

5W, AC/DC Power Converter

SAP05H

SUMMIT
ELECTRONICS



Introduction

SAP05H series are compact size AC/DC power converters, featuring universal input voltage range, low stand by power consumption, high efficiency. Designed for high reliability industrial applications, these converters are encapsulated to protect from dust and moisture. They are certified to IEC/EN/UL62368-1, EN60335-1, EN61558-1, UKCA and EMC performance meets CISPR32, EN55032 Class B without support from any external components, ideally suitable for industrial, and critical commercial applications.

Features

- Rated power: 5W Max
- Universal input: 85~305Vac 47~63Hz
- Regulated single output
- Isolation voltage 4000VAC
- Typical efficiency 74 ... 81%
- Energy saving, standby power only about 0.1W
- Operating temperature range: -40~+85°C
- RoHS compliance
- No external components required for operating
- Over voltage, over current and short circuit protection
- Certified to IEC/EN/UL62368-1, OVC II, EN60335-1, EN61558-1, UKCA, CISPR32, EN55032 Class B with NO external circuits
- 3 year warranty

5W, AC/DC Power Converter

SAP05H



Part numbers

Model Number	Input Voltage (VAC)	Output Voltage (VDC)	Output Current (mA) Max	Efficiency (%) Typ.	Capacitive Load (uF) Max.
SAP05H033	85~305VAC 100~430VDC	3.3	1250	74	4000
SAP05H050		5	1000	78	3000
SAP05H090		9	555	79	1200
SAP05H120		12	416	80	1200
SAP05H150		15	333	80	680
SAP05H240		24	208	81	220

* Only typical models are listed, other models may be available, upon request.

5W, AC/DC Power Converter

SAP05H



Electrical characteristics

Unless otherwise indicated, specifications are measured at TA=25°C, humidity <75%, nominal input voltage and rated output load.

Parameter	Condition	Min.	Type	Max.	Unit	Notes
Input Voltage Range	AC in	85	-	305	VAC	
	DC in	100		430	VDC	
Input Frequency		47	-	63	Hz	
Nominal Input Voltage		100	-	277	VAC	
Input current	115VAC 230VAC	-	-	0.13 0.07	A	
Inrush current Cold start	115VAC 230VAC	-	35 70	-	A	
Leakage current	230VAC, 50Hz	-	0.25	0.6	mA RMS	
Output voltage accuracy		-	±3	-	%	
Line regulation Full Load		-	±0.5	-	%	
Load regulation IOUT=0%~100% of IOUT, rated		-	±1.0	-	%	
Ripple and noise 20MHz band- width, peak to peak		-	150	200	mV	
Temperature coefficient		-	±0.03	-	%/°C	
Standby power consumption		-	0.10	-	W	
Hold up time Full load	115VAC	-	10	-	mS	
	230VAC		50			

5W, AC/DC Power Converter

SAP05H



Over load protection		115	-	190	% I _{OUT} , rated	
Over voltage protection	V _{OUT} =3.3, 5V V _{OUT} =9, 12V V _{OUT} =15V V _{OUT} =24V	-	-	8.5 20 24 34	VDC	
Short circuit protection		Hiccup mode, automatic recovery				
Internal fuse		2A, 300V, slow blow				
Minimum load		No minimum load is required				

* Ripple and noise measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor

5W, AC/DC Power Converter

SAP05H



General Specifications

Parameters	Condition	Min.	Typ.	Max.	Unit
Isolation voltage Tested for 1 minute	I/P to O/P	4000	-	-	VAC
Isolation resistance 500VDC, 25°C, 70%RH	I/P to O/P	100	-	-	M Ohm
Switching frequency		-	65	-	KHz
Operating temperature range	See "Derating Curve"	-40	-	85	°C
Storage temperature		-40	-	105	°C
Storage humidity		10	-	95	%RH
Maximum case temperature		-	-	95	°C
Soldering temperature	5 seconds	-	260	-	°C
Case material		Black plastic UL94-V0			
Cooling method		Free air convection			
Class II power		Yes, no FG			
Vibration		10Hz to 55Hz, 5G, 30 minutes along X, Y and Z axis			
MTBF	MIL-HDBK-217F	> 1,000,000 Hours, 25°C			
Design based on standards		RoHS & REACH directives, IEC/EN/UL 62368-1, OVC II, EN 60335-1, EN 61558-1, UKCA			

