

FEATURES

- ◆ RoHS compliant
- ◆ Efficiency up to 86%
- ◆ Power density up to 0.42W / cm³
- ◆ Dual-use wide input voltage 85-265 VAC, 50/60Hz, 110VDC-370VDC
- ◆ Universal voltage AC/DC
- ◆ Output short-circuit protection
- ◆ No heatsink required
- ◆ Excellent over-current protection
- ◆ Industry product design technology
- ◆ Excellent over-temperature protection
- ◆ Small form factor and low weight
- ◆ High efficiency, high density models
- ◆ Ultra-small leakage current
- ◆ Fully encapsulated with toroidal magnetics
- ◆ NO external components required
- ◆ Low loss, green power
- ◆ Design for high reliability, long lifetime

MODEL SELECTION

GA^①-XX^②-XW^③

① AC/DC Product Series (85-265VAC)

② Output Voltage

③ Rated Power



SELECTION GUIDE

Order code	Package size (MM)	Output Power (W)	Output Current (MA)	Ripple&Noise ¹ (MV P-P)	Output Voltage (V)	Efficiency (%)
GA03-2W64	36.5*18.6*17	2.64	800	100	3.3	63
GA05-3W	36.5*18.6*17	3	600	100	5	70
GA09-3W	36.5*18.6*17	3	330	100	9	72
GA12-3W	36.5*18.6*17	3	250	100	12	74
GA15-3W	36.5*18.6*17	3	200	100	15	76
GA24-3W	36.5*18.6*17	3	125	100	24	78
GA03-4W2	39*25*22	4.2	125	100	3.3	66
GA05-5W	39*25*22	5	1000	100	5	72
GA09-5W	39*25*22	5	550	100	9	74
GA12-5W	39*25*22	5	420	100	12	76
GA15-5W	39*25*22	5	333	100	15	76
GA24-5W	39*25*22	5	230	100	24	78
GA03-6W6	53.5*28.5*19.0	6.6	2000	100	3.3	70
GA05-10W	53.5*28.5*19.0	10	2000	100	5	74
GA09-10W	53.5*28.5*19.0	10	1100	100	9	76
GA12-10W	53.5*28.5*19.0	10	900	100	12	76
GA15-10W	53.5*28.5*19.0	10	700	100	15	78
GA24-10W	53.5*28.5*19.0	10	450	100	24	80

INPUT CHARACTERISTICS

Parameter	Conditions
Input voltage range	110V~370VDC(85~264VAC)
Input current	400mA(TYP)
Normal External Fuse	0.5A/250V

OUTPUT CHARACTERISTICS

Parameter	Conditions
Short-circuit protection ²	Continuous/automatic resume
Output Voltage Regulated	±2%
Line Regulation	±0.5%(typ)
Load Regulation(10%~100%)	±1.0%(typ)
Output Ripple and Noise(p-p)	100mV(typ)(20MHz Bandwidth)
Over temperature protection	150°C(max)
Output over-voltage protection	≥1.1 times

Note: ripple and noise measure method test(details next page)

1. See ripple & noise test method.

2. Supply voltage must be disconnected at the end of the short circuit duration.

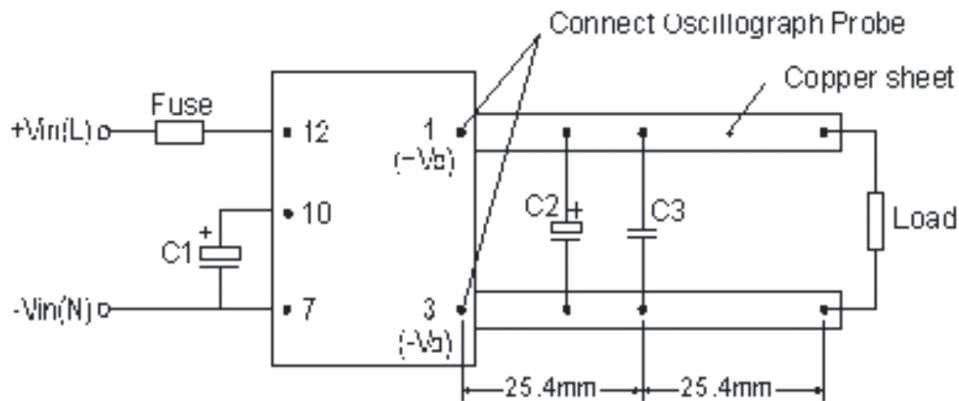
All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

