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FSP GROUP INC
 MR A CHENG
 22 JIANGUO E RD
 TAOYUAN CITY TAIWAN

RE: Project Number(s) - 01NK19506,01CA03007,01CA02627

Your most recent listing is shown below. Please review this information and report any inaccuracies to the UL Engineering staff member who handled your project.

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QQGQ2 June 6, 2001
Power Supplies, Information Technology Equipment Including Electrical Business Equipment - Component

FSP GROUP INC **E190414**
22 JIANGUO E RD, TAOYUAN CITY TAIWAN

Model No.	Rated Input		SC	Output			OC	SP	EP	FC	GC
	V	Hz		Max V	Max A	Max VA					
ACE-1010AXX, FSP200-60PUXX	100/240	60/50	0	3.3	12	62	3	1950	20	2	1
				5	16	158					
				12	5	163					
				-12	0.8	55					
				-5	0.3	6.2					
				+5 Vsb	2	27					
ACE-1020AXX	100/240	60/50	0	5.45	31.20	127	4	1950	—	—	—
				12.82	15.10	177					
				4.98	4.78	22					
				3.31	29.00	70					
				-12.10	1.74	22					
				-5.17	1.43	7					
ATX-200GT, ATX-200GN	115/230 or 230	50/60	0	+5R	21R	105R	3	1950	20B	0	1
				+3.3R	14R	46.2R					
				+12R	6.5R	78R					
				-5R	0.3R	1.5R					
				-12R	0.5R	6R					
				5VsbR	2R	10R					
ATX-250GT, ATX-250GN	115/230 or 230	50/60	0	+5.6	62	230	3	1950	20B	0	1
				+3.4	49	81					
				+12.6	32	300					
				-5.9	4.5	11					
				-14.1	11	52					
				5.2Vsb	3.9	18					
ATX-250N	115/230	60/50	0	5.2	43.5	153	3	1950	20B	0	0
				13	18	211					
				3.3	35.7	58.5					
				-5	5.6	18.7					

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Model No.	Rated Input		SC	Output			OC	SP	EP	FC	GC
	V	Hz		Max V	Max A	Max VA					
FSP020-2P01XX where X may be any alphanumeric character or blank	100-240	50/60	0	-12 +5 +5 +3.3	6.1 0.8 0.5 5.0	50.5 40R 10.1 22.8	3	1950	20B	0	0
FSP060-2P01XX	100-240	50/60	0	5.12 11.7 -12.06	26.1 11.2 1.4	87 66 15.9	3	1950	20B	2	1
FSP060-3P02XX	100-240	50/60	0	5.12 11.7	26.1 11.2	87 66	3	1950	20B	2	1
FSP090-50NA, FSP090-50NI, FSP090-50NIA, FSP090-50NW, FSP090-51NA, FSP090-51NI	115/230	60/50	0	+5R +12R +3.3R -12R 5R	10R 1.5R 6R 0.2R 0.72R	50R 18R 19.8R 2.4R 3.6R	3	1950	20	0	0
FSP090-50PI, FSP090-50PP, FSP090-50PL	100-240	47-63	0	+5R +12R +3.3R -12R 5R	12R 1.5R 8R 0.2R 1.2R	60R 18R 26.4R 2.4R 6R	3	1950	20	0	0
FSP090-61GY(a), FSP090-60GZW(b)	115/230	60/50	0	+5.0 +12.00 +3.3 -5.0 -12.0 +5sb	10.0 2.0 8.0 0.3 0.5 0.8	50.0 24.0 26.4 1.5 6.0 4.0	3	1950	20	0	0
FSP100-50CI, FSP100-51CI, FSP145-50CI, FSP145-51CI	115/230	50/60	0	+5.35 +11.99 +3.37 -12.32 +4.94	36 18 13 7 2.6	144 187 28 60 12.5	3	1950	20B	0	1
FSP150-50CI, FSP150-51CI	115/230	50/60	0	+5.0R +12.0R +3.3R -5.0R -12.0R +5VsbR	10R 4.5R 10R 0.2R 0.3R 2.0R	50.0R 54.0R 33.0R 1.0R 3.6R 10.0R	3	1950	20B	0	1
FSP110-50NA, FSP110-50NI, FSP110-50NIA, FSP110-50NW, FSP110-51NA, FSP110-51NI	115/230	60/50	0	+5R +12R +3.3R -12R 5R -5R	10R 2R 8R 0.5R 0.8R 0.3R	50R 24R 26.4R 6R 4R 1.5R	3	1950	20	0	0
FSP120-50PI, FSP120-50PP	100-240	47-63	0	+5R +12R +3.3R -12R 5R	14R 2R 8R 0.3R 1.2R	70R 24R 26.4R 3.6R 6R	3	1950	20	0	0
FSP145-50NA, FSP145-50NI, FSP145-50NIA, FSP145-50NW, FSP145-51NA, FSP145-51NI	115/230	60/50	0	+5.15 +12.19 +3.43 -12.24 5.23 -5R	47 18.6 30 1.6 1.5 0.3R	203.5 209.9 65.7 16.53 6.43 1.5R	3	950	20	0	0
FSP145-60SI	100-120/ 200-240	60/50	0	5.42 +12R +3.3R -5R -12R	37 4R 10R 0.2R 0.3R	142 218	3	1950	20	8	1