5W, AC/DC Power Converter

SAP05H



Safety certifications		IEC/EN/UL 62368-1, EN 60335-1, EN 61558-1, UKCA
EMC	CE	CISPR32, EN55032 Class B with "NO External Circuit"
	ESD	IEC/EN61000-4-2, Contact $\pm 8\text{kV}$, Air $\pm 15\text{kV}$, Criteria B
	RS	IEC/EN61000-4-3, 10V/m , Criteria A
	EFT	IEC/EN61000-4-4, $\pm 2\text{kV}$, Criteria B
	Surge	IEC/EN61000-4-5, Line to Line $\pm 2\text{kV}$, Criteria B
	CS	IEC/EN61000-4-6, 10Vrms , Criteria A
Size, and Weight		45.7x25.4x21.5mm, 37g
Packing		350pcs/carton, size: 460x350x285mm, 14Kg G.W.

5W, AC/DC Power Converter

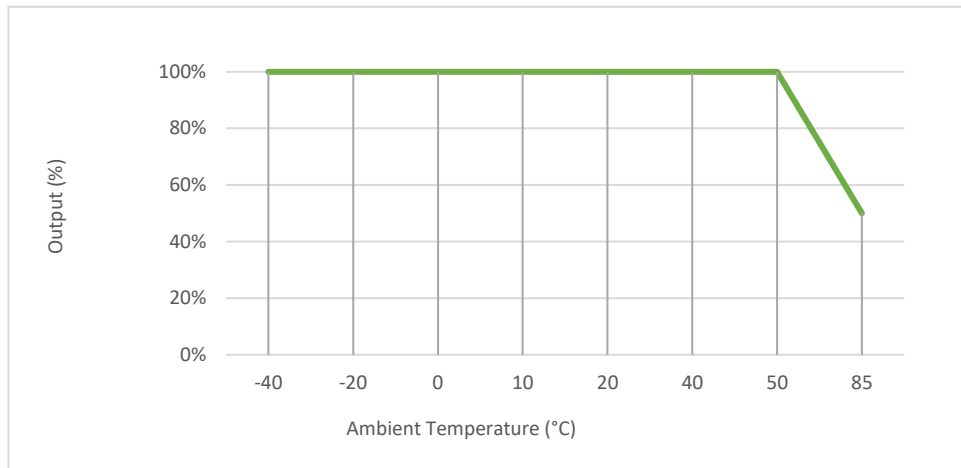
SAP05H



