

# Zero1-025-...

## - AC/DC power supply

Zero1 is a series of small size AC/DC power supplies for PCB mounting. Input voltage range is from 85-265VAC. Output is a regulated DC voltage. Zero1 is specially designed to supply low power circuits.

Zero1-025 max load is 2.5W. That is more than enough to supply even complicated micro controller applications, embedded systems, remote control receiver circuits, white goods, multimedia equipment, etc.

Zero 1 input circuit is designed for harsh electrical environment and can withstand surges pulses several times higher than the demands in generic EMC standards EN(IEC) 61000-0-5:2006. Input and output is separated using reinforced isolation.

Zero1 a shortcut for saving time and cost for development and approval.

### Standards

Zero1 comply with generic EMC and LVD standards.

It can be connected to the main grid without adding filtering or additional protection circuits.

EMC standards:

IEC/EN 61204-3

Safety and LVD standards:

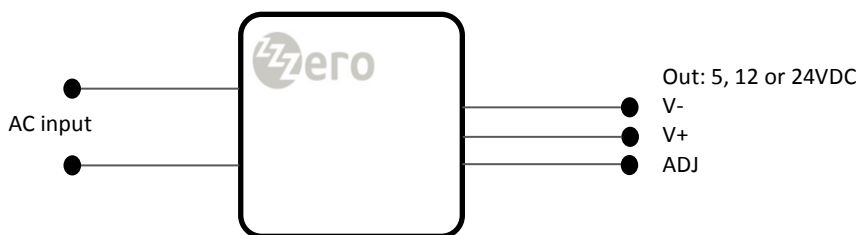
IEC/EN 60950

IEC/EN 60065

IEC/EN 60335

Detailed information on request.

RoHS compliant.



Input range: 85 to 265VAC.

Output: 2.7 to 30VDC using 3 units with variable output voltage range.

Nominal output power: 2.5W

Internal short circuit protection.

Available both in DIP and SMT package.

Absolute maximum ratings:

Input voltage: 280VAC (400VDC)

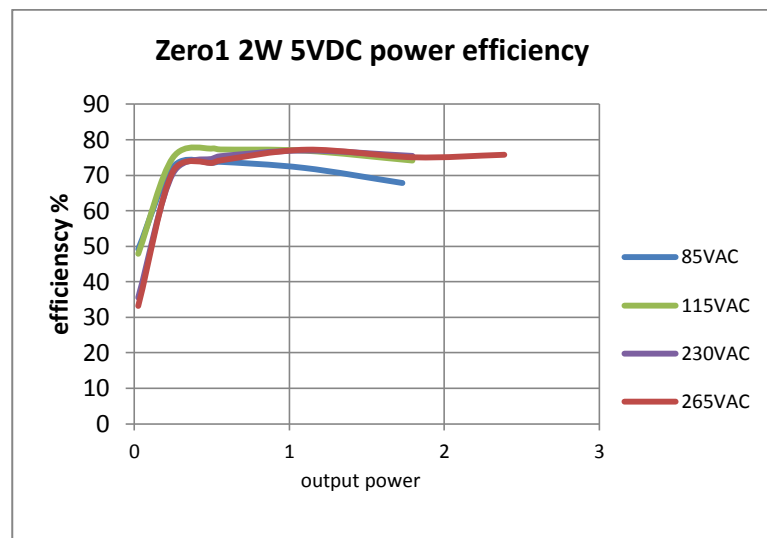
Temperature range: -20 to 85°C

Humidity: max 95% RH, non-condensing.



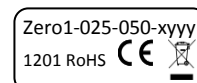
## Specifications

	Parameter		Value	Unit
INPUT	Input voltage range:		85 – 265	VAC
			120 - 370	VDC
	Input frequency range:		40-70	HZ
OUTPUT	Output voltage: Zero1-025-050-xyyy	Nominal Range	5 +-2% 2,7 to 7	VDC
	Output voltage: Zero1-025-012-xyyy	Nominal Range	12 +-2% 7 to 15	VDC
	Output voltage: Zero1-025-024-xyyy	Nominal Range	24 +-2% 15 to 30	VDC
	Output power (max. load)		2500	mW
	Quiescent power (at 230VAC input)		<30	mW
	Efficiency at max. load, typical		>75	%
	Isolation voltage		>5300	Vrms.