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Model No.	Rated Input		SC	Max V (Total 145 W maximum)	Output		OC	SP	EP	FC	GC
	V	Hz			Max A	Max VA					
FSP145-60SP, FSP145-60SF	100-120/ 200-240	50/60	0	5.8 12.9 3.4 12.2 5.0	42 19 27 1.4 1.2	172 218 58 15 6	3	1950	20B	6,2	1
FSP180-60SI, FSP145-60SA, FSP180-60SA	100-120/ 200-240	50/60	0	5.5 12.8 3.3 -5.1 -13.3 5.0	43.0 20.0 32.0 1.6 18.0 3.3	170.0 232.0 61.0 6.0 70.0 15.0	3	1950	20	6,2	0
FSP145-61GI, FSP145-61GN, FSP145-61GT, FSP145-61GW, FSP145-60GZW(b)	115/230	60/50	0	+5.1 13.6 3.5 -5 -12.54 +4.98	42 17 35 -4.8 7 2	165.06 193.0 62.4 12.88 50.96 9.04	3	1950	20	0	0
FSP030-2P04XX	100-240	50/60	0	5.17 13.1	14.9 4.7	51.8 40.9	3	1950	20B	0	0
FSP100-60PL	115-230	50/60	0	+5.24 +3.36 +12.5 -5.3 -12.8	33.0 17.0 12.8 1.1 7.6	116 50 137 5 4	3	1950	20B	0	0
FSP110-60PA	115-230	60/50	0	5.2 +3.4 +12.6 -5.2 -13.1 5.1	2.9 34.0 19.0 13.5 1.1 8.2	15 121 53 148 8 46	3	1950	20B	0	0
FSP145-60PA, FSP145-60PI	115-230	60/50	0	+5.2 +12.7 +3.3 -5.0 -13.2	37 15 22 1.4 10	136 167 63 7 58	3	1950	20B	0	0
FSP145-60GIA, FSP145-60GNA, FSP145-60GTA, FSP145-60PNA(PF)	115/230	60/50	0	5.2 13 3.4 -5 -12.54 5	64 21 45 7 9 3.6	200 221 64 12 46 17	3	1950	20B	6,2	1
FSP145-SF@, FSP145-SP@	100-120/ 200-240	50/60	0	+5.78 +12.85 +3.35 -12.16 +5.01 -5.03	42 19.2 27 1.4 1.2 0.89	172.2 218.8 58.05 15.27 5.94 3.68	3	1950	20	0	0
FSP135-60PF	115/230	50/60	0	5.2 12.5 3.3 -5.1 -12.2 5.1	39 16 25 1.4 6.4 2.7	157 174 66 7 53 13	0	1950	20B	0	1
FSP150-50NI, FSP175-50NI, FSP-150-50NI(PF), FSP175-51NI, FSP150-51NI, FSP-150-51NI(PF)	115/230	60/50	0	+5.15 +12.19 +3.43 -12.24	47 18.6 30 1.6	203.5 209.9 65.7 16.53	3	1950	20B	0	0