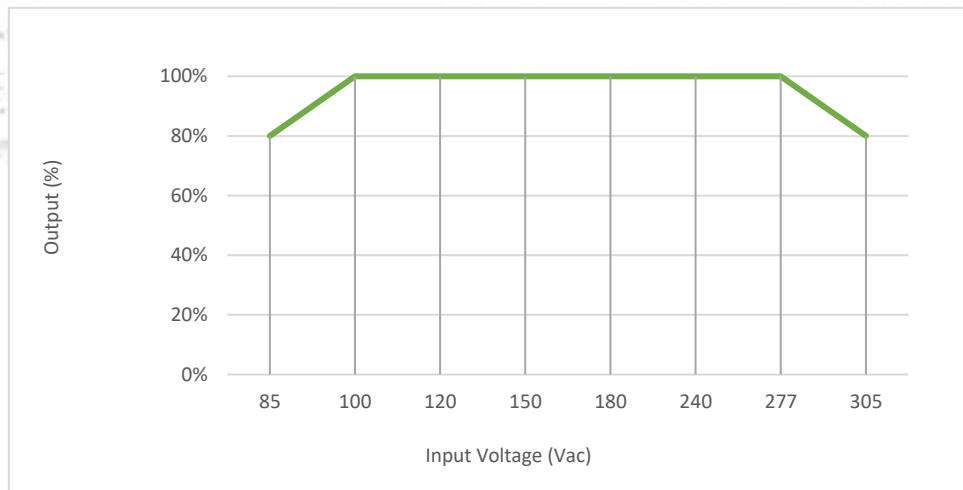
Characteristics Curves

Derating Curve

Output vs Ambient Temperature



Output vs Input voltage

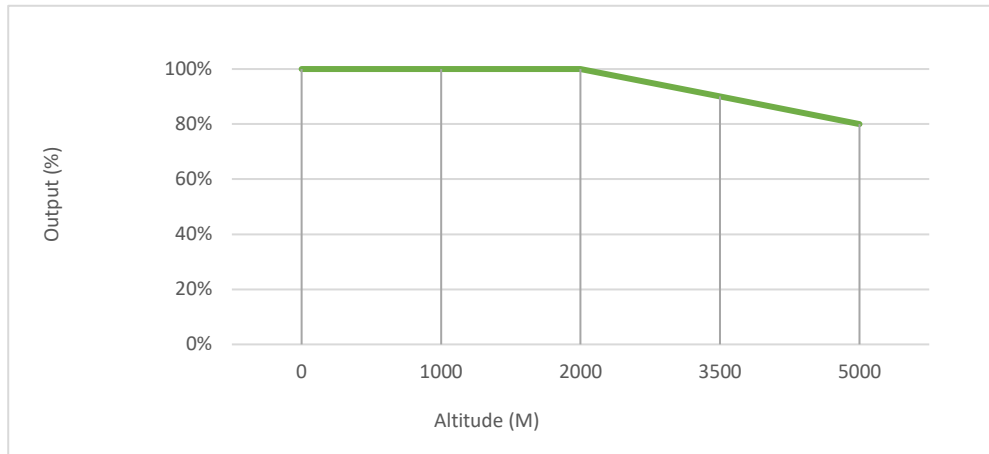


5W, AC/DC Power Converter

SAP05H

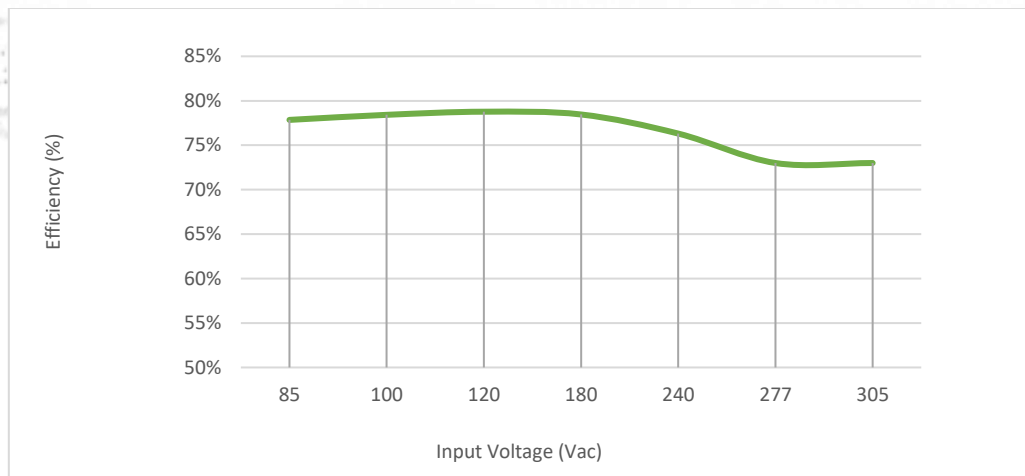


Output vs Altitude



Efficiency Curves

Efficiency vs Input Voltage



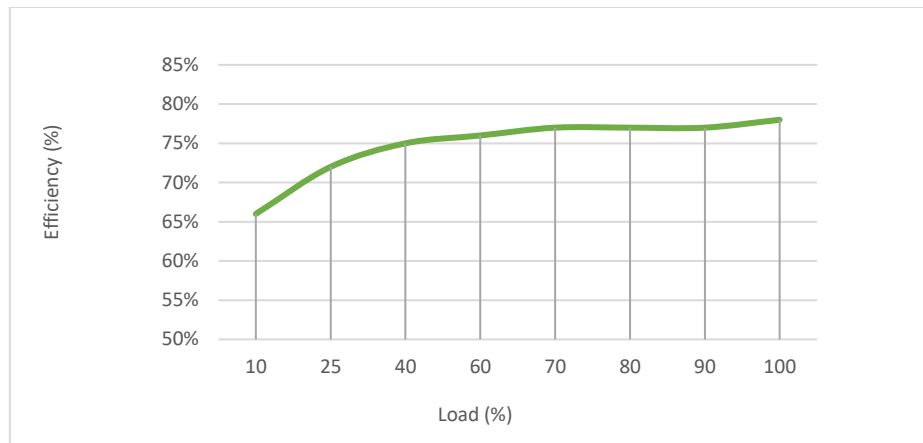
SAP05H050, Full load

5W, AC/DC Power Converter

SAP05H



Efficiency vs load



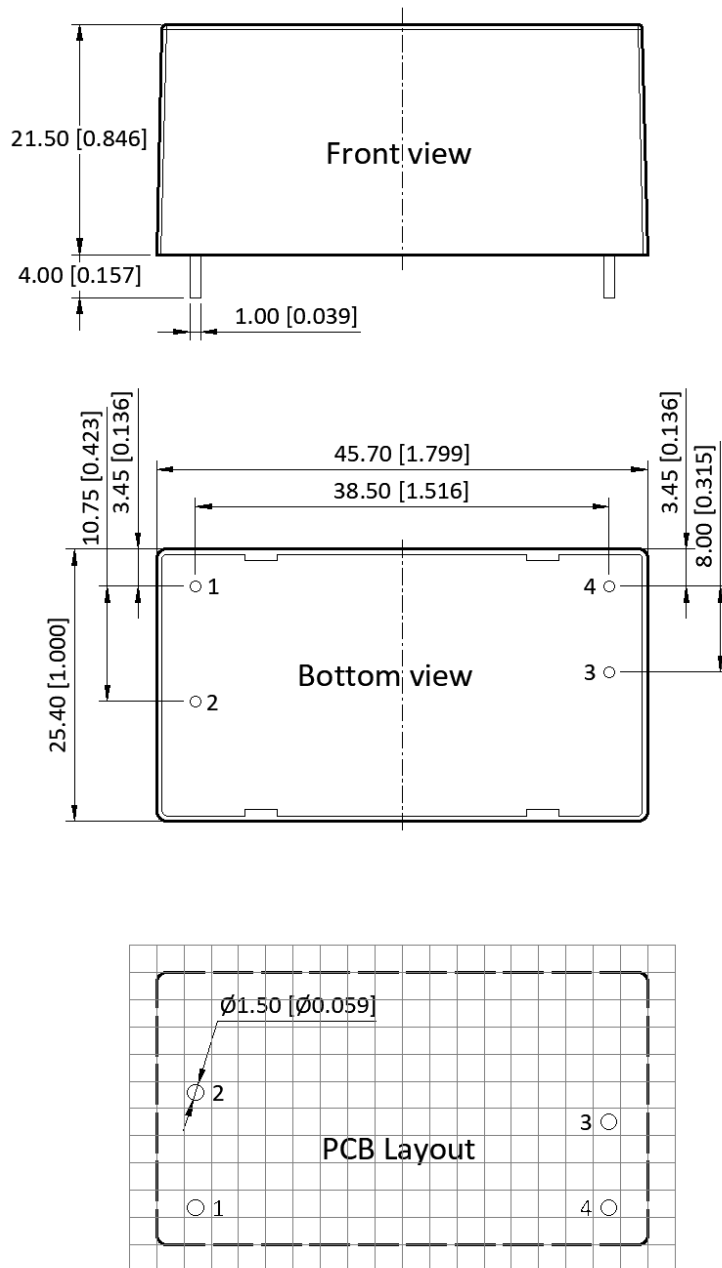
SAP05H050, 230VAC

5W, AC/DC Power Converter

SAP05H



Mechanical Specifications



Pin Definition

Pin #	Single Out	
1	AC (L)	
2	AC (N)	
3	-V _{OUT}	
4	+V _{OUT}	

* Unless otherwise specified
unit: mm [inch]

* General tolerance: ± 1.00
[± 0.040]

* Pin thickness: ± 0.15 [± 0.006]

* Pin distance: ± 0.50 [± 0.020]

* Footprint grid 2.54 x 2.54 mm

5W, AC/DC Power Converter

SAP05H



Ordering information

Ordering can be done via www.summit-electronics.com or via info@summit-electronics.com. Please contact us for more information. Customisation of the product is available on request.

Technical support

For all product questions please contact us via info@summit-electronics.com

Document revision

Rev	Date	Changes
2025v0.1	26-08-2025	First issue of document