

ACX02 SERIES

2W DC to DC Converter

Description:

This series of DC to DC Converter module provide 2 Watts of continues output power. They are suited for use in Data communication, Telecommunication and other Industry equipment.

Features:

- +/- 10% Wide Input Range Voltage
- Efficiency up to 84%
- Un-Regulated Output
- Single or Dual Output
- Size : 6.1W x 19.5L x 10.2Hmm (For ACA01A and ACB01A)
7.1W x 19.5L x 10.2Hmm (For ACC01A)
- 1000VDC Isolation
- Potting Material : Epoxy(Flammability to UL94V-0)
- Case Material : Non-Conductive Black Plastic(Flammability to UL94V-0)
- Industrial Standard Pin-out
- 3 year warranty



7Pin SIP Package

Electrical Characteristics:

Sym.	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Vin	Input Voltage for ACA02		4.5	5	5.5	VDC
	Input Voltage for ACB02		10.8	12	13.2	VDC
	Input Voltage for ACC02		21.6	24	26.4	VDC
Fs	Switching Frequency			80		kHz
Po	Output Power Range		0		2	W
Vo	Output Voltage Range		See Rating Chart			V
Io	Output Current Range		See Rating Chart			A
Acc	Output Voltage Accuracy	Io=Full load, Vin=Typ., at 25°C		±1.0	±3.0	%
Eff	Efficiency	Io=Full load, Vin=Typ., at 25°C	76	80	84	%
REG-i	Line Regulation	Io=Full load, Vin=Vmax to Vmin, at 25°C		±1.2	±1.5	%
REG-o	Load Regulation	Io=20% to 100%, Vin=Typ., at 25°C	5		11	%
Vp-p	Ripple & Noise (Peak to Peak)	Each Output, 20MHz		75	100	mV
Vio	Isolation Voltage	Input to Output	1000			VDC
Ris	Isolation Resistance	Input to Output	1000			MΩ
Cis	Isolation Capacitance	Input to Output			120	pF
TC	Temperature Coefficient	All Output		±0.01	±0.02	%/°C
Scp	Short Circuit Protection	Momentary			0.5	Sec.
Br	Balance Regulation	Io=Full load, Vin=Typ., Dual Output		±0.1	±1.0	%

Environmental:

Sym.	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Toper	Operating Temperature Range	Without derating	-40		85	°C
Tcase	Maximum Case Temperature		-40		90	°C
Tstg	Storage Temperature		-40		125	°C
Hr	Relative Humidity		0		95	%
MTBF	Operating Temperature at 25°C, Calculated per MIL-HDBK-217F		2M			Hrs
Cool	The Cooling Condition is Free					
Filter	Internal Capacitor					

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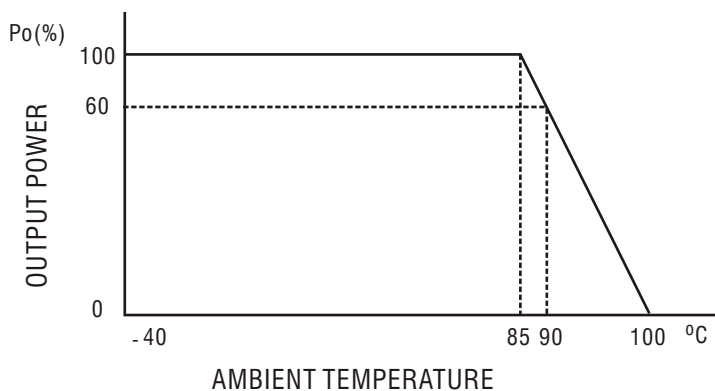
Selection Chart :

