

3Watt,Single AC-DC Converter



FEATURES:

- AC/DC Power Module
- Universal Input 90~264VAC
- High Efficiency Up To79%
- Short Circuit Protection
- 2 Years Warranty



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

Part Number	Input Voltage	Output Volatge	Output Current	Efficiency
	Vac	Vdc	mA	%
GA003-S03-01	90~264	3.3	800	72
GA003-S05-01	90~264	5	600	75
GA003-S12-01	90~264	12	250	78
GA003-S15-01	90~264	15	200	78
GA003-S24-01	90~264	24	125	79

Input Specifications

Parameters	Conditions		Min	Typ	Max	Units
Rated input voltage	Io nom		100		240	VAC
Input voltage range	Io	AC in	90		264	VAC
		DC in	120		370	VDC
Line frequency	Vi nom,Io nom		47	50/60	63	Hz
Inrush current	Io nom	Vi:115VAC			10	A
		Vi:230VAC			18	A

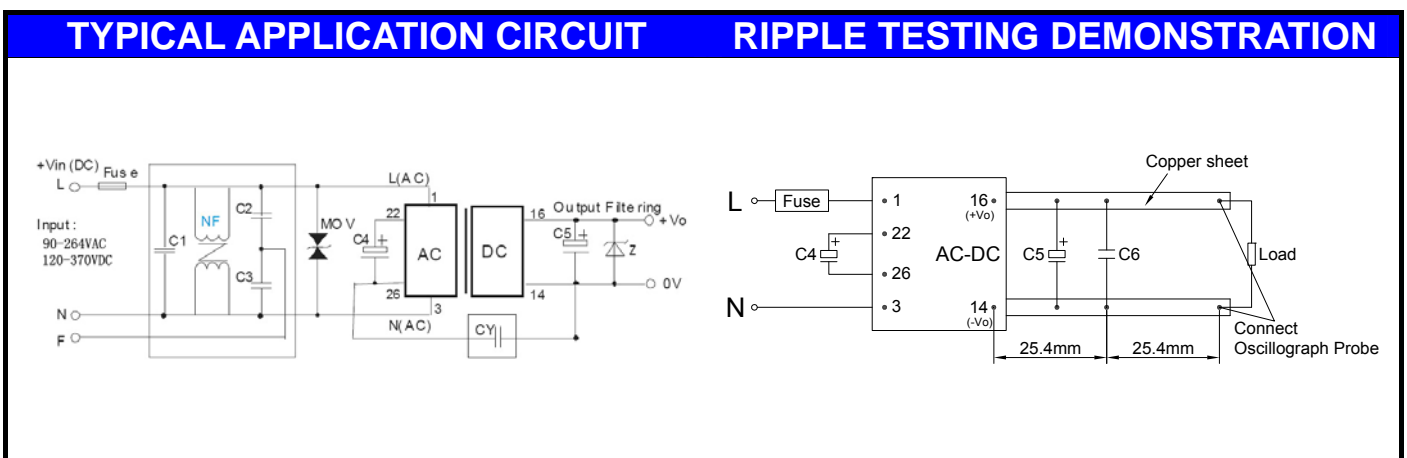
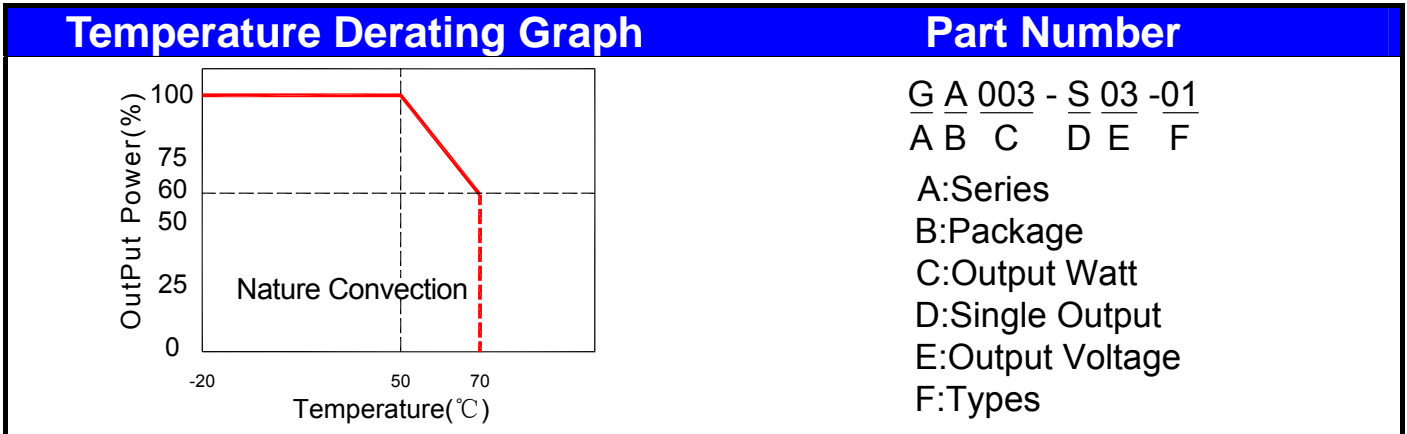
Output Specifications

