

FEATURES :

- 4PIN SIP and 8PIN DIL Package
- No-load input current as low as 5mA
- High Efficiency up to 85%
- Unregulated Output Types
- 1.5KVDC & 3KVDC Isolation
- Operating Temperature: -40°C TO +105°C
- Industry Standard Pinout
- Design refer to IEC62368, UL62368, EN62368

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DC-DC Converter

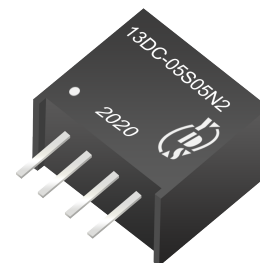
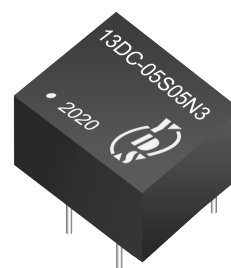
13DC SERIES

1Watt

1.5KVDC & 3KV Isolated

Single & Dual Output

SIP4 & DIL8



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-05S03N(H3)	3.3	303	74	2400	1
13DC-05S05N(H3)	5	200	82	2400	1
13DC-05S09N(H3)	9	112	83	1000	1
13DC-05S12N(H3)	12	84	83	560	1
13DC-05S15N(H3)	15	67	83	560	1
13DC-05S03N2(H3)	3.3	303	74	2400	2
13DC-05S05N2(H3)	5	200	82	2400	2
13DC-05S09N2(H3)	9	112	83	1000	2
13DC-05S12N2(H3)	12	84	83	560	2
13DC-05S15N2(H3)	15	67	83	560	2
13DC-05S24N2(H3)	24	42	85	220	2
13DC-05S03N3(H3)	3.3	303	74	2400	3
13DC-05S05N3(H3)	5	200	82	2400	3
13DC-05S09N3(H3)	9	112	83	1000	3
13DC-05S12N3(H3)	12	84	83	560	3
13DC-05S15N3(H3)	15	67	83	560	3
13DC-05S24N3(H3)	24	42	85	220	3
13DC-05D03N3(H3)	±3.3	±150	74	±1200	3
13DC-05D05N3(H3)	±5	±100	82	±1200	3
13DC-05D09N3(H3)	±9	±56	83	±470	3
13DC-05D12N3(H3)	±12	±42	83	±220	3
13DC-05D15N3(H3)	±15	±34	83	±220	3
13DC-05D24N3(H3)	±24	±21	85	±100	3

Note :

No suffix is standard isolation (1.5KVDC) e.g, 13DC-05S05N · 13DC-05S05N2 *add suffix "H3" for 3KVDC isolation, e.g, 13DC-05S05NH3, 13DC-05S12N3H3

Input Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	Vo, Io Nom	4.5	5	5.5	Vdc
Filter	Capacitor				

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Rev:o 2020/06/15

Output Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% full load			±5	%
Short Circuit Protection	without suffix			1 Sec	
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	%
Ripple & Noise	24V (10% To 100% F.L.)		5	10	%
	BW=DC To 20MHz @Other Vo		30	75	mVp-p
	BW=DC To 20MHz @24V Vo		50	100	mVp-p

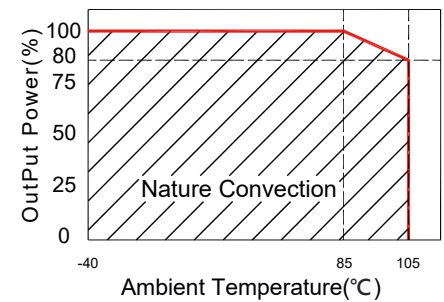
General Specifications

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		350		KHz
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

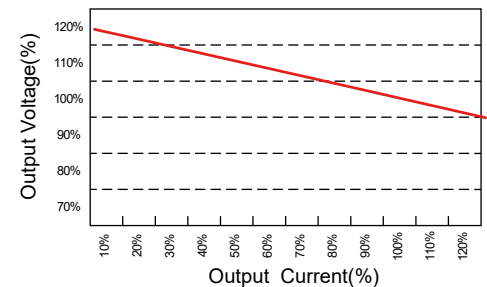
Electromagnetic Compatibility (EMC)