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Model No.	Rated Input		SC	Output			OC	SP	EP	FC	GC
	V	Hz		Max V	Max A	Max VA					
FSP150-60SF, FSP150-60SP, FSP150-60SP(PF)	100-120/ 200-240	60/50	0	4.96	3.3	15.7	3	1950	20B	6,2	0
				-5R	0.3R	1.5R					
				5R	18R	90					
				12R	4.2R	50.4R					
				3.3R	10R	33					
				-5R	0.3R	1.5R					
FSP200-50NW	115/230	60/50	0	-12R	0.3R	3.6R	3	1950	20B	0	0
				+5VsbR	3R	15R					
				5.4	41	166					
				12.4	18	198					
				3.4	37	74					
				5.1	1.5	6					
FSP200-60SF, FSP200-60SP	100-120/ 200-240	60/50	0	12.1	1.7	15	3	1950	20B	6,2	1
				5.0	3.4	16					
				5R	21R	105R					
				12R	7R	84R					
				3.3R	12R	39.6R					
				-5R	0.3R	1.5R					
FSP200-61GI, FSP200-61GN, FSP200-61GT, FSP200-61GW, FSP200-60GZW(b)	115/230	60/50	0	-12R	0.5R	6R	3	1950	20	0	0
				+5VsbR	0.8R	4R					
				+5.1	42	165.06					
				13.6	17	193.0					
				3.5	35	62.4					
				-5	-4.8	12.88					
FSP200-60GIA, FSP200-60GNA, FSP200-60GTA	115/230	60/50	0	-12.54	7	50.96	3	1950	20B	6,2	1
				+4.98	2	9.04					
				5.2	64	200					
				13	21	221					
				3.4	45	64					
				-5	7	12					
FSP150-60IU	100-240	50/60	0	-12.4	9	46	3	1950	20B	0	0
				5	3.6	17					
				5	14	70					
				12	4.5	54					
				3.3	10	33					
				-5	0.3	1.5					
FSP200-60IU	100-240	50/60	0	-12	0.8	9.6	3	1950	20B	0	0
				5sb	2	10					
				5.6	51	205					
				12.6	24	220					
				3.4	34	84					
				-5.1	2.1	9					
FSP200-60U1	115-230	50/60	0	-12.7	12	66	3	1950	20B	0	0
				5.1sb	5.6	23					
				5.78	50	202					
				12.51	19	209					
				3.32	48	74					
				-5.18	1.4	7.3					
FSP235-61GI, FSP235-61GN, FSP235-61GT, FSP235-60GZW(b)	100-120	50/60	0	-14.81	11	61	3	950	20	0	0
				5.08sb	3.8	17					
				+5.2	45	177.7					
				13.6	17	193.0					
				3.5	35	62.4					
				-12.54	7	50.96					
FSP235-60GIA, FSP235-60GNA, FSP235-60GTA, FSP235-60PNA, FSP235-60PNA(PF)	115/230	50/60	0	+4.98	2	9.04	3	1950	20B	6,2	1
				5.2	64	200					
				13	21	221					
				3.4	45	64					
				-5	7	12					
				-12.4	9	46					
FSP250-60BN*	115/230	50/60	0	5	3.6	17	3	1950	20B	0	0
				+5.24	46	220					

