



15ACO_3 series

15W - Single Output AC-DC Converter - Universal input - Isolated & Regulated

AC-DC Converter 15 Watt

- ⊕ 85-264 VAC and 100 - 370VDC Input voltage range
- ⊕ 2.5×1.8inch high power density
- ⊕ Operating ambient temp. range -25°C to +70°C
- ⊕ Regulated output, Low ripple & noise
- ⊕ Output short circuit, overcurrent & overvoltage protection
- ⊕ High efficiency, high reliability
- ⊕ EMI performance meets CISPR32 / EN55032 CLASS B

The 15ACO_3 is one of GAPTEC's compact size power converter, it features universal AC input and at the same time accepts DC input voltage, low power consumption, high efficiency, high reliability, reinforced isolation. The converters meet IEC/EN61000-4, CISPR32/EN55032, UL62368, EN62368, UL60335, EN60335 standards. The converters are widely used in industrial, office and civil applications.



Common specifications					
Item	Test conditions	Min	Typ	Max	Units
Isolation (input-output)	Electric Strength Test for 1min. (leakage current<5mA)	3000			VAC
Short circuit protection	Hiccup, continuous, self-recovery				
Operating temperature		-25		+70	°C
Storage temperature		-25		+85	°C
Storage humidity				90	%RH
Altitude				2000	m
Soldering Temperature	• Wave-soldering • Manual-welding	260 ± 5 °C; time: 5 -10s 360 ±10 °C; time: 3 - 5s			
Power derating	• -25°C to -10 °C • +50 °C to +70 °C • 85VAC-100VAC	1 3 1.67			%/°C %/°C %/VAC
Safety standard	IEC62368/EN62368/UL62368/UL60335/EN60335				
Safety certification	IEC62368/EN62368(Pending)				
Safety class	CLASS I I				
MTBF	MIL-HDBK-217F@25°C	>300,000 h			
Dimensions	63.50 x 45.70 x 19.00 mm				
Weight	36g TYP.				
Cooling Method	Free air convection				

Output specifications					
Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy	• 3.3V Output • Other Outputs		±3.0 ±2.0		% %
Line regulation	Full load		±0.5		%
Load regulation	0% - 100% load		±1.		%
Ripple & noise*	20MHz bandwidth (peak-to-peak value)		50	100	mV
Temperature coefficient				±0.02	%/°C
Stand-by power consumption				0.5	W
Over-voltage protection**	3.3/5V Output 9V Output 12/15V Output 24V Output		≤7.5V ≤15V ≤20V ≤30V		
Over-current protection				130% - 300% I _o	self-recovery
Minimum load			0		%
Starting time	85VAC-264VAC input, I _o =100%		2000		ms
Hold-up time	115VAC input, I _o =100% 230VAC input, I _o =100%		10 60		ms ms

* The "Tip and barrel method" is used for Ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.

** Output voltage clamp or hiccup

Input specifications					
Item	Test conditions	Min	Typ	Max	Units
Input Voltage Range	• AC input • DC input	85 100		264 370	VAC VDC
Input frequency		47		60	Hz
Input current	• 115VAC • 230VAC			0.37 0.22	A A
Inrush current	• 115VAC • 230VAC		20 30		A A
Leakage current	264VAC	0.25mA RMS max.			
Hot plug	Unavailable				

Example: 15ACO_24S3

15 = 15Watt; AC = AC-DC; O = series; 24 = 24 Vout;
S = single output; 3 = 3kVAC isolation

Note:

- If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta = 25 °C, humidity <75% with nominal input voltage and rated output load;
- All index testing methods in this datasheet are based on our Company's corporate standards;
- The performance parameters of the product models listed in this manual are as above, but some parameters of non-standard model products may exceed the requirements mentioned above. Please contact our technicians directly for specific information;
- We can provide product customization service;
- Products are related to laws and regulations: see "Features" and "EMC";
- Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

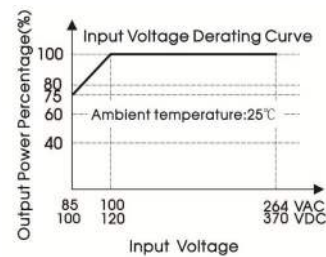
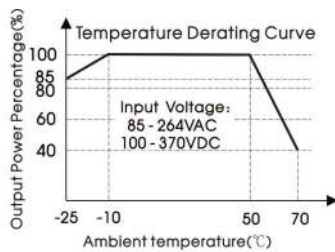
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EMC specifications				
Emissions	CE	CISPR32/EN55032	CLASS B	
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Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV	perf. Criteria B
Immunity	RS	EC/EN61000-4-3	10V/m	perf. Criteria A
Immunity	EFT	IEC/EN61000-4-4	±2KV	perf. Criteria B
Immunity	Surge	IEC/EN61000-4-5	line to line ±1KV	perf. Criteria B
Immunity	CS	IEC/EN61000-4-6	10Vr.m.s	perf. Criteria A
Immunity	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	0%,70%	perf. Criteria B

Product Selection Guide					
Approval	Model	Output Power [W]	Nominal Output Voltage and Current [Vo/Io]	Efficiency at 220VAC [% , typ]	Max. Capacitive Load (µF)
CE (Pending)	15ACO_03S3	9	3.3V/3000mA	72	20000
CE (Pending)	15ACO_05S3	14	5V/2800mA	76	10000
CE (Pending)	15ACO_09S3	15	9V/1600mA	78	5800
CE (Pending)	15ACO_12S3	15	12V/1250mA	81	5200
CE (Pending)	15ACO_15S3	15	15V/1000mA	81	4500

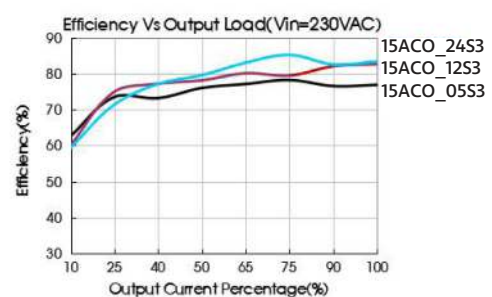
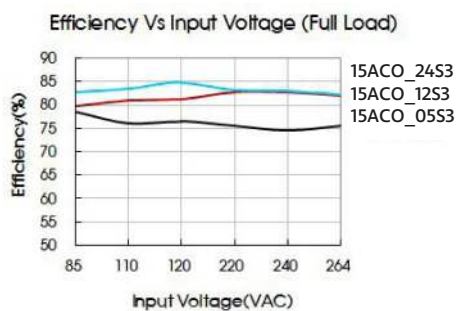
Product Characteristic Curve



Note:

- ① With an AC input voltage between 85-100VAC and a DC input between 100-120VDC the output power must be derated as per temperature derating curves;
- ② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

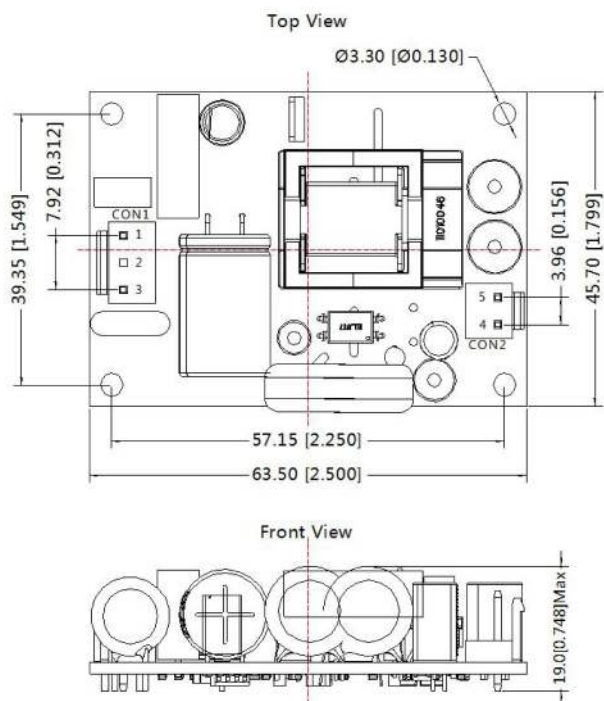
Efficiency



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Dimensions and Recommended Layout



Note:

Unit: mm[inch]

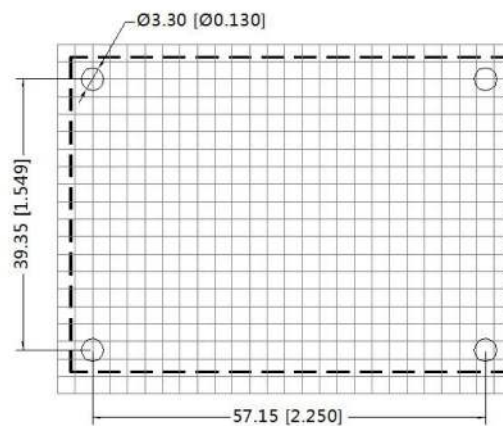
General tolerances: ± 0.50 [± 0.020]

In CON1 model: VH-3A, Recommend terminal: VH-3Y

Out CON2 model: VH-2A, Recommend terminal: VH-2Y

Mounting hole screwing torque: Max 0.4 N·m

THIRD ANGLE PROJECTION



Note: Grid 2.54*2.54mm

Pin-Out			
Pin	Function	Connector	Terminal
1	AC(L)	VH-3A or B2P3-VH or the same Spec.	VH-3Y or VHR-3N or the same Spec.
2	NoPin		
3	AC(N)		
4	-Vo	VH-2A or B2P-VH or the same Spec.	VH-2Y or VHR-2N or the same Spec.
5	+Vo		