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

Temperature Derating Graph



Tolerance Envelope Graph

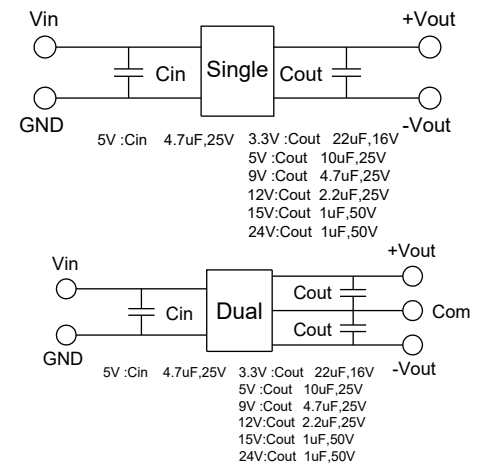


Part Number

13DC - 05 S 05 N 2 H3
A B C D E F G

A:Series
B:Input Voltage
C:Single(S)Dual(D)
D:Output Voltage
E:Unregulated(N)
F:Package
G:Isolation Voltage

Recommended Test Circuit



EMC (CLASS B) Compliance Circuit

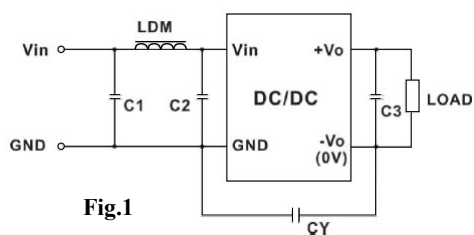


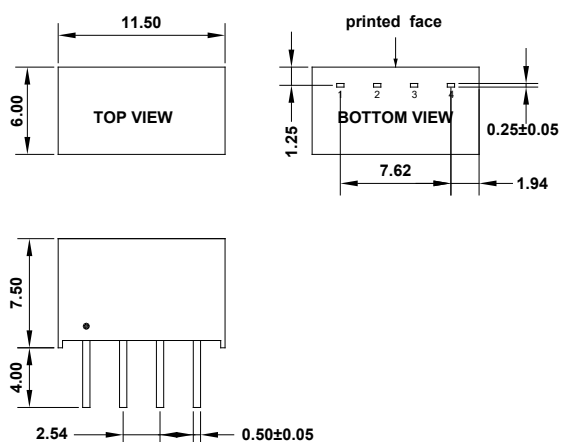
Fig.1

EMC recommended circuit value table

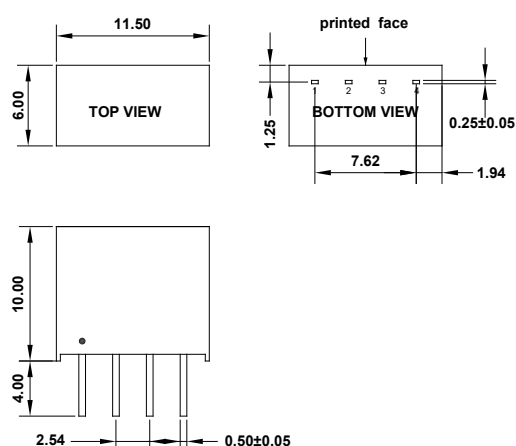
Input voltage 5VDC	Output voltage (VDC)		3.3/5/9	12/15/24
	EMC	C1/C2	4.7uF/25V	4.7uF/25V
		CY	—	1nF/4KVDC
		C3	Refer To The Recommended Test Circuit	
		LDM	6.8uH	6.8uH

Markings and dimensions

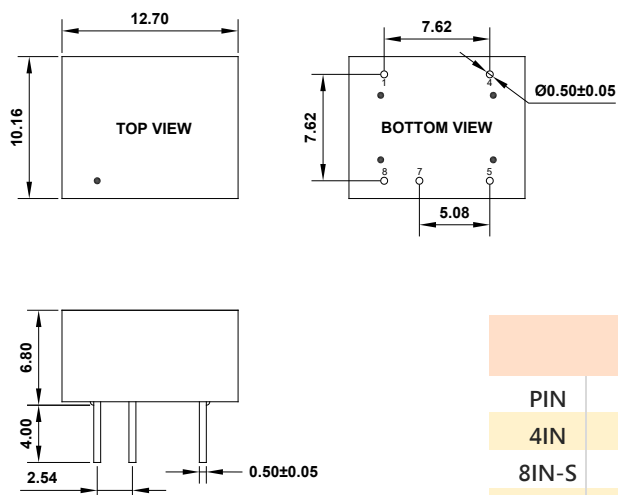
1.



2.



3.

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

PIN Connection

PIN	1	2	3	4	5	7	8
4IN	-Vin	+Vin	-Vout	+Vout			
8IN-S	-Vin			+Vin	+Vout	-Vout	
8IN-D	-Vin			+Vin	+Vout	COM	-Vout