

Features

- Input Voltage Range ± 10 -20%
- Approved to CB, CE, cULus, RoSH, REACH
- UL 62368-1, IEC 62368-1, EN 62368-1 Safety Approved
- 87% Efficiency
- 1.5KVDC & 3KVDC Isolation
- Single Output 3.3-24V DC
- Industry Standard Pinout



4113DC-YYs DC-DC PSU Series

1W Encapsulated PCB Mount DC DC Converter



The 4113DC-YYs Series is a reliable and efficient. Designed for use in applications such as telecoms, computing and multimedia systems. This series is supplied with a Pin Connection input connection. Certified to CB, CE, cULus, RoSH, REACH and compliant with UL 62368-1/IEC 62368-1 /EN 62368-1.

Models

Model	Voltage (V) DC	Rated Current (mA)	% Efficiency	Ripple and Noise mVp-
13DC-YYs03NVP(H3)	3.3	303	76%	2400
13DC-YYs05NVP(H3)	5	200	82%	2400
13DC-YYs09NVP(H3)	9	112	83%	1000
13DC-YYs12NVP(H3)	12	84	84%	470
13DC-YYs15NVP(H3)	15	67	84%	330
13DC-YYs24NVP(H3)	24	42	85%	100
13DC-YYD03N3P(H3)	± 3.3	± 151	76%	± 1200
13DC-YYD05N3P(H3)	± 5	± 100	82%	± 1200
13DC-YYD09N3P(H3)	± 9	± 56	83%	± 470
13DC-YYD12N3P(H3)	± 12	± 42	84%	± 220
13DC-YYD15N3P(H3)	± 15	± 34	84%	± 220
13DC-YYD24N3P(H3)	± 24	± 21	85%	± 47

13DC-XXS03NVP(H3)	3.3	303	78%	2400
13DC-XXS05NVP(H3)	5	200	82%	2400
13DC-XXS09NVP(H3)	9	112	85%	1000
13DC-XXS12NVP(H3)	12	84	85%	680
13DC-XXS15NVP(H3)	15	67	87%	330
13DC-XXS24NVP(H3)	24	42	85%	220
13DC-XXD03N3P(H3)	±3.3	±151	78%	±1200
13DC-XXD05N3P(H3)	±5	±100	82%	±1200
13DC-XXD09N3P(H3)	±9	±56	85%	±680
13DC-XXD12N3P(H3)	±12	±42	85%	±330
13DC-XXD15N3P(H3)	±15	±34	87%	±220
13DC-XXD24N3P(H3)	±24	±21	85%	±100

Note:

1. No suffix is standard isolation (1.5KVDC) e.g, 13DC-15S05NP,
*add suffix "H3" for 3KVDC isolation, e.g, 13DC-12S05NPH3, 13DC-15S12NPH3,
2. "V" = 1 or 2 or 3 for package, No suffix "V" package1, When "v" =2, package2, and so on, e.g,13DC-12S05N2P,13DC-24S12N3PH3.
When the I / O is equal to 24 V, package 1 disable.
3. "YY" is input voltage : 03=3.3Vdc,05=5Vdc, 09=9Vdc e.g, 13DC-03S05N2P, 13DC-05S12N3PH3, 13DC-09S15NP
4. "XX" is input voltage : 12=12Vdc,15=15Vdc, 24=24Vdc e.g, 13DC-12S05N3P, 13DC-15S12NPH3, 13DC-24S15N2P

Input Specifications

Voltage Range	Vo,lo Nom @Vin:3.3V,5V,9V ±10% Vo,lo Nom @ Vin:12V,15V,24V ±20 %
Filter	Capacitor