GENERAL CHARACTERISTICS

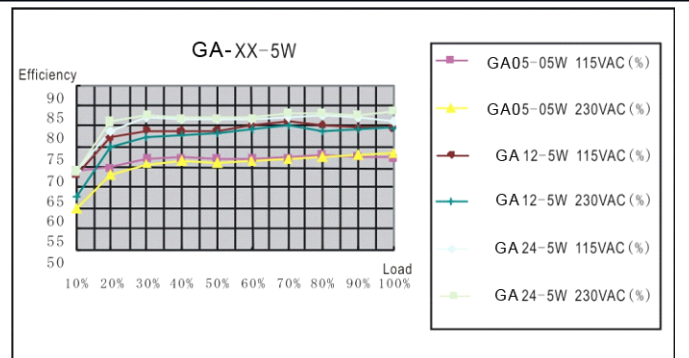
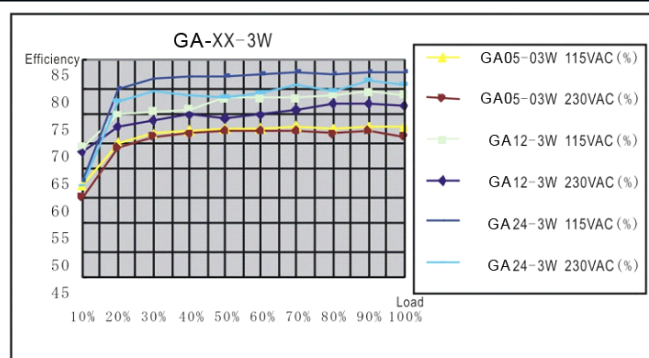
Parameter		Conditions
Temperature characteristics	Operating	-25°C~+70°C
	Power derating(Above 55° C)	2%/°C
	Storage	-40°C~+105°C
	Case Temperature	+95°C max
Humidity		90%(max)
Power-off protection time		50ms(typ230Vac)
Temperature coefficient		0.02%/°C
Switching Frequency		60KHz(typ)
Efficiency		76%(typ)
Insulation	03W	3000VAC
	05W	3000VAC
	10W	3000VAC
Level of security		CLASSⅡ
Case material		UL94V-0
MTBF		>200000h@25°C

