

C13DC-3W SERIES 3Watt 1.5KV & 3KV Isolated DC-DC Converter Single & Dual Output SIP4&DIL8



FEATURES :

- 4PIN SIP and 8PIN DIL Package
- No-load input current as low as 8mA
- Continuous short-circuit protection
- High Efficiency up to 88%
- Unregulated Output Types
- 1.5KVDC & 3KVDC Isolation
- Operating Temperature:-40°C to +85°C
- Industry Standard Pinout
- Design refer to IEC62368, UL62368, EN62368



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

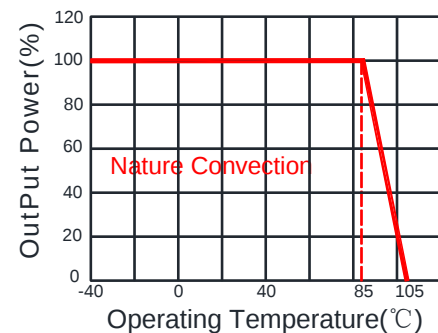
Part Number	Output Voltage	Output Current	Efficiency	Capacitive Load(μF)	Package Style
	Vdc	mA	%TYP	Max.	
C13DC-12S05NXP3 ^(H3)	5	600	85	1000	1/2
C13DC-12S12NXP3 ^(H3)	12	250	87	220	1/2
C13DC-12S15NXP3 ^(H3)	15	200	88	220	1/2
C13DC-12S24NXP3 ^(H3)	24	125	88	47	1/2
C13DC-12D05N2P3 ^(H3)	±5	±300	86	±560	2
C13DC-12D12N2P3 ^(H3)	±12	±125	86	±100	2
C13DC-12D15N2P3 ^(H3)	±15	±100	88	±100	2
C13DC-12D24N2P3 ^(H3)	±24	±63	88	±22	2
C13DC-15S05NXP3 ^(H3)	5	600	85	1000	1/2
C13DC-15S12NXP3 ^(H3)	12	250	87	220	1/2
C13DC-15S15NXP3 ^(H3)	15	200	88	220	1/2
C13DC-15S24NXP3 ^(H3)	24	125	88	47	1/2
C13DC-15D05N2P3 ^(H3)	±5	±300	86	±560	2
C13DC-15D12N2P3 ^(H3)	±12	±125	86	±100	2
C13DC-15D15N2P3 ^(H3)	±15	±100	88	±100	2
C13DC-15D24N2P3 ^(H3)	±24	±63	88	±22	2
C13DC-24S05NXP3 ^(H3)	5	600	85	1000	1/2
C13DC-24S12NXP3 ^(H3)	12	250	87	220	1/2
C13DC-24S15NXP3 ^(H3)	15	200	88	220	1/2
C13DC-24S24NXP3 ^(H3)	24	125	88	47	1/2
C13DC-24D05N2P3 ^(H3)	±5	±300	86	±560	2
C13DC-24D12N2P3 ^(H3)	±12	±125	86	±100	2
C13DC-24D15N2P3 ^(H3)	±15	±100	88	±100	2
C13DC-24D24N2P3 ^(H3)	±24	±63	88	±22	2

Note:

- 1: No suffix is standard isolation (1.5KVDC) e.g. C13DC-12S05NP3, *add suffix "H3" for 3KVDC isolation, e.g. C13DC-12S05NP3H3.
2. X = 1 or 2 package, No suffix X package1, When X=2, package2, and so on, e.g. C13DC-12S05N2P3.



Temperature Derating Graph



C13DC-3W SERIES 3Watt 1.5KV & 3KV Isolated DC-DC Converter Single & Dual Output SIP4&DIL8



Input Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Range	Vo,Io Nom		±10		%
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	5V (10% To 100% F.L)		9	15	%
	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		100	150	mVp-p

General Specifications

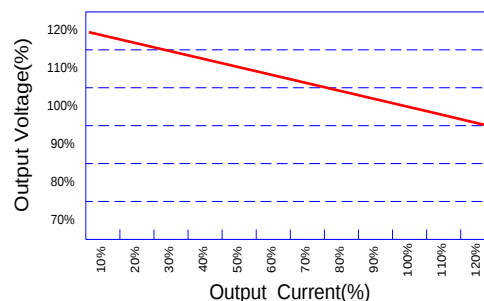
Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Isolation Capacitance	Input-output, 100KHz/0.1V		20		pF
Switching Frequency	Full load, nominal input		250		KHz
Operation Temperature		-40		+85	°C
Storage Temperature		-55		+125	°C
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F@25°C	3500000			Hours
Weight	Package 1		1.9		g
	Package 2		1.9		g
Dimensions	Package 1	11.50x7.50x10.00			mm
	Package 2	12.70x10.16x7.50			mm

