

HK50A

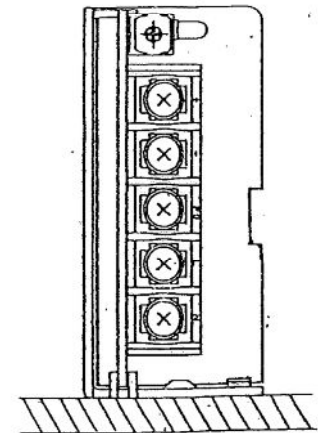
SPECIFICATIONS

PA779-01-01C

Item	Model	HK50A-5	HK50A-12	HK50A-15	HK50A-24
1 Nominal Output Voltage	V	5	12	15	24
2 Maximum Output Current	A	10.0	4.2	3.4	2.2
3 Maximum Output Power	W	50.0	50.4	51.0	52.8
4 Efficiency (Typ) (*1)	%	79	81	82	84
5 Input Voltage Range (*2)	—	85-132VAC (47-440Hz) or 110-175VDC			
6 Input Current (Typ) (*1)	—	1.2A at 100VAC			
7 Inrush Current (Typ) (*3)	—	30A at 100VAC			
8 Output Voltage Range	—	±10%			
9 Maximum Ripple & Noise	mV	120	150	150	150
10 Maximum Line Regulation (*4)	mV	20	48	60	96
11 Maximum Load Regulation (*5)	mV	40	96	120	150
12 Over Current Protection (*6)	—	105% -			
13 Over Voltage Protection (*7)	—	115% to 135%			
14 Hold-Up Time (Typ) (*1)	—	20ms			
15 Series Operation	—	Possible			
16 Operating Temperature (*8)	—	0°C to +50°C (100%), 60°C (50%)			
17 Operating Humidity	—	30% to 90% RH			
18 Storage Temperature	—	-30°C to +85°C			
19 Storage Humidity	—	10% to 95% RH			
20 Cooling	—	Convection Cooled			
21 Temperature Coefficient (*9)	—	1% (Typ) at 0°C to +50°C			
22 Withstand Voltage (*10)	—	Input - Chassis, Input - Output : 2kVAC (20mA) Output - Chassis : 500VAC (100mA) for 1min			
23 Isolation Resistance	Ohm	More than 100M Ohm at 25°C and 70%RH Output-FG 500VDC			
24 Vibration	—	10-55Hz (sweep 1 min) less than 19.6m/s ² X,Y,Z 1 h each			
25 Shock	—	Less than 196.1m/s ²			
26 Safety	—	Approved by UL60950-1 & CSA C22.2 No.60950. Designed to meet DENAN			
27 Conducted Radio Noise	—	Designed to meet FCC class B, VCCI - B			
28 Weight	—	280 g			
29 Size (W.H.D.)	mm	31 . 68 . 119 (Refer to Outline Drawing)			

* NOTES :

- 1 : At 100VAC and Maximum Output Power, Ta = 25°C
- 2 : For cases where conformance to various safety specs (UL, CSA) are required to be described as 100 - 120VAC, 50/60Hz on name plate.
- 3 : Typical value on cold start, Ta = 25°C.
- 4 : From 85 to 132VAC or 110 to 175VDC, constant load.
- 5 : From No Load to Full Load, constant input voltage.
- 6 : Current limiting with automatic recovery.
Avoid to operate over load or dead short for more than 30 seconds.
- 7 : OVP circuit will shut down output, manual reset.
- 8 : At standard mounting (vertical).
- 9 : Constant input voltage & load.
- 10 : Refer to instruction manual for testing procedure.