Output Specifications

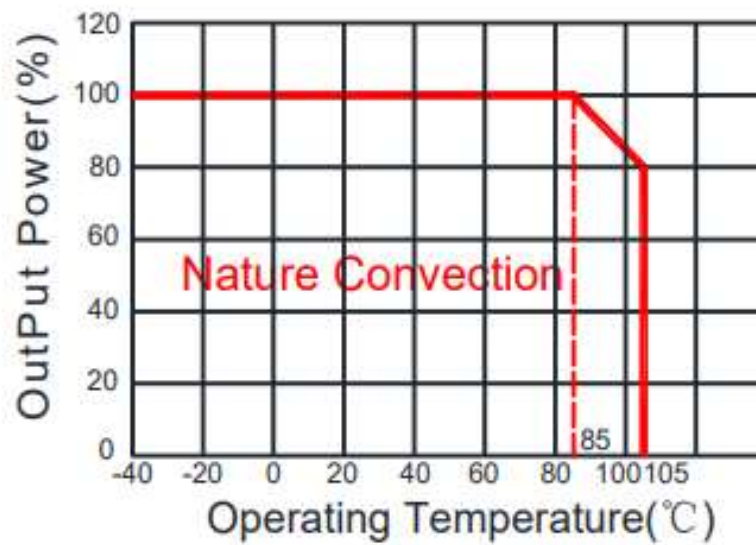
Parameters	Conditions	min	Typ	Max	Units
Voltage Tolerance	100% full load			±5	%
Short Circuit Protection	Continuous				
Line Regulation	For 1.0% OF Vin		1.2		%
Load Regulation	3.3V (10% To 100% F.L)		15	20	%
	5V (10% To 100% F.L)		10	15	%
	9V (10% To 100% F.L)		8	10	%
	12V (10% To 100% F.L)		7	10	%
	15V (10% To 100% F.L)		6	10	%
	24V (10% To 100% F.L)		5	10	%
Ripple & Noise	BW=DC To 20MHz @Vo:3.3V,5V,9V,12V,15V		30	75	mVp-p
	BW=DC To 20MHz @ Vo:24V		50	100	mVp-p

General Specifications	
Switching Frequency	Full load,nominal input @3.3V, 5V Vin 215/370 KHz Full load,nominal input @other Vin 250 KHz
Isolation Resistance	500Vdc, 1000 min, MΩ
Isolation Capacitance	Input-output,100KHz/0.1V 20 pF
Operation Temperature	-40 ~ +105 °C
Storage Temperature	-55 ~ +125 °C
Humidity	Non Condensing 95 %
Cooling	Free air Convection
Case material	DAP
MTBF	MIL-HDBK-217F@25°C 3500000 Hours
Weight	Package 1/2/3 1.1/1.5/1.5 g
Dimensions (Package 1)	11.5x6.0x7.5 mm
(Package 2)	11.5x6.0x10.0 mm
(Package 3)	12.7x10.16x6.8 mm

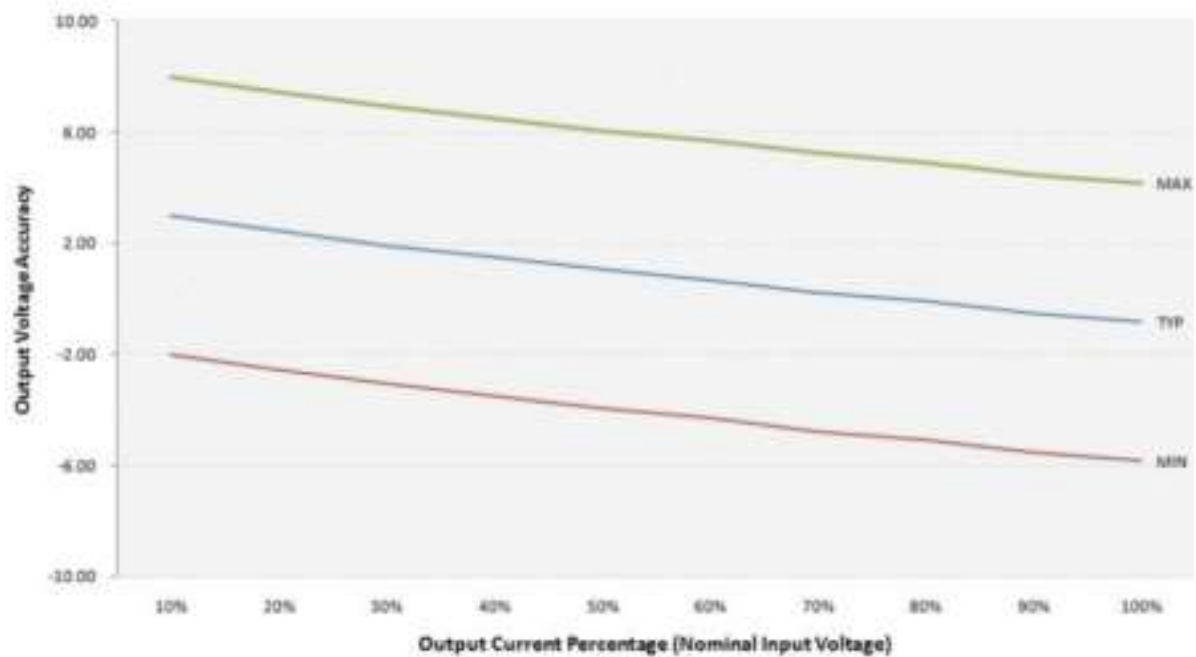
Electromagnetic Compatibility (EMC)	
EMI CE	CISPR32/EN55032 CLASS B (see Fig. 1 for recommended circuit)
EMI RE	CISPR32/EN55032 CLASS B (see Fig. 1 for recommended circuit)
EMS ESD	IEC/EN61000-4-2 Air ±8kV ,Contact ±6kV perf. Criteria B