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Model No.	Rated Input		SC	Output			OC	SP	EP	FC	GC
	V	Hz		Max V	Max A	Max VA					
FSP250-60BT*, FSP250-60BN(12V), FSP250-60BT(12V)				+12.6 -12.58 +3.46 -5.14 +4.99	19.3 4.1 33 2.8 3.9	232 45.8 92.8 13.7 17.3					
		+5 Vsb									
FSP250-61GL, FSP250-61GN, FSP250-61GT	115/230	60/50	0	+5.2 13.6 3.5	45 17 35	177.7 193.0 62.4	3	950	20	0	0
FSP250-61GN(AMD), FSP250-61GN(A), FSP250-61GT(A), FSP250-61GT(AMD)	115/230	60/50	0	5.2 13.6 3.5 -5 -12.54 4.98	45 17 35 4.8 7	177.7 193 62.4 12.88 50.96 9.04	3	1950	20B	0	0
FSP250-60GIA, FSP250-60GNA, FSP250-60GTA	115/230	60/50	0	5.2 5.2 13 3.4 -5 12.4 5	45 45 21 45 7 9 3.6	177.7 200 221 64 12 46 17	3 3	1950 1950	20B 20B	0 6.2	0 1
FSP280-60FS	115/230	60/50	0	+5R +12R +3.3R -5R -12R +5sbR	22.0R 10.0R 20.0R 0.3R 0.8R 1.0R	— — — — — —	3	1950	20B	0	1
FSP300-60BR**	115/230	50/60	0	+5R +12R -12R +3.3R -5R +5R	30R 9R 0.8R 28R 0.3R 1-1.6R	180R 108R 9.6R 92.4R 1.5R 8R	3	1950	20B	0	0
FSP300-60BN, FSP300-60BT FSP300-60BN(PF), FSP300-60BT(PF), FSP300-60BN(12V), FSP300-60BT(12V)	115 /230	50 /60	0	+5R +12R +3.3R -5R -12R +5Vsb	30R 11R 16R 0.3R 0.8R 2/3R	— — — — — —	3	1950	20B	0	0
FSP300-60U2	115/230	60/50	0	+5.62 +3.47 +12.68 -14.60 -5.16 5.14	72 60 29 18 2.3 3.3	269 104 321 53 11 15.3	3	1950	20B	0	0
FSP300-60GRA	115/230	60/50	0	+5.6 13.2 3.5 4.8 12.7 5.3	127 73 50 1.6 28 3.2	331.2 744.6 116.6 5.4 120.4 11.8	3	1950	20	0	1
FSP300-60PNA(PF)	115/230	60/50	0	+5R +12R +3.3R -5R -12R +5R +5Vsb	30R 15R 15R 0.3R 0.8R 2R	150R 180R 49.5R 1.5R 9.6R 10R	3	1950	20B	0	0
FSP300-60U2	100-240	60-50	0	5.6 3.4	34.2 49.1	143 106	3	1950	20B	2.6	1

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Model No.	Rated Input		SC	Output			OC	SP	EP	FC	GC									
	V	Hz		Max V	Max A	Max VA														
FSP330-60BN***, FSP330-60BT***	115/230	50/60	0	14.1	32.1	360	3	1950	20B	0	0									
				-12.1	2.5	23.1														
				-5.2	1.2	4.4														
				5.2	5.4	24.6														
				Vsb																
				+5R	32R	160R														
				+12R	8/7R	96R														
				-12R	0.8R	9.6R														
FSP350-60BN****, FSP350-60BT****	115/230	50/60	0	+3.3R	28R	92.4R	3	1950	20B	0	0									
				-5R	0.3R	1.5R														
				+5R	2/3R	8R														
				+5.17	87	256														
				+12.52	34	350														
				-12.45	5.9	56.8														
				+3.32	50	26.5														
				-5.13	3.6	21.5														
FSP400-60GN(c)(d)	115/230	50/60	0	+4.99	4.3	18.3	3	1950	20B	0	1									
				5.45	43.6	176.7														
				3.46	44.2	110.1														
				12.73	16.9	201.5														
				-12.0	2.2	23.2														
				-5.12	0.5	1.9														
				5.17	3.2	15.7														
				5.4	58	173														
FSPxxx-60PFN, FSP300-60PFN(1), FSP300-60PFN(12V) where xxx=150, 200, 250, 235 or 300	100/240	50-60	0	3.4	52	108	3	1950	20B	2,6	0									
				13.1	22	210														
				-12.1	2.4	21.6														
				-5.2	1.6	7.4														
				5.1	5.4	26.8														
				Optional Appliance Outlet	115/230	60/50						0	—	—	—	1	1950	20B	5,6	1

