FEATURES:

- 4PIN SIP and 8PIN DIL Package
- No-load input current as low as 5mA
- Continuous short-circuit protection
- High Efficiency up to 87%
- Unregulated Output Types
- 1.5KVDC & 3KVDC Isolation
- Operating Temperature:-40℃ to +105℃
- Industry Standard Pinout
- UL/cUL/IEC/EN 62368-1 approved, CB-Report
- EMC Standard of EMI EN55032:2015 Approved
- EMC Standard of EMS EN55035:2017 Approved

Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

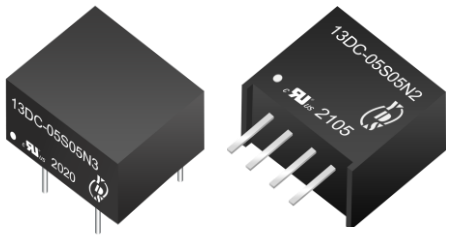
Part Number	Output Voltage	Output Current	Efficiency	Capacitive Load(μF)	Package Style
	Vdc	mA	%TYP	Max.	
13DC-YYS03N*P(H3)	3.3	303	76	2400	1/2/3
13DC-YYS05N*P(H3)	5	200	82	2400	1/2/3
13DC-YYS09N*P(H3)	9	112	83	1000	1/2/3
13DC-YYS12N*P(H3)	12	84	84	470	1/2/3
13DC-YYS15N*P(H3)	15	67	84	330	1/2/3
13DC-YYS24N*P(H3)	24	42	85	100	2/3
13DC-YYD03N3P(H3)	±3.3	±151	76	±1200	3
13DC-YYD05N3P(H3)	±5	±100	82	±1200	3
13DC-YYD09N3P(H3)	±9	±56	83	±470	3
13DC-YYD12N3P(H3)	±12	±42	84	±220	3
13DC-YYD15N3P(H3)	±15	±34	84	±220	3
13DC-YYD24N3P(H3)	±24	±21	85	±47	3
13DC-XXS03N*P(H3)	3.3	303	78	2400	1/2/3
13DC-XXS05N*P(H3)	5	200	82	2400	1/2/3
13DC-XXS09N*P(H3)	9	112	85	1000	1/2/3
13DC-XXS12N*P(H3)	12	84	85	680	1/2/3
13DC-XXS15N*P(H3)	15	67	87	330	1/2/3
13DC-XXS24N*P(H3)	24	42	85	220	2/3
13DC-XXD03N3P(H3)	±3.3	±151	78	±1200	3
13DC-XXD05N3P(H3)	±5	±100	82	±1200	3
13DC-XXD09N3P(H3)	±9	±56	85	±680	3
13DC-XXD12N3P(H3)	±12	±42	85	±330	3
13DC-XXD15N3P(H3)	±15	±34	87	±220	3
13DC-XXD24N3P(H3)	±24	±21	85	±100	3

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. " *" = 1 or 2 or 3 for package , No suffix * package1 , When * =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

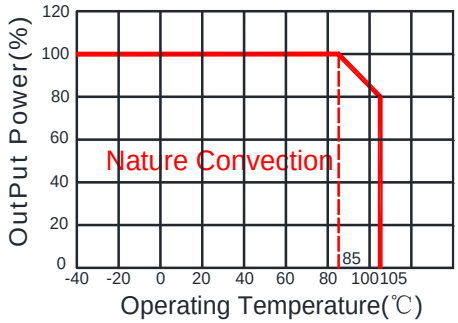
YUAN DEAN SCIENTIFIC

DC-DC Converter
13DC SERIES
1Watt
1.5KV & 3KV Isolated
Single& Dual Output
SIP4 & DIL8



CB Scheme CE cULus ROHS COMPLIANT 3 YEARS WARRANTY

Temperature Derating Graph



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E-MAIL: ydsweb@yds.com.tw
Rev: 4 2025/03/11

Input Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Range	Vo,Io Nom @Vin:3.3V,5V,9V		±10		%
	Vo,Io 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

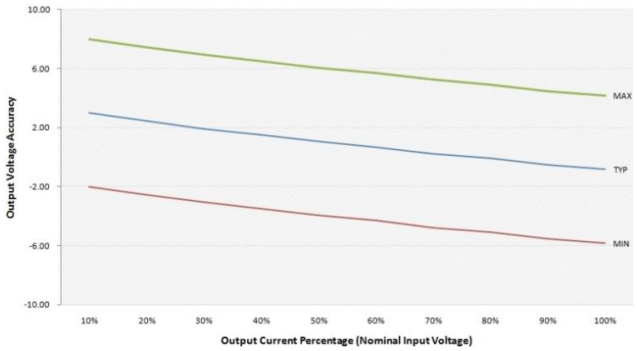
Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Isolation Capacitance	Input-output, 100KHz/0.1V		20		pF
Switching Frequency	Full load,nominal input @3.3V, 5V Vin		215/370		KHz
	Full load,nominal input @other Vin		250		KHz
Operation Temperature		-40		+105	℃
Storage Temperature		-55		+125	℃
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F@25℃	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

Part Number

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

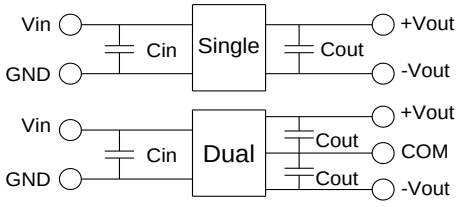
Tolerance Envelope Graph



Electromagnetic Compatibility (EMC)