Model Number	Input Voltage	Output Voltage	Output Current		Efficiency (Typ.)	Cap.Load ⁽⁷⁾
			Min.	Max.		
ACA02-101	4.5~5.5VDC (Nominal:5V)	3.3VDC	12.1mA	606mA	77%	470μF
ACA02-102		5VDC	8.0mA	400mA	79%	470μF
ACA02-105		12VDC	3.3mA	167mA	81%	470μF
ACA02-106		15VDC	2.7mA	133mA	81%	470μF
ACA02-202		±5VDC	±4.0mA	±200mA	80%	330μF
ACA02-205		±12VDC	±1.7mA	±83mA	80%	330μF
ACA02-206		±15VDC	±1.3mA	±67mA	80%	330μF
ACB02-101	10.8~13.2VDC (Nominal:12V)	3.3VDC	12.1mA	606mA	78%	470μF
ACB02-102		5VDC	8.0mA	400mA	80%	470μF
ACB02-105		12VDC	3.3mA	167mA	83%	470μF
ACB02-106		15VDC	2.7mA	133mA	84%	470μF
ACB02-202		±5VDC	±4.0mA	±200mA	80%	330μF
ACB02-205		±12VDC	±1.7mA	±83mA	81%	330μF
ACB02-206		±15VDC	±1.3mA	±67mA	82%	330μF
ACC02-101	21.6~26.4VDC (Nominal:24V)	3.3VDC	12.1mA	606mA	76%	470μF
ACC02-102		5VDC	8.0mA	400mA	78%	470μF
ACC02-105		12VDC	3.3mA	167mA	82%	470μF
ACC02-106		15VDC	2.7mA	133mA	82%	470μF
ACC02-202		±5VDC	±4.0mA	±200mA	80%	330μF
ACC02-205		±12VDC	±1.7mA	±83mA	81%	330μF
ACC02-206		±15VDC	±1.3mA	±67mA	82%	330μF

Note :

- (1) All specifications are measured at nominal input voltage, constant resistive load between Min. and Max. output current, and probe bandwidth should be under 20MHz, Ta = +25°C.
- (2) When Load is lower than Min. output current or under no-load, it will not damage the devices; however, it may not meets all specifications.
- (3) Output Ripple & Noise Test please refers to Sinpro Electronics Co., Ltd. proposed test-method.
- (4) Load Regulation and Line Regulation calculating please refers to Sinpro Electronics Co., Ltd. proposed formula.
- (5) An external fuse is needed at the front end of DC/DC converters for protection and base on surge current and maximum input current when settle it in recommended.
- (6) "Vin-L" means "Vin-Min.", "Vin-N" means "Vin-Typ.", "Vin-H" means "Vin-Max."
- (7) Total Capacitive Loads of output should be lower than this value.

Derating Curve :



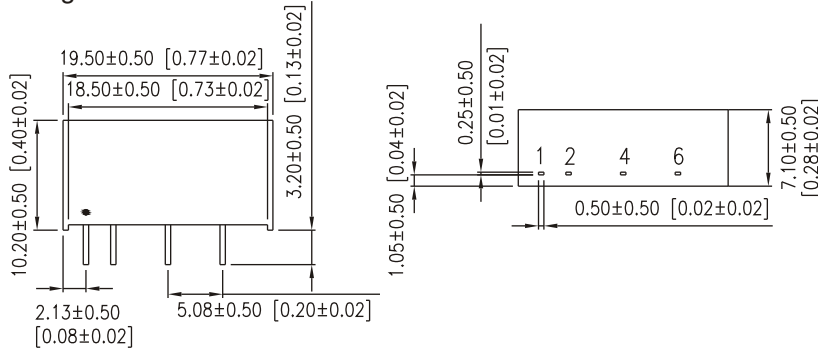
Note: At nominal input, Full load and cooling is natural convection.

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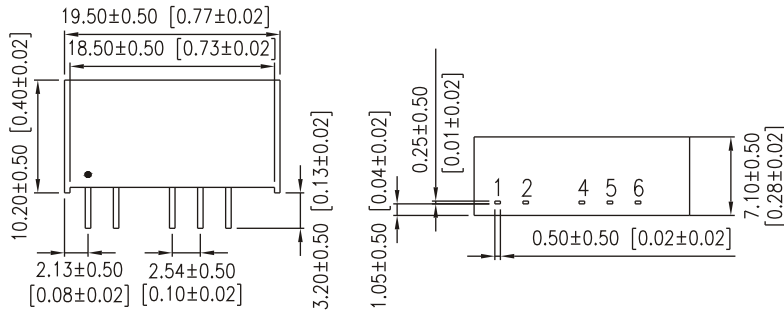
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Mechanical Specifications :