Model No.	Rated Input			SC	Output			OC	SP	EP	FC	GC										
	V	A	Hz		Max V	Max A	Max VA															
FSP090-50MA, FSP090-50ML, FSP090-50ML, FSP090-50MP	115/230	3/1.5	60/50	0	+5R	10R	50R	3	1950	20	2,3	0										
					+12R	15R	18R															
					+3.3R	6R	19.8R															
					-12R	0.2R	2.4R															
					+5R	0.72R	3.6R															
					+12R	10R	50R															
FSP110-50MA, FSP110-50MI	115/230	3/1.5	60/50	0	+12R	2R	24R	3	1950	20	2,3	0										
					+3.3R	8R	26.4R															
					-12R	0.5R	6R															
					+5R	0.8R	4R															
					5.1	19.2	50.8															
					12.0	1.7	16.9															
FSP028-40MS	90-264	1.0	47-63	0	12.3	1.3	15.1	3	1950	20	2	0										
					5.03	1.45	7.2															
					24.4	5.8	118															
					FSP060-1S04XX, where X may be any alphanumeric character or blank	100-240	1.5						50/60	0	3.3	23.0	52.0	3	1950	20	2	0
					FSP060-2P02XX, where X may be any alphanumeric character or blank	100-240	1.2						50/60	0	12.8	6.1	58.0	3	1950	20	2	0
					FSP060-2P03XX, where X may be any alphanumeric character or blank	100-240	1.5						50/60	0	3.3	15.0	53.0	3	1950	20	2	0
					13.0	3.9	31.0															

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Model No.	Rated Input		Hz	SC	Output			OC	SP	EP	FC	GC
	V	A			Max V	Max A	Max VA					
FSP060-4P01XX, FSP060-4P02XX	100-240	2.0	50/60	0	5.11	18.5	60.3	3	1950	20B	0	0
					12.6	8.0	67.8					
					-5.0	1.3	6.4					
					-12.0	1.28	15.3					
FSP060-4P03XX	100-240	2.0	50/60	0	5.0	17	57.9	3	1950	20B	0	0
					12.7	8.4	61.9					
					12.9	5.3	42.0					
					5.17	5.5	23.0					
FSP030-2P01XX	100-240	1.0	50/60	0	+5	4.5	28	3	1950	20B	0	1
					+12	0.5	—					
FSP030-2P02XX	100-240	1.0	50/60	0	—	3.5	29	3	1950	20B	0	1
FSP030-2P03XX	100-240	1.0	50/60	0	+5	1.0	—	3	1950	20B	0	1
					+12	1.0	17					
FSP090-50DP, FSP145-50DL	115/230	4/2	60/50	0	+5.37	29	114	3	1950	20B	0	1
					+3.3	23	41					
					+11.97	10.9	121					
					-12.22	15	15.6					
					+5.01	3.2	15.5					
					-4.99	1.2	6.1					
					+5R	10R	50R					
					+12R	1.5R	18R					
					+3.3R	6R	19.8R					
					-12R	0.2R	2.4R					
FSP090-50MA, FSP090-50MI, FSP090-50ML, FSP090-50MP	115/230	3/1.5	60/50	0	+5R	10R	50R	3	1950	20	2,3	0
					+12R	1.5R	18R					
					+3.3R	6R	19.8R					
					-12R	0.2R	2.4R					
					+5R	0.72R	3.6R					
					+5R	10R	50R					
FSP110-50MA, FSP110-50MI	115/230	3/1.5	60/50	0	+5R	10R	50R	3	1950	20	2,3	0
					+12R	2R	24R					
					+3.3R	8R	26.4R					
					-12R	0.5R	6R					
FSP145-50DP,	115/230	4/2	60/50	0	+5.35	37.7	149	3	1950	20B	0	1
					3.41	16.9	32					
					+12.15	13.4	150					
					-12.08	1.6	16.7					
					+4.98	3.2	15.5					
					-5.03	1.2	5.7					
					5	18	145W					
FSP145-60AI, FSP145-60AT, FSP145-60AN	100-120/ 200-240	9/4.5	60/50	0	12	4	max	3	1950	20B	0	1
					-5	0.2						
					-12	0.3						
					3.3	12						
					5Vsb	2.0/						
						1.6						
						/1.0						
					3.3(R)	8.0(R)	145W					
					+5(R)	15(R)	Max					
					+12(R)	4.2(R)						
FSP180-60PFN(SAXX)	100-240	4	60-50	0	+3.3(R)	10.0(R)	180	3	1950	20B	2	1
					+5(R)	18.0(R)	Max					
					+12(R)	6.0(R)						
					-12(R)	0.3(R)						
					-5(R)	0.2(R)						
					+5Vsb(R)	2.0(R)						
					+3.3(R)	10.0(R)	180					
+5(R)	18.0(R)	Max										
FSP200-60PFN(SAXX)	100-240	4	60-50	0	5.1	44	175	3	1950	20B	2	1
					12.1	19.3	210					
					5.2	5	24					
					3.4	28.4	75					
					-11.4	3.2	31					
					-5.2	0.9	4					
					5	20	200W					
FSP200-60AI,	100-120/	9/4.5	60/50	0	5	20	200W	3	1950	20B	0	1

