79\%$

(Average Active Mode Efficiency ,Warm up 30 minutes later , DC Cable ≤ 1500 mm,20AWG)

Efficiency: (Warm up 10minutes later)

100Vac @ 2.78A load, Efficiency $\geq 90\%$

240Vac @ 2.78A load, Efficiency $\geq 92\%$

2. Test condition:

Input: 100Vac/60Hz; 115Vac/60Hz; 230Vac/50Hz; 240Vac/50Hz

Ambient Temperature: 25°C

Load	+54V
No load	0A
10%	0.278A
25%	0.695A
50%	1.39A
75%	2.085A
Full	2.78A

3. Test record:

Sample No.1

Load	Vin (Vac)	Iinrms (A)	Pin (W)	Pout (W)	PF	Eff (%)	Spec (%)	Result
Full	100.02	1.6236	160.72	147.97	0.98960	92.067	≥ 90	PASS
	240.18	0.71140	158.39	147.96	0.92700	93.415	≥ 92	PASS

	115V/60Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.30	0.69	1.38	2.07	2.76
Vout (V)		53.89	53.83	53.73	53.63	53.52
Pout (W)		16.17	37.15	74.25	111.11	147.80
Fin (Hz)	60	60	60	60	60	60
Iin (A)	0.0273	0.1905	0.3904	0.7207	1.0733	1.4026
Vin (V)	115.30	115.25	115.20	115.21	115.13	115.04
Pin (W)	0.105	19.85	42.22	80.70	119.57	158.79
THDv (%)	0.10	0.09	0.08	0.07	0.07	0.07
PF (W/VA)	0.03	0.90	0.94	0.97	0.97	0.98
Power Consumed (W)	0.105	3.69	5.08	6.45	8.45	10.99
Efficiency	--	0.8144	0.8798	0.9201	0.9293	0.9308
Average Efficiency	--	--	0.9150			

	230V/50Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.30	0.69	1.38	2.07	2.76
Vout (V)		53.90	53.83	53.73	53.62	53.52
Pout (W)		16.17	37.15	74.25	111.10	147.70
Fin (Hz)	50	50	50	50	50	50
Iin (A)	0.0351	0.1223	0.2167	0.3878	0.5672	0.7362
Vin (V)	230.27	230.21	230.19	230.14	230.10	230.05
Pin (W)	0.131	19.81	42.19	80.33	118.73	157.24
THDv (%)	0.05	0.04	0.04	0.03	0.02	0.02
PF (W/VA)	0.02	0.70	0.85	0.90	0.91	0.93
Power Consumed (W)	0.131	3.64	5.04	6.09	7.63	9.54
Efficiency	--	0.8164	0.8804	0.9242	0.9357	0.9394
Average Efficiency	--	--	0.9199			

Sample No.2

Load	Vin (Vac)	Iinrms (A)	Pin (W)	Pout (W)	PF	Eff (%)	Spec (%)	Result
Full	100.02	1.6213	160.48	147.78	0.98960	92.086	≥ 90	PASS
	240.28	0.70910	157.81	147.82	0.92610	93.670	≥ 92	PASS

	115V/60Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.30	0.69	1.38	2.07	2.76
Vout (V)		53.76	53.69	53.58	53.47	53.36
Pout (W)		16.13	37.15	74.15	110.89	147.37
Fin (Hz)	60	60	60	60	60	60
Iin (A)	0.0273	0.1908	0.3868	0.7188	1.0715	1.4013
Vin (V)	115.29	115.25	115.20	115.22	115.14	115.05
Pin (W)	0.108	19.87	42.11	80.53	119.28	158.35
THDv (%)	0.10	0.09	0.08	0.07	0.07	0.07
PF (W/VA)	0.03	0.90	0.95	0.97	0.97	0.98
Power Consumed (W)	0.108	3.74	4.96	6.38	8.39	10.98
Efficiency	--	0.8117	0.8821	0.9207	0.9297	0.9307
Average Efficiency	--	--	0.9158			

	230V/50Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.30	0.69	1.38	2.07	2.76
Vout (V)		53.76	53.69	53.59	53.48	53.37
Pout (W)		16.23	37.15	74.05	110.89	147.39
Fin (Hz)	50	50	50	50	50	50
Iin (A)	0.0356	0.1222	0.2169	0.3879	0.5665	0.7365
Vin (V)	230.25	230.21	230.18	230.14	230.10	230.05
Pin (W)	0.137	19.82	42.12	80.20	118.48	156.88
THDv (%)	0.05	0.04	0.04	0.03	0.02	0.02
PF (W/VA)	0.02	0.70	0.84	0.90	0.91	0.93
Power Consumed (W)	0.137	3.59	4.97	6.15	7.59	9.49
Efficiency	--	0.8187	0.8820	0.9233	0.9360	0.9395
Average Efficiency	--	--	0.9202			

Sample No.3

Load	Vin (Vac)	Iinrms (A)	Pin (W)	Pout (W)	PF	Eff (%)	Spec (%)	Result
Full	100.21	1.6166	160.29	147.94	0.98930	92.295	≥ 90	PASS
	240.17	0.71050	157.89	147.86	0.92510	93.647	≥ 92	PASS

	115V/60Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.30	0.69	1.38	2.07	2.76
Vout (V)		53.63	53.56	53.46	53.36	53.24
Pout (W)		16.19	37.06	73.98	110.55	147.05
Fin (Hz)	60	60	60	60	60	60
Iin (A)	0.0282	0.1910	0.3900	0.7204	1.0683	1.3947
Vin (V)	115.31	115.25	115.30	115.22	115.13	115.04
Pin (W)	0.105	19.88	42.11	80.40	119.01	158.04
THDv (%)	0.10	0.09	0.08	0.07	0.07	0.07
PF (W/VA)	0.03	0.90	0.94	0.97	0.97	0.99
Power Consumed (W)	0.105	3.69	5.05	6.42	8.46	10.99
Efficiency	--	0.8144	0.8800	0.9202	0.9289	0.9305
Average Efficiency	--	--	0.9149			

	230V/50Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.30	0.69	1.38	2.08	2.76
Vout (V)		53.63	53.56	53.47	53.37	53.26
Pout (W)		16.19	37.06	73.99	110.77	147.20
Fin (Hz)	50	50	50	50	50	50
Iin (A)	0.0356	0.1229	0.2166	0.3866	0.5647	0.7330
Vin (V)	230.24	230.21	230.18	230.15	230.10	230.06
Pin (W)	0.132	19.79	42.08	80.11	118.28	156.63
THDv (%)	0.05	0.05	0.04	0.03	0.02	0.02
PF (W/VA)	0.02	0.70	0.84	0.90	0.91	0.93
Power Consumed (W)	0.132	3.60	5.02	6.12	7.52	9.42
Efficiency	--	0.8180	0.8807	0.9236	0.9365	0.9398
Average Efficiency	--	--	0.9202			