Single



Dual



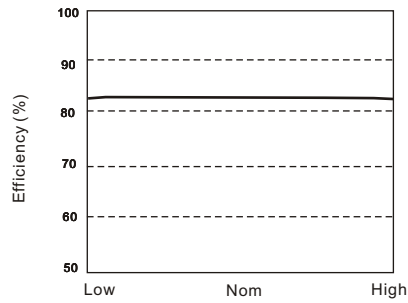
Pin Connections:

Pin	Single	Dual
1	+Vin	+Vin
2	- Vin	- Vin
4	-Vout	-Vout
5	No Pin	Common
6	+Vout	+Vout

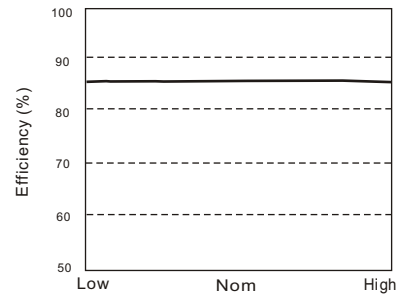
Note:

1. Dimensions are shown in mm.
2. Weight: 2.5gs.

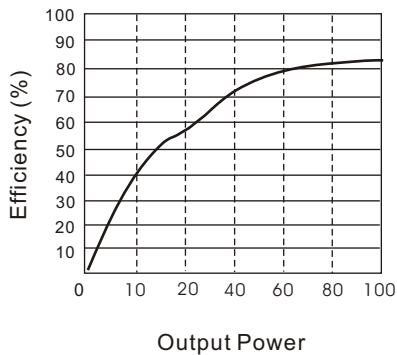
Efficiency-Curve :



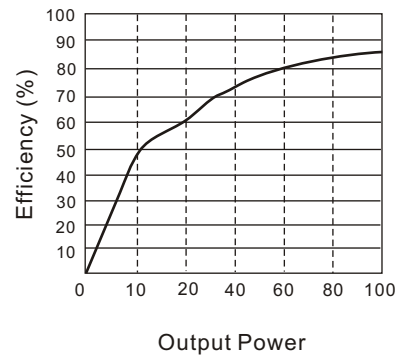
Input Voltage vs. Efficiency, Vo=3.3V, 5V&±5V



Input Voltage vs. Efficiency, Other Output Voltages



Output Power vs. Efficiency, Vo=3.3V, 5V&±5V



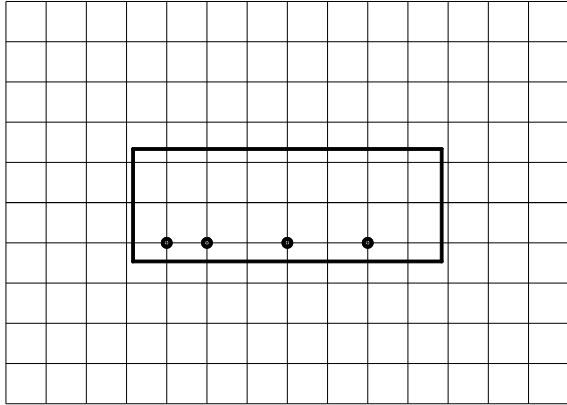
Output Power vs. Efficiency, Other Output Voltages

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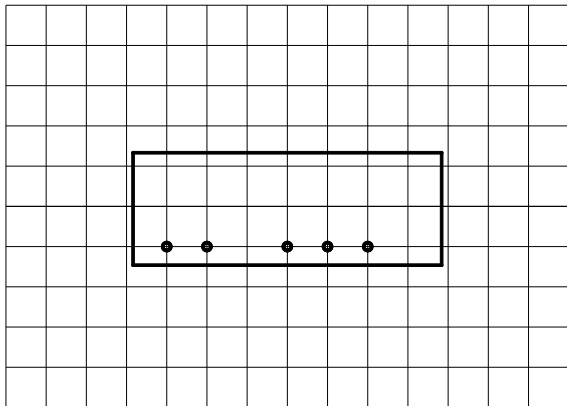
2W DC to DC Converter

Grid : 0.1 inch / 2.54 mm
Dot(Drill Hole): Φ 0.8 +0.2 / -0 mm

Single



Dual



Tolerance	Millimeters	Inches
	XX.X \pm 0.25	XX.X \pm 0.01
	XX.XX \pm 0.13	XX.XX \pm 0.005
Pin	\pm 0.1	\pm 0.004