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Model No.	Rated Input		Hz	SC	Output		Max VA max	OC	SP	EP	FC	GC
	V	A			Max V	Max A						
FSP200-60AT, FSP200-60AN	200-240				12 -5 -12 3.3 5Vsb	7 0.3 0.5 14 2.0/ 1.6 /1.0						
FSP235-60AL, FSP235-60AT, FSP235-60AN	100-120/ 200-240	9/4.5	60/50	0	5 12 -5 -12 3.3 5Vsb	22 8 0.3 0.5 14 2.0/ 1.6 /1.0	235W max	3	1950	20B	0	1
FSP250-60AL, FSP250-60AT, FSP250-60AN	115/230	9/4.5	60/50	0	5.96 12.9 3.68 5.09 12.34 5.1	58 19 89.1 138 17.88 3.3	229.1 186.2 89.1 6.29 17.88 16.1	3	1950	20B	0	1
@FSP250-60PN, FSP250-60PT, FSP200-60PN, FSP160-60PN, FSP145-60PN	100-240	47-63	0	5.22 12.52 3.38 5.04 12.13	48 29 34 2 1.5	226.08 235.8 70.56 9.04 17.67	3	1950	20	6.2	1	
@FSP235-60PN, FSP235-60PT, FSP200-60PT, FSP200-60PA, FSP160-60PT	100-240	47-63	0	5.2 3.35 12.42 5.14 12.3 5.15	46 32 23 1.9 9.5 4.2	186.3 82.96 216.6 8.98 69.07 12.56	3	1950	20	6.2	1	
FSP030-2P05XX	2.0	100 /240	50/60	0	+5(R) +12(R)	4.5(R) 0.2(R)	—	3	1950	20	0	0
FSP180-60SI	100-120/ 200-240	50 /60	0	5.5 12.8 3.3 -5.1 -13.3 5.0	43.0 20.0 32.0 1.6 18.0 3.3	170.0 232.0 61.0 6.0 70.0 15.0	3	1950	20	6.2	0	

* - (+5V & +3.3V = 145W) (Total output 250W max).

** - (+5V & +3.3V = 180W) (Total output 300W max).

*** - (+5V & +3.3V = 220W) (Total output 330W max).

**** - (+5V & +3.3V = 220W) (Total output 350W max).

@ - (-5V and +3.3V is optional).

(a) - Y may be I, N, T or W.

(b) - Z may be I, N, P or T.

(c) - +5V and +3.3V = 235W.

(d) - Total Output = 400W maximum.

R - Rated values.

@ - Indicates optional AC outlet 115/230 47-63 0 115/230 2/1(rated) 0 1950 20B 5 1.

Marking: Company name and model designation.

See General Information Preceding These Recognitions

For use only in equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.