## Different version and marking

Type number	Output voltage
Zero1-025-050-x-yyy	5VDC
Zero1-025-012-x-yyy	12VDC
Zero1-025-024-x-yyy	24VDC



025: output power rating 2.5W  
 050: output voltage 5.0V  
 x: 0 = DIP version for wave solder  
 1 = SMT for reflow solder  
 yyy: special custom versions  
 1201: year 2012, week 1

## Setting output voltage:

### 5V version:

Vout	RX	Vout	RY
7,0	235	4,9	1812000
6,9	1175	4,8	649500
6,8	2217	4,7	381231
6,7	3379	4,6	262000
6,6	4683	4,5	194609
6,5	6156	4,4	151286
6,4	7833	4,3	121091
6,3	9761	4,2	98842
6,2	12000	4,1	81767
6,1	14632	4,0	68250
6,0	17769	3,9	57283
5,9	21574	3,8	48207
5,8	26286	3,7	40571
5,7	32270	3,6	34059
5,6	40125	3,5	28438
5,5	50889	3,4	23538
5,4	66545	3,3	19229
5,3	91412	3,2	15409
5,2	137000	3,1	12000
5,1	247714	3,0	8939
5,0	nc	2,9	6175
		2,8	3667
		2,7	1381

### 12V version:

Vout	RX	Vout	RY
15,0	67	11,8	1735400
14,9	1159	11,6	832900
14,8	2329	11,4	532067
14,7	3585	11,2	381650
14,6	4938	11,0	291400
14,5	6400	10,8	231233
14,4	7983	10,6	188257
14,3	9704	10,4	156025
14,2	11582	10,2	130956
14,1	13638	10,0	110900
14,0	15900	9,8	94491
13,9	18400	9,6	80817
13,8	21178	9,4	69246
13,7	24282	9,2	59329
13,6	27775	9,0	50733
13,5	31733	8,8	43213
13,4	36257	8,6	36576
13,3	41477	8,4	30678
13,2	47567	8,2	25400
13,1	54764	8,0	20650
13,0	63400	7,8	16352
12,9	73956	7,6	12445
12,8	87150	7,4	8878
12,7	104114	7,2	5608
12,6	126733	7,0	2600
12,5	158400		
12,4	205900		
12,3	285067		
12,2	443400		
12,1	918400		
12,0	nc		

### 24V version

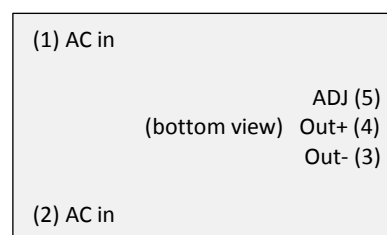
Vout	RX	Vout	RY
30,0	133	23,8	9123300
29,8	1369	23,5	3576300
29,6	2693	23,2	2189550
29,4	4115	22,9	1559209
29,2	5646	22,6	1199014
29,0	7300	22,3	965947
28,8	9092	22,0	802800
28,6	11039	21,7	682213
28,4	13164	21,4	589454
28,2	15490	21,1	515886
28,0	18050	20,8	456112
27,8	20879	20,5	406586
27,6	24022	20,2	364879
27,4	27535	19,9	329276
27,2	31488	19,6	298527
27,0	35967	19,3	271704
26,8	41086	19,0	248100
26,6	46992	18,7	227168
26,4	53883	18,4	208479
26,2	62027	18,1	191690
26,0	71800	17,8	176526
25,8	83744	17,5	162762
25,6	98675	17,2	150212
25,4	117871	16,9	138723
25,2	143467	16,6	128165
25,0	179300	16,3	118430
24,8	233050	16,0	109425
24,6	322633	15,7	101071
24,4	501800	15,4	93300
24,2	1039300	15,1	86053
24,0	nc	14,8	79278

RX = resistor connected between ADJ pin and Vout- pin

RY = resistor connected between ADJ pin and Vout+ pin

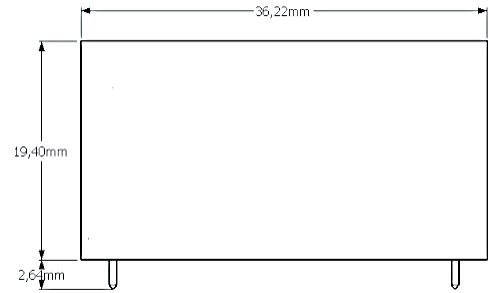
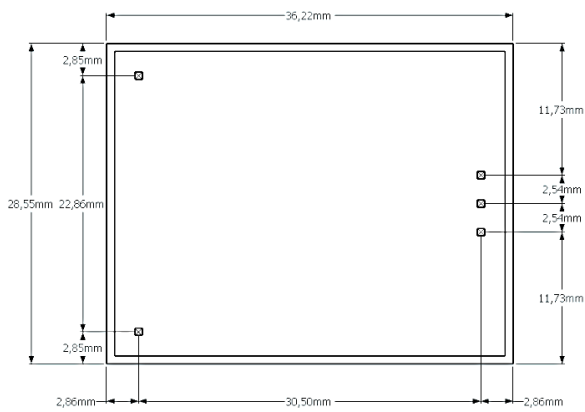
## Foot print (bottom view)