MEASURE METHOD CHARACTERISTICS

Measure method characteristics



ADTM/XX-XW TYPICAL EFFICIENCY CURVE



TYPICAL APPLICATION

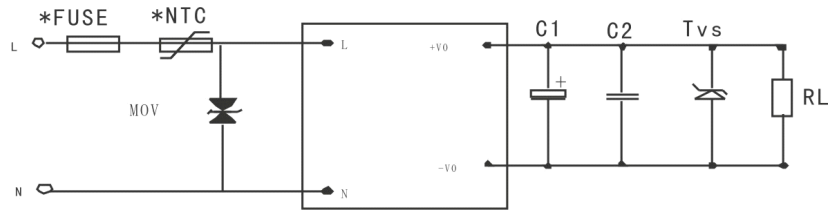


Chart 1

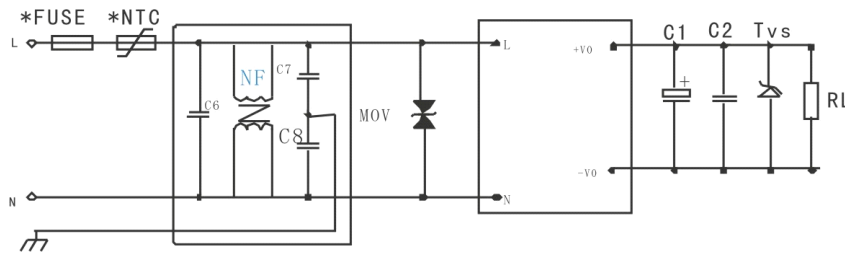
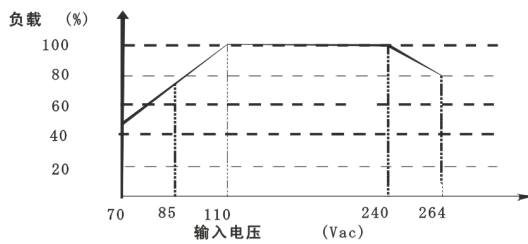
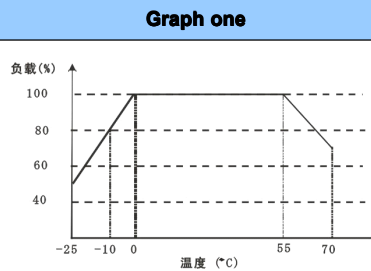


Chart 2 GAXX-XW EMC Application Graph

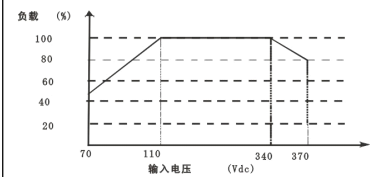
INPUT VOLTAGE VS LOAD



TEMPERATURE VS LOAD



Graph two



EXTERNAL CAPACITORS TYPICAL VALUE

Model	C01	C02	TVS TUBE	Model	C01	Model	C01
GA03-2W64	150	0.1	P4KE6.8A	GA03-4W2	47	GA03-6W6	150
GA05-3W	150	0.1	P4KE6.8A	GA05-5W	47	GA05-10W	150
GA09-3W	120	0.1	P4KE12A	GA09-5W	33	GA09-10W	120
GA12-3W	120	0.1	P4KE20A	GA12-5W	33	GA12-10W	120
GA15-3W	120	0.1	P4KE20A	GA15-5W	33	GA15-10W	120
GA24-3W	68	0.1	P4KE30A	GA24-5W	10	GA24-10W	68

NOTES

Output filtering capacitors C2 is electrolytic capacitors, recommended to use high frequency and low impedance electrolytic capacitors. Capacity and the flow of current please refer to the manufacturer's technical specifications. Voltage derating of capacitor should be 80% or above. C3 is ceramic capacitor, it is used to filter high frequency noise. TVS is a recommended component to protect post-circuits (when converter fails).

1. If EMC performance is required, recommended to add "EMC filter" at the input end.

C4: X capacitor, recommended parameter: 0.1 μ F/275V

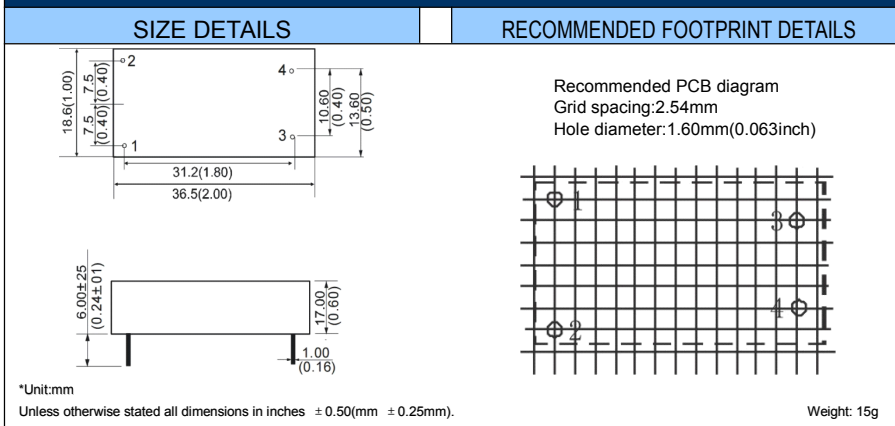
Y capacitor, recommended parameter: 220pF/2000V

NF: common-mode choke, recommended parameter: 10mH-30mH

2. MOV: pressure sensitive resistance, model 471KD05, is used to protect converter in lightning strike surge.

PACKAGE SPECIFICATIONS

GA-XX-3W DIMENSIONS



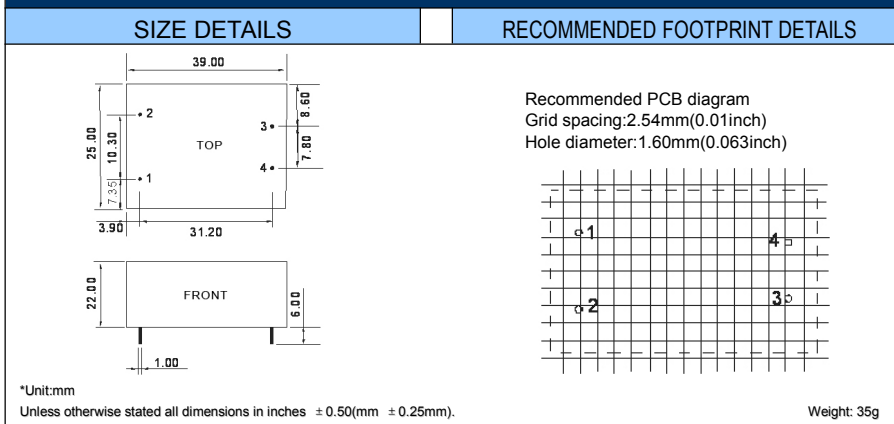
PIN CONNECTIONS

OUTPUT VARIANTS

PIN CONNECTIONS-4 PIN DIP

Pin	Function
1	N
2	L
3	+V0
4	-V0

GA-XX-5W DIMENSIONS



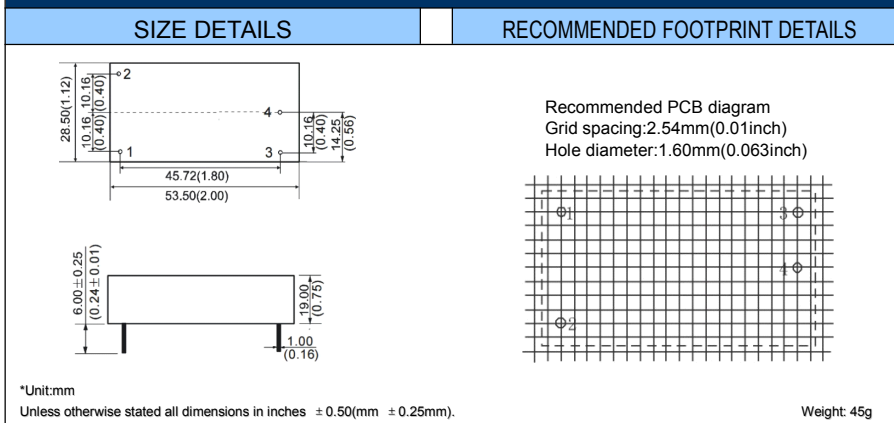
PIN CONNECTIONS

OUTPUT VARIANTS

PIN CONNECTIONS-4 PIN DIP

Pin	Function
1	N
2	L
3	+V0
4	-V0

GA-XX-10W DIMENSIONS



PIN CONNECTIONS

OUTPUT VARIANTS

PIN CONNECTIONS-4 PIN DIP

Pin	Function
1	N
2	L
3	+V0
4	-V0

RoHS COMPLIANT INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300° C for 10 seconds. The pin termination finish on the SIP package type is Tin Plate, Hot Dipped over Matte Tin with Nickel Preplate. The DIP types are Matte Tin over Nickel Preplate. Both types in this series are backward compatible with Sn/Pb soldering systems.

REACH COMPLIANT INFORMATION

This series has proven that this product does not contain harmful chemicals, it also has harmful chemical substances through the registration, inspection and approval.