Part Number	
14	13DC - 12 S 12 N 2 P H3
A	B C D E F G H
A:Series	
B:Input Voltage	
C:Single(S)/Dual(D)Output	
D:Output Voltage	
E:Unregulated(N)	
F:Packge	
G:Protection	
H:RoHS Version	

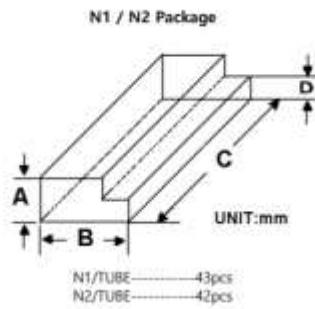
Temperature Derating Graph



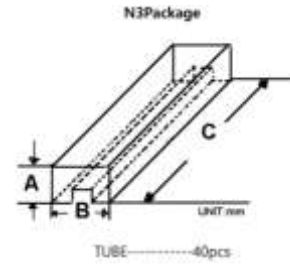
Tolerance Envelope Graph



Packaging



Size(mm)			
A	B	C	D
9.50	16.50	522	5.00



Size(mm)		
A	B	C
13.7	13.2	530

Recommended Test Circuit

		Vin	Cin	Single Vout	Cout	DualVout	Cout
Single	Vin	3.3Vdc	4.7μF/25V	3.3Vdc	10μF/16V	±3.3Vdc	±4.7μF/16V
	GND	5Vdc	4.7μF/25V	5Vdc	10μF/16V	±5Vdc	±4.7μF/16V
Dual	Vin	9Vdc	4.7μF/25V	9Vdc	2.2μF/16V	±9Vdc	±1μF/16V
	GND	12Vdc	2.2μF/25V	12Vdc	2.2μF/25V	±12Vdc	±1μF/25V
		15Vdc	2.2μF/25V	15Vdc	1μF/25V	±15Vdc	±1μF/25V
		24Vdc	1μF/50V	24Vdc	1μF/50V	±24Vdc	±1μF/50V

EMC (CLASS B) compliance circuit

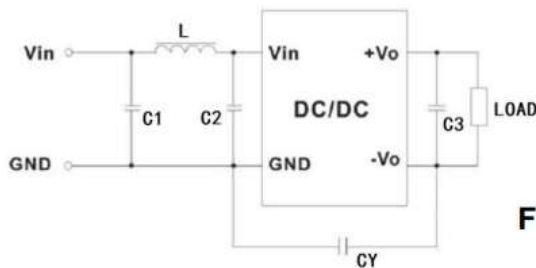
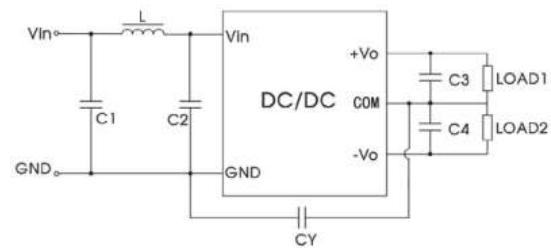


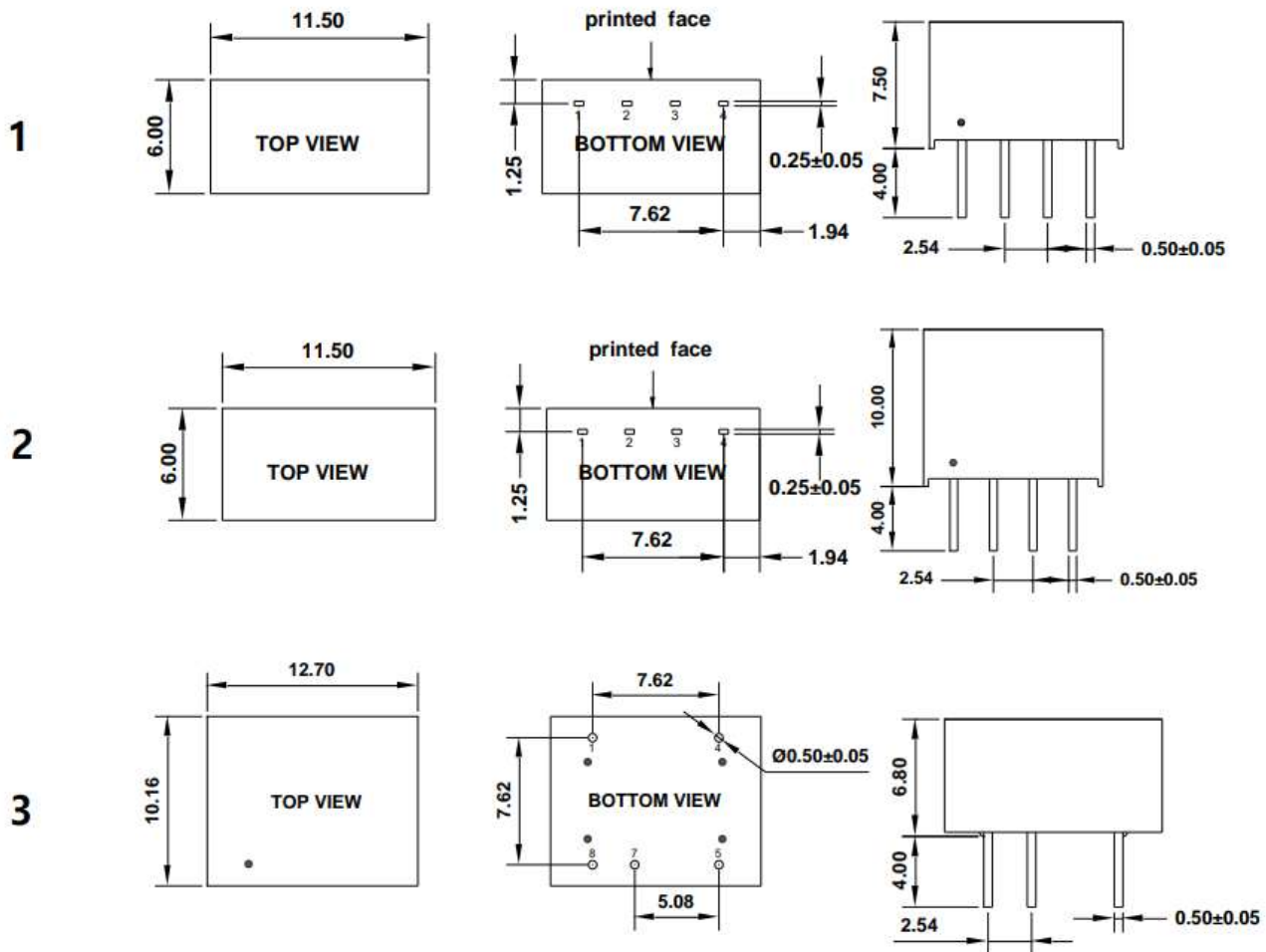
Fig.1



EMC recommended circuit value table

EMI	C1	4.7μF /50V
	C2	4.7μF /50V
	CY	1nF/4kV
	C3	Recommended Test Circuit
	L	6.8μH

Markings and Dimensions



PIN Connection

PIN	1	2	3	4	5	7	8
4Pin	-Vin	+Vin	-Vout	+Vout			
8Pin-S	-Vin			+Vin	+Vout	-Vout	
8Pin-D	-Vin			+Vin	+Vout	Com	-Vout