Pin	Function
1	Input. AC1
2	Input. AC2
3	Output. V-
4	Output. V+
5	Adjust pin



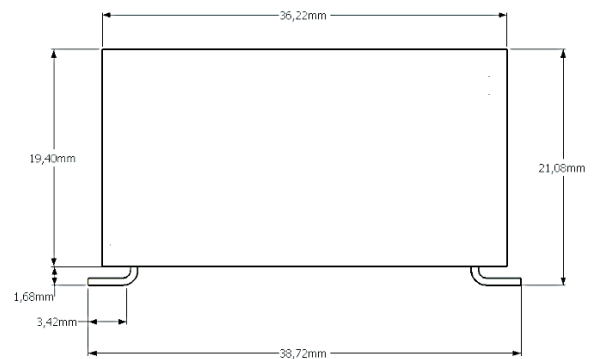
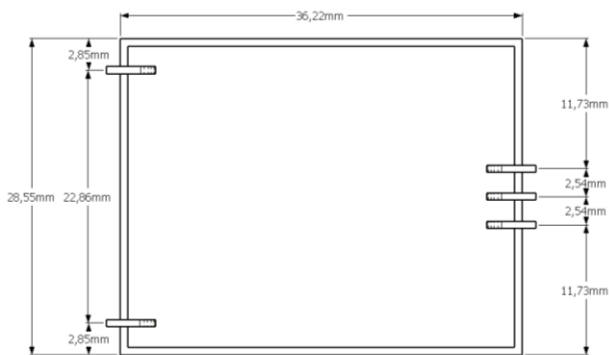
**Dimension (bottom view)**

**Zero1-025-xxx-0yyy (Dip version for wave soldering)**

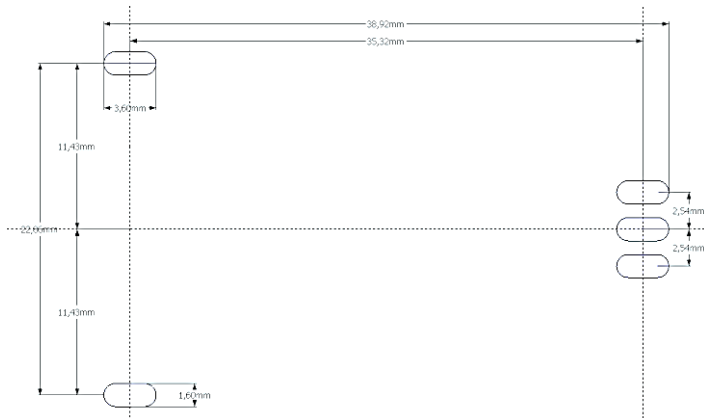


Pin size 0.6mm x 0.6mm. Recommended hole size =  $\varnothing 1.0\text{mm} +0,03\text{mm}$

**Zero1-025-xxx-1yyy (SMT version for reflow soldering)**



**Recommended footprint for SMT reflow:**



Over all tolerance  $\pm 0,2\text{mm}$ .

## Soldering:

Figure 1 SMD Soldering profile

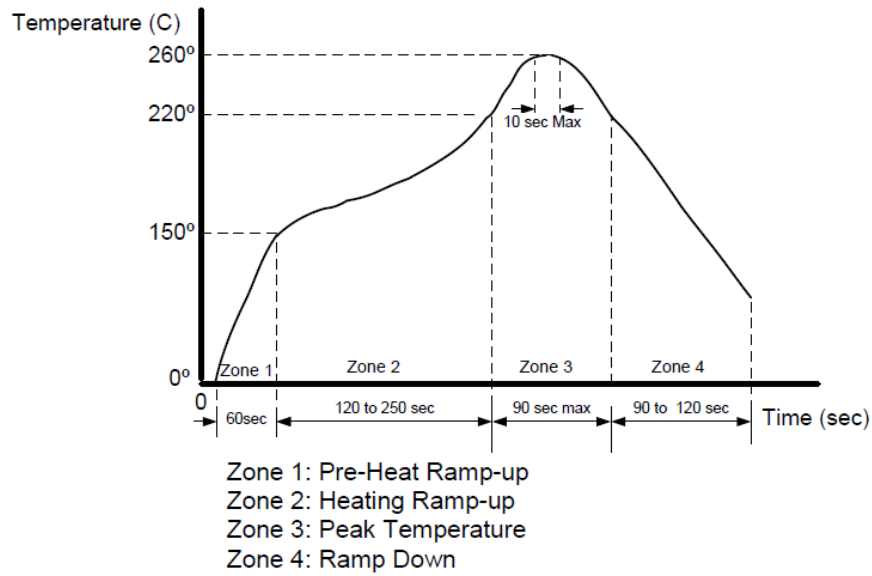


Figure 2: Wave Flow Soldering Profile for through hole converters:

