

**FEATURES :**

- 4PIN SIP Package.
- High Efficiency up to 85%.
- Unregulated Output Types.
- Internal SMD Construction
- Operating Temperature:-40°C TO +85°C
- No External Component Required
- Industry Standard Pinout

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

Part Number	Output Voltage	Output Current	Efficiency
	Vdc	mA	%
13D-XXS05N2WNL	5	400	70
13D-XXS09N2WNL	9	222	75
13D-XXS12N2WNL	12	167	80
13D-XXS15N2WNL	15	133	80
13D-XXS24N2WNL	24	84	85

**Note:**

- 1."XX" Is Input Voltage : 05=5Vdc,09=9Vdc,12=12Vdc,15=15Vdc,24=24Vdc.
- 2.The input voltage increases, there will be an increase in efficiency.

**Input Specifications**

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	Vo,Io Nom			±10	%
Filter	Capacitor				

**Output Specifications**

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% full load			±5	%
Short Circuit Protection	Short Term			1	Sec
Line Regulation	For 1.0% OF Vin		1.2		%
Load Regulation	3.3V,5V (10% To 100% F.L)			15	%
Load Regulation	9V,12V,15V,24V (10% To 100% F.L)			10	%
Ripple & Noise	BW=DC To 20MHz			100	mVp-p
Transient response setting time	50% load step change		350		us

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DC-DC Converter

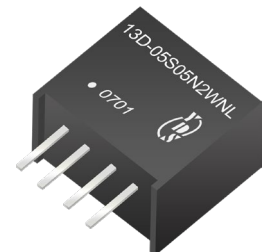
13D-2W SERIES

2Watt

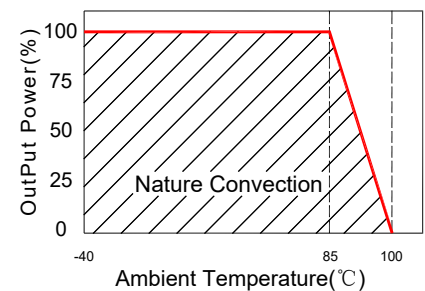
1KV Isolated

Single Output

SIP4



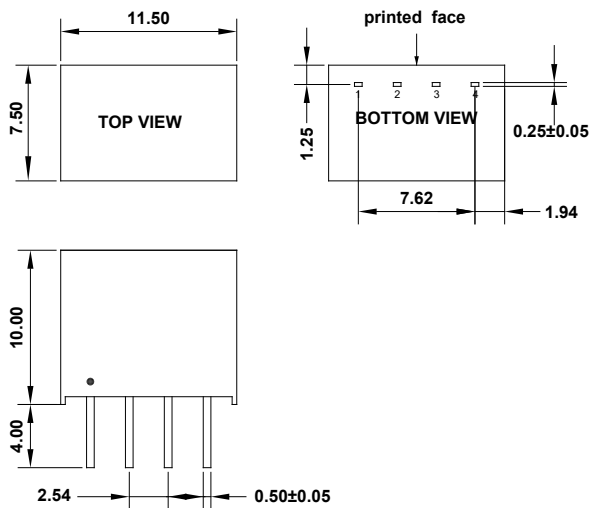
Temperature Derating Graph



General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Switching Frequency	Full load, nominal input		100		KHz
Operating Temperature		-40		+85	°C
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F@25°C	3500000			Hours
Weight			1.8		g
Dimensions			11.50x7.50x10.00		mm

Markings and Dimensions

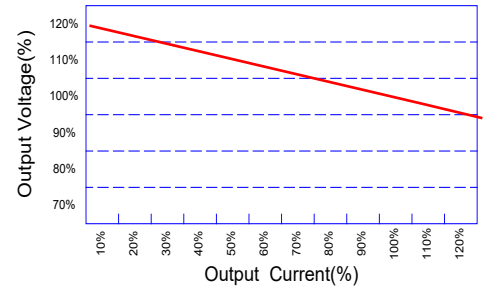


Unit: mm Unless otherwise specified, all tolerances are ±0.25

PIN Connection

PIN	1	2	3	4
Single	-Vin	+Vin	-Vout	+Vout

Tolerance Envelope Graph