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

Recommended Test Circuit



Vin	Cin	Single Vout	Cout	DualVout	Cout
3.3Vdc	4.7μF/25V	3.3Vdc	10μF/16V	±3.3Vdc	±4.7μF/16V
5Vdc	4.7μF/25V	5Vdc	10μF/16V	±5Vdc	±4.7μF/16V
9Vdc	4.7μF/25V	9Vdc	2.2μF/16V	±9Vdc	±1μF/16V
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

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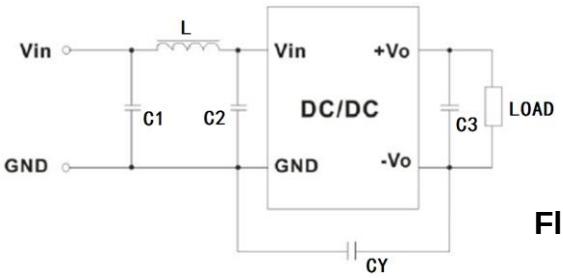
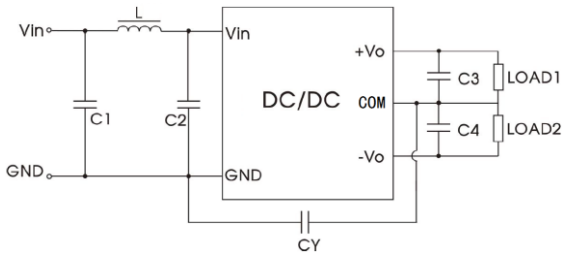


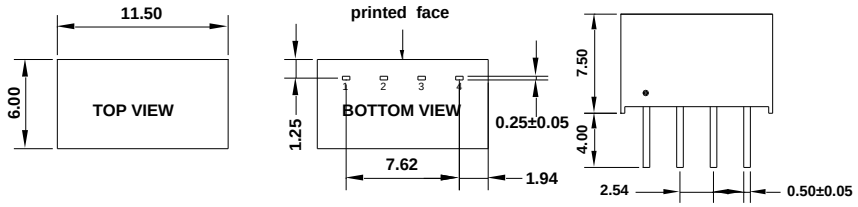
Flg.1



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

1



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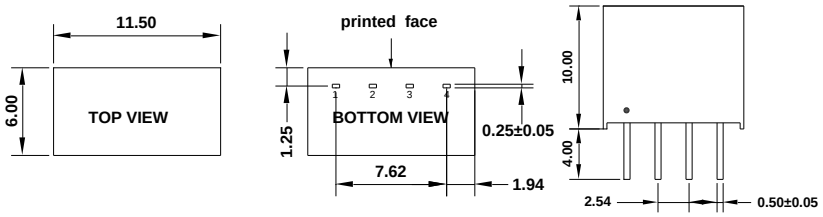

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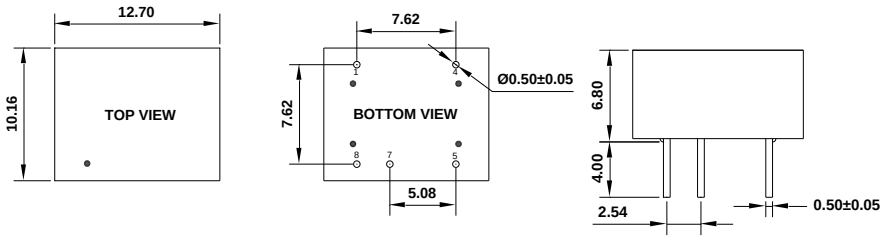


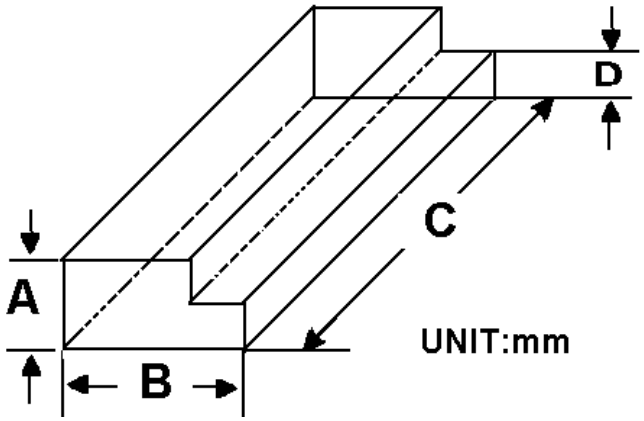
UNIT:mm Unless otherwise specified,all tolerances are ±0.25

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

Packaging

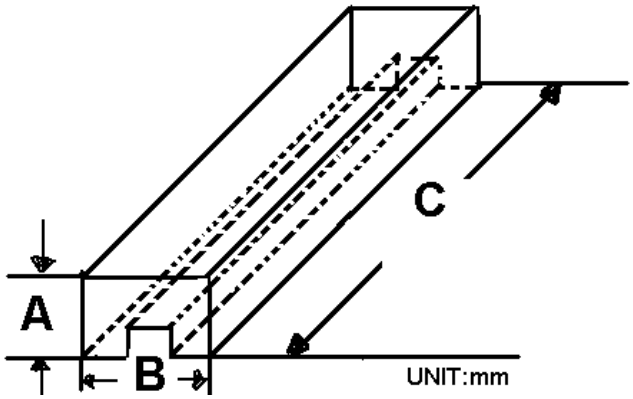
N1 / N2 Package



N1/TUBE----------43pcs
N2/TUBE----------42pcs

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

N3Package



TUBE----------40pcs

Size(mm)		
A	B	C
13.7	13.2	530