Parameters	Conditions		Min	Typ	Max	Units
voltage accuracy	Vi nom,Io nom				±5	%
Minimum load	Vi nom		0			%
Line regulation	Io nom,Vi min...Vi max				±1	%
Load regulation	Vi nom,	Single output models			±2	%
Transient recovery time	Vi nom,Io nom=I _o →0.5I _o nom			300		uS
Temperature coefficient	Vi nom,Io nom				±0.02	%/°C
Ripple & noise	Vi nom,Io nom, BW=20MHz				150	mVp-p
Efficiency	Vi nom,Io nom,Po/Pi		Up to 79%,See models list			

General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Switching frequency	Vi nom,Io nom		100	150	KHz
Isolation voltage	Input / output	2500			VAC
Isolation resistance	Input / output,@500Vdc	100			MΩ
Ambient temperature	Operating at Vi nom,Io nom	-20		+70	°C
Case temperature	Operating at Vi nom,Io nom			+85	°C
Derating	Vi nom,Io nom +51 to +71°C			2	%/°C
Storage temperature	Nom operational	-40		+100	°C
Relative humidity	Vi nom,Io nom			95	% RH
Dimension	L35.05 x W25.40 x H17.78				
Cooling	Free air convection				
Case material	DAP UL 94V-0				

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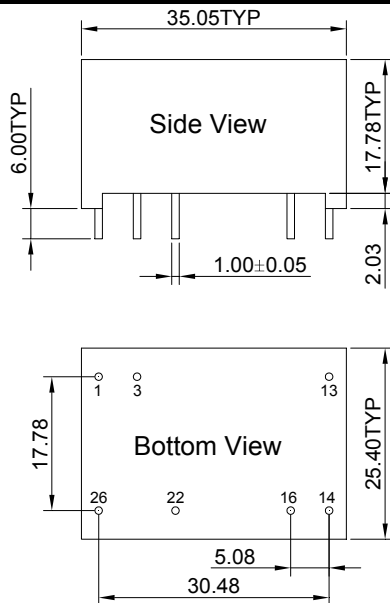


TYPICAL APPLICATION GUIDE

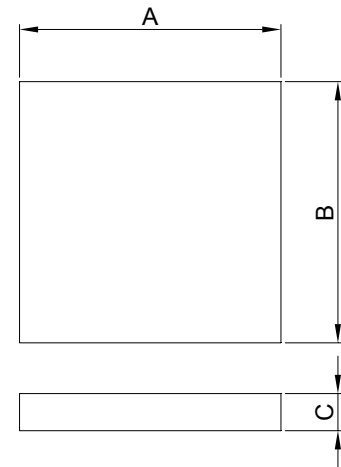
AC/DC application

1. Recommended circuit: Typical application circuit is shown as Figure 1. If EMC performance is not required, Circuit in frame of dashed line can be removed.
2. Clearance and creepage: for application Environment of Class I and Class II devices, users should guarantee there is clearance no less than 2mm and creepage no less than 2.5mm between L and N before the fuse.
3. Fuse, 1A/250V or 10Ω/2W wire-wound resistor.
4. Input filtering capacitor. Terminals 22 and 26 are internal rectification and filtering terminals. To protect the models further, it is recommended to connect an electrolytic capacitor C4 (it is recommended to be 4.7uF/400V). If operation voltage of the module is between 160~264VAC, C4 can be removed.
5. Input EMI filtering network.(Refer to Figure1) Combination of NF, C1, C2 and C3 form input EMI filtering network.
 MOV: pressure sensitive resistor, model 471KD07
 C1: X capacitor, recommended parameter 0.01uF/275V
 CY: 102K/400V (Y1 CAP)
 NF: common model choke, UU9.8 or ring core, inductance is about 10mH, wire diameter 0.22mm.
6. Output filtering capacitor C5 is electrolytic capacitor. To make sure the product work at perfect operation status with full loading external capacitor is necessary and it is recommended to use high frequency low resistance electrolytic capacitor. The isolation voltage derating of capacitor is larger than 80%. Please refer to manufacturer's datasheet for capacitance and current parameters.
7. "Z" is a TVS to protect post circuits (when module works incorrectly), is recommended.
8. Refer to RIPPLE TESTING DEMONSTRATION,C6 is recommended to be 0.1uF.

Markings and dimensions



Packaging



Size(mm)		
A	B	C
210.00	210.00	30.00

UNIT: mm Unless otherwise specified, all tolerances are ± 0.50

PIN Connection

PIN	1	3	13	14	16	22	26
Function	L	N	NC	-Vout	+Vout	+Vin(DC)	-Vin(DC)

APPLICATION NOTE

1. Please make sure all terminals are connected in accordance with instruction manual.
2. The module is a sort of electronic components, installing and using should be implemented by professionals.
3. This series of power module is a sort of first level power supply, safety standard must be strictly abided in application.
4. Make sure the input of module is connected with a fuse, to meet the requirement of safety standard. The parameters of fuse should be appropriate.
5. The input and output of module are dangerous energies, and it must be guaranteed that end users will not be able to touch them.
6. Application circuits and parameters are for reference only. They should be confirmed by experiment before finish a circuit design.
7. You may not be noticed for amendments and updated of this document. Please pay attention on new application in actual application.
8. This product can not be used in parallel and can not support hot-plug.