Part Number

C13DC	-	12	S	12	N	X	P	3	H3
A		B	C	D	E	F	G	H	I

- A : Series
- B : Input Voltage
- C : Single(S)/Dual(D)/Output
- D : Output Voltage
- E : Unregulated(N)
- F : Package
- G : Protection
- H : Output Power
- I : Isolation Voltage

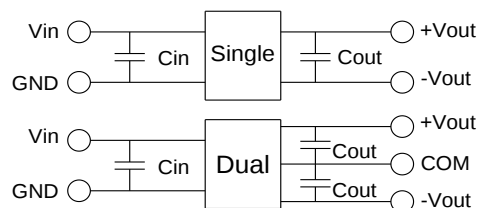
Tolerance Envelope Graph



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	Dual Vout	Cout
12Vdc	2.2μF/25V	5Vdc	10μF/16V	±5Vdc	±4.7μF/16V
15Vdc	2.2μF/25V	9Vdc	2.2μF/16V	±9Vdc	±1μF/16V
24Vdc	1μF/50V	12Vdc	2.2μF/25V	±12Vdc	±1μF/25V
- -	- -	15Vdc	1μF/25V	±15Vdc	±1μF/25V
- -	- -	24Vdc	1μF/50V	±24Vdc	±1μF/50V

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EMC (CLASS B) compliance circuit

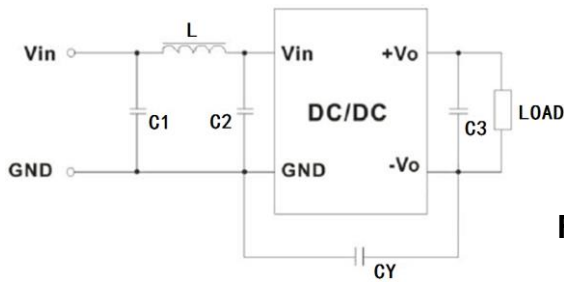
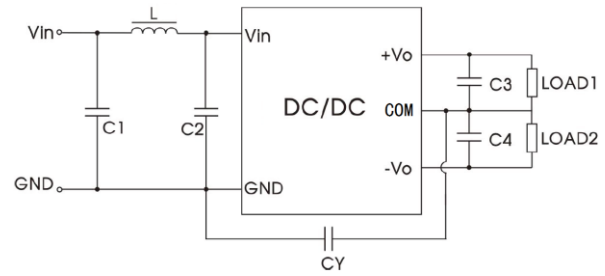


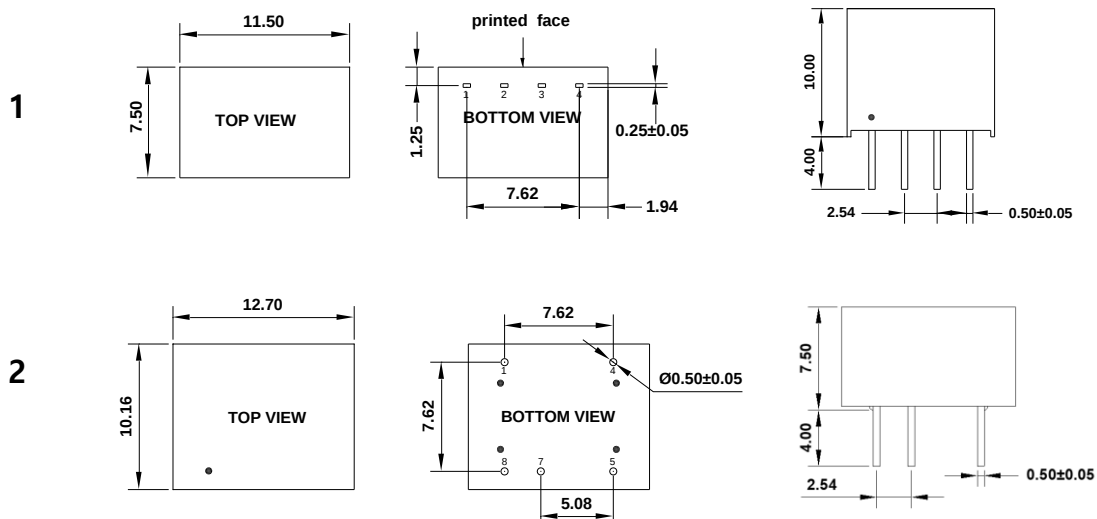
Fig.1



EMC recommended circuit value table

EMI	C1	10 μ F /50V
	C2	10 μ F /50V
	CY	1nF/4kV
	C3, C4	Recommended Test Circuit
	L	6.8 μ H

Markings and Dimensions



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

PIN Connection

Package	PIN	1	2	3	4	5	7	8
1	Single	-Vin	+Vin	-Vout	+Vout			
2	Single	-Vin			+Vin	+Vout	-Vout	No Pin
	Dual	-Vin			+Vin	+Vout	Com	-Vout