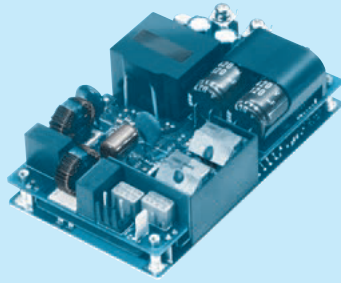


GHA500F

GH A 500 F -□□ -□

① ② ③ ④ ⑤ ⑥



Example recommended EMI/EMC filter
EAC-10-472



High voltage pulse noise type : EAP series
Low leakage current type : EAM series
* A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

- ① Series name
 - ② Single output
 - ③ Output wattage
 - ④ Universal input
 - ⑤ Output voltage
 - ⑥ Optional *6
- T3 : mounting hole M3
J1 : VH(J.S.T.)connector type
J3 : Horizontal input connector
VH(J.S.T.)connector type
R3 : with Subfeatures (5VAUX,12VAUX,Remote, Power good)
P : Pallarell Operation

Specification is changed at option, refer to Instruction manual.

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, please handle the unit with care
*Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL	GHA500F-12	GHA500F-15	GHA500F-24	GHA500F-30	GHA500F-48	GHA500F-56		
MAX OUTPUT WATTAGE[W]	500.4	501	504	501	504	504		
DC OUTPUT	Forced air	at 50°C	12V 41.7A	15V 33.4A	24V 21.0A	30V 16.7A	48V 10.5A	56V 9.0A
		at 40°C	12V 12.5A	15V 10.0A	24V 6.3A	30V 5.0A	48V 3.2A	56V 2.7A
	Convection	at 50°C	12V 9.2A	15V 7.4A	24V 4.6A	30V 3.7A	48V 2.3A	56V 1.9A
		at 0°C	12V 30.0A	15V 24.0A	24V 15.0A	30V 12.0A	48V 7.5A	56V 6.4A
conduction cooling	at 50°C	12V 16.7A	15V 13.4A	24V 8.4A	30V 6.7A	48V 4.2A	56V 3.6A	