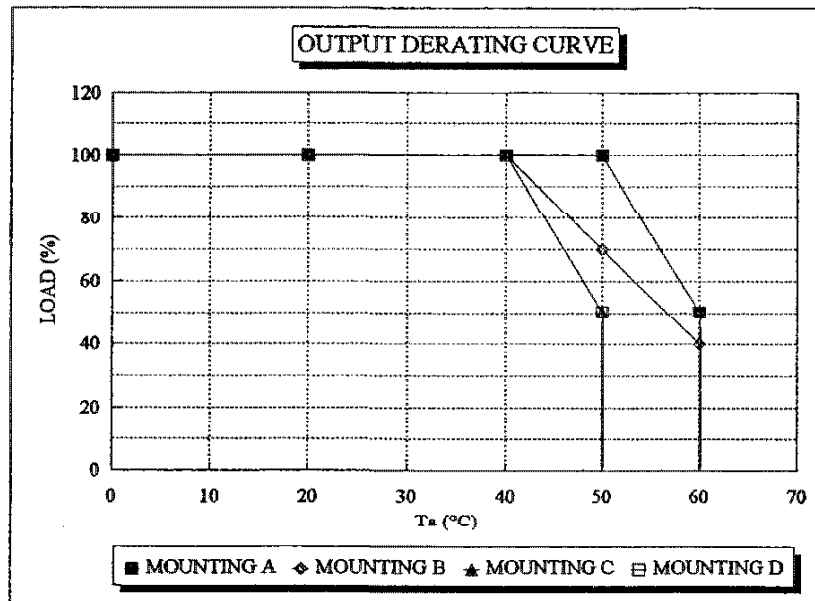


Standard Mounting

HK50A

* COOLING : CONVENTION COOLING

Ta (°C)	LOAD (%)			
	MOUNTING : A	MOUNTING : B	MOUNTING : C	MOUNTING : D
0	100	100	100	100
20	100	100	100	100
40	100	100	100	100
50	100	70	50	50
60	50	40	-	-

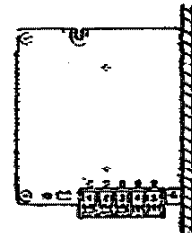
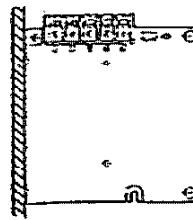
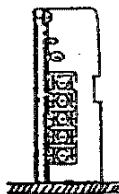


MOUNTING : A

MOUNTING : B

MOUNTING : C

MOUNTING : D



HK50A

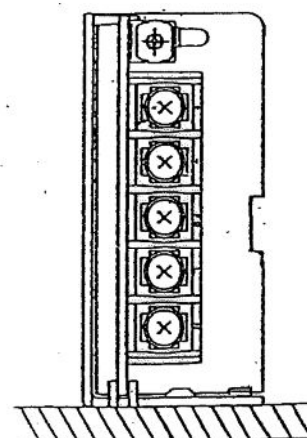
SPECIFICATIONS

PA779-01-03C

Item	Model	HK50A-3
1 Nominal Output Voltage	—	3.3V
2 Maximum Output Current	—	10.0A
3 Maximum Output Power	—	33.0W
4 Efficiency (Typ) (*1)	—	74%
5 Input Voltage Range (*2)	—	85-132VAC (47-440Hz) or 110-175VDC
6 Input Current (Typ) (*1)	—	0.8A at 100VAC
7 Inrush Current (Typ) (*3)	—	30A at 100VAC
8 Output Voltage Range	—	±10%
9 Maximum Ripple & Noise	—	120 mV
10 Maximum Line Regulation (*4)	—	20 mV
11 Maximum Load Regulation (*5)	—	40 mV
12 Over Current Protection (*6)	—	105% —
13 Over Voltage Protection (*7)	—	115% to 135%
14 Hold-Up Time (Typ) (*1)	—	20 ms
15 Series Operation	—	Possible
16 Operating Temperature (*8)	—	0°C to +50°C (100%), 60°C (50%)
17 Operating Humidity	—	30% to 90% RH
18 Storage Temperature	—	-30°C to +85°C
19 Storage Humidity	—	10% to 95% RH
20 Cooling	—	Convection Cooled
21 Temperature Coefficient (*9)	—	1% (Typ) at 0°C to +50°C
22 Withstand Voltage (*10)	—	Input - Chassis, Input - Output : 2kVAC (20mA) Output - Chassis : 500VAC (100mA) for 1min
23 Isolation Resistance	Ohm	More than 100M Ohm at 25°C and 70%RH Output-FG 500VDC
24 Vibration	—	10-55Hz (sweep 1 min) less than 19.6m/s ² X,Y,Z 1 h each
25 Shock	—	Less than 196.1m/s ²
26 Safety	—	Designed to meet UL60950-1, CSA C22.2 No.60950 & DENAN
27 Conducted Radio Noise	—	Designed to meet FCC class B, VCCI - B
28 Weight	—	280 g
29 Size (W.H.D.)	mm	31 . 68 . 119 (Refer to Outline Drawing)

* NOTES :

- 1 : At 100VAC and Maximum Output Power, Ta = 25°C
- 2 : For cases where conformance to various safety specs (UL, CSA) are required to be described as 100 - 120VAC, 50/60Hz on name plate.
- 3 : Typical value on cold start, Ta = 25°C.
- 4 : From 85 to 132VAC or 110 to 175VDC, constant load.
- 5 : From No Load to Full Load, constant input voltage.
- 6 : Current limiting with automatic recovery.
Avoid to operate over load or dead short for more than 30 seconds.
- 7 : OVP circuit will shut down output, manual reset.
- 8 : At standard mounting (vertical).
- 9 : Constant input voltage & load.
- 10 : Refer to instruction manual for testing procedure.



Standard Mounting

HK50A

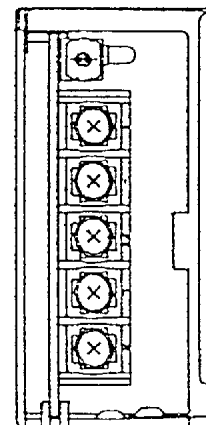
SPECIFICATIONS

PA779-01-04C

ITEMS			MODEL	HK50A-9
1	Nominal Output Voltage	-		9V
2	Maximum Output Current	-		5.6A
3	Maximum Output Power	-		50.4W
4	Efficiency (Typ)	(*1)	-	80%
5	Input Voltage Range	(*2)	-	85 - 132VAC(47 - 440Hz) or 110 - 175VDC
6	Input Current (Typ)	(*1)	-	1.2A at 100VAC
7	In-rush Current (Typ)	(*3)	-	30A at 100VAC
8	Output Voltage Range	-		±10%
9	Maximum Ripple & Noise	-		150mV
10	Maximum Line Regulation	(*4)	-	36mV
11	Maximum Load Regulation	(*5)	-	72mV
12	Over Current Protection	(*6)	-	105% -
13	Over Voltage Protection	(*7)	-	115% to 135%
14	Hold-Up Time (Typ)	(*1)	-	20ms
15	Series Operation	-		Possible
16	Operating Temperature	(*8)	-	0°C to +50°C(100%), 60°C(50%)
17	Operating Humidity	-		30% to 90% RH
18	Storage Temperature	-		-30°C to +85°C
19	Storage Humidity	-		10% to 95% RH
20	Cooling	-		Convection Cooled
21	Temperature Coefficient	(*9)	-	1%(Typ) at 0°C to +50°C
22	Withstand Voltage	(*10)	-	Input-Chassis , Input-Output : 2kVAC (20mA) Output-Chassis : 500VAC (100mA) for 1min.
23	Isolation Resistance	-		More than 100MΩ at 25°C and 70% RH Output-FG 500VDC
24	Vibration	-		10-55Hz (sweep 1 min) less than 19.6m/s ² X,Y,Z 1 h each
25	Shock	-		Less than 196.1m/s ²
26	Safety	-		Designed to meet UL60950-1, CSA C22.2 No.60950 & DENAN
27	Conducted Radio Noise	-		-
28	Weight	-		280g
29	Size (W.H.D)	mm		31×68×119 (Refer to Outline Drawing)

==NOTES==

- *1: At 100VAC & Maximum Output Power, Ta = 25 °C .
- *2: For cases where conformance to various safety specs (UL,CSA) are required to be described as 100-120VAC, 50/60Hz on name plate.
- *3: Typical value on cold start, Ta=25°C .
- *4: From 85 to 132VAC or 110 to 175VDC, constant load.
- *5: From No load to Full load, constant input voltage.
- *6: Current limiting with automatic recovery.
Avoid to operate over load or dead short for more than 30 seconds.
- *7: OVP circuit will shut down output, manual reset.
- *8: At standard mounting. (vertical)
- *9: Constant input voltage & load.
- *10: Refer to instruction manual for testing procedure.



Standard Mounting