SPECIFICATIONS

MODEL	GHA500F-12	GHA500F-15	GHA500F-24	GHA500F-30	GHA500F-48	GHA500F-56	
VOLTAGE[V]	AC90 - 264 1 φ (output derating is required at AC90V -115V *3)						
CURRENT[A]	ACIN 120V	5.4typ					
	ACIN 230V	2.9typ					
FREQUENCY[Hz]	50 / 60 (47 - 63)						
EFFICIENCY[%]	ACIN 120V	88typ					
	ACIN 230V	90typ					
POWER FACTOR (Io=100%)	ACIN 120V	0.95typ					
	ACIN 230V	0.90typ					
INRUSH CURRENT[A]	ACIN 120V	20typ (Io=100%) (At cold start) (Ta=25°C)					
	ACIN 230V	40typ (Io=100%) (At cold start) (Ta=25°C)					
LEAKAGE CURRENT[mA]	0.125/0.250max (ACIN 120V/240V 60Hz,Io=100%, According to IEC60601-1)						
VOLTAGE[V]	12	15	24	30	48	56	
CURRENT[A]	Forced air	41.7	33.4	21.0	16.7	10.5	9.0
	Convection	9.2	7.4	4.6	3.7	2.3	1.9
	conduction cooling	16.7	13.4	8.4	6.7	4.2	3.6
LINE REGULATION[mV] *4	48max	60max	96max	120max	192max	192max	
LOAD REGULATION[mV] *4	100max	120max	150max	180max	240max	240max	
RIPPLE[mVp-p] *1	0 to +50°C	240max	240max	240max	300max	300max	400max
	-20 - 0°C	320max	320max	320max	400max	400max	500max
RIPPLE NOISE[mVp-p] *1	0 to +50°C	300max	300max	300max	480max	480max	500max
	-20 - 0°C	360max	360max	360max	500max	500max	580max
TEMPERATURE REGULATION[mV]	0 to +50°C	120max	150max	240max	300max	480max	480max
	-20 to +50°C	150max	180max	290max	360max	600max	600max
DRIFT[mV] *2	48max	60max	96max	120max	192max	192max	
START-UP TIME[ms]	500typ (ACIN 120V, Io=100%)						
HOLD-UP TIME[ms]	16typ (ACIN 120V, Io=100%)						
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	10.80 to 13.20	13.50 to 16.50	21.60 to 26.40	27.00 to 31.50	43.20 to 52.80	52.00 to 56.00	
OUTPUT VOLTAGE SETTING[V]	12.00 to 12.48	15.00 to 15.30	24.00 to 24.96	30.00 to 31.20	48.00 to 49.92	55.00 to 56.00	
OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically						
OVERVOLTAGE PROTECTION[V]	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	34.50 to 42.00	55.20 to 67.20	60.00 to 69.00	
PROTECTION CIRCUIT AND OTHERS	AUX1 (12V1A)	Optional					
	AUX2 (5V1A)	Optional					
	REMOTE ON/OFF	Optional					
	PowerGood	Optional					
ISOLATION	INPUT-OUTPUT · RC · AUX *7	AC4,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 2MOPP					
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 1MOPP					
	OUTPUT · RC · AUX-FG *7	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)					
	OUTPUT-RC · AUX *7	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)					
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE	-20 to +80°C, 20 - 90%RH (Non condensing), 3,000m (10,000feet) max					
	STORAGE TEMP., HUMID. AND ALTITUDE	-30 to +80°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max					
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis					
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60950-1, ANSI/AAMI ES60601-1, C-UL(CSA60950-1, CAN/CSA60601-1), EN60950-1, EN60601-1 3rd					
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR11-B, CISPR22-B, EN55011-B, EN55022-B					
	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 (class A) *5					
OTHERS	CASE SIZE/WEIGHT	76.2 X 35 X 127mm [3.0 X 1.4 X 5.0 inches] (W X H X D) / 420g max					
	COOLING METHOD	Convection, Forced air (Require external fan), Conduction cooling					

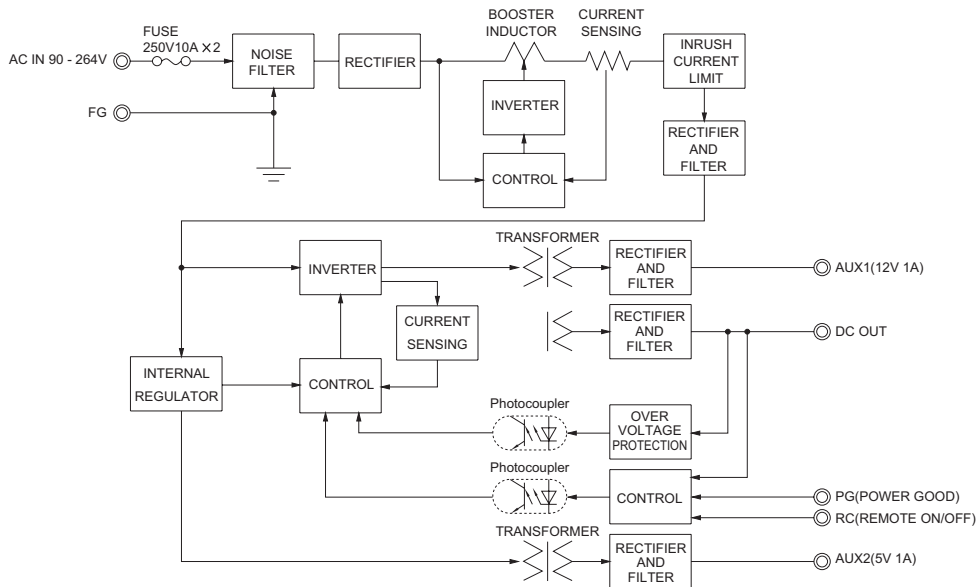
*1 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal.
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
*3 Derating is required.
*4 Please contact us about dynamic load and input response.

*5 Please contact us about another class.
*6 Specification is changed at option, refer to Instruction Manual.
*7 Applicable when AUX and remote control (optional) is added.
* To meet the specifications. Do not operate over-loaded condition.
* Sound noise may be generated by power supply in case of pulse load.
* Parallel operation is available with -P option. Refer to 5.1 on the instruction manual.
* Forced air cooling is required to output up to MAX OUTPUT WATTAGE.

Features

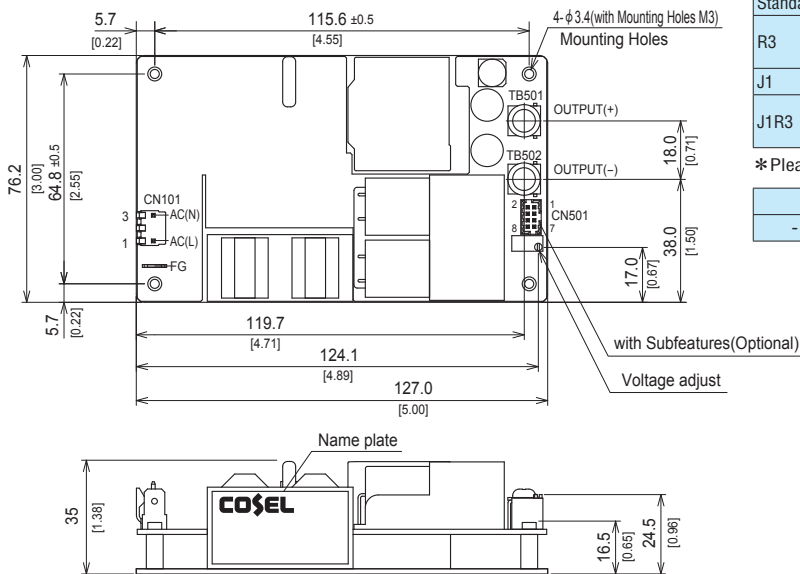
- **Wattage 500W max**
- **High Power density:24.1W/inch³**
- **High efficiency 92% typ (Input Voltage 230V,Output Voltage 24V)**
- **Conduction cooling**
- **3" × 5" standard footprint**
- **Fits 1U applications**
- **Industrial and Medical safety approvals**
- **Low leakage current**
- **With Remote On/Off (Optional)**
- **With AUX1 (12V), AUX2 (5V) (Optional)**
- **No minimum load is required**

Block diagram



External view

*External size of option J3 is different from standard model and refer to 5 Option and Others of instruction manual for details.



- ※ Tolerance ± 1 [± 0.04]
- ※ Weight : 420g max
- ※ There is a total of four attachment holes.
- ※ Base Plate : Aluminum
- ※ Dimensions in mm, []=inches
- ※ Screw tightening torque : (TB501, 502) : 1.5N · m max
- ※ Mounting torque : 0.6N · m max
- ※ Avoid contact between TB501 and 502 wiring with mounting parts.
- ※ Option : -J1 : (J.S.T) connector type. Refer to Instruction Manual 5.

Connector		Mating connector	Terminal	Mfr
Standard	CN101	A-41671-A03A197-2	08-50-0105 08-65-0114	Molex *
R3	CN101	087831-0820	51110-0851 50394-8051	
J1	CN101	B2P3-VH	VHR-3N	J.S.T.
J1R3	CN101	B8B-PHDSS	PHDR-08VS SPHD-002T-P0.5	

*Please note the pin position No.1 is different from Molex.

FG	Mating connector	Terminal	Mfr
-	250 Series	-	170603-2 Tyco Electronics

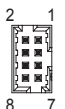
<Pin Assignments>

<CN101>

Pin No.	Input
1	AC(L)
2	
3	AC(N)

<CN501(Optional)>

Pin No.	Function
1	AUX1 : AUX1 (12V1A)
2	AUX1G: AUX1 (GND)
3	RC : REMOTE ON/OFF
4	RCG : REMOTE ON/OFF (GND)
5	PG : Power good
6	PGG : Power good (GND)
7	AUX2 : AUX2 (5V1A)
8	AUX2G: AUX2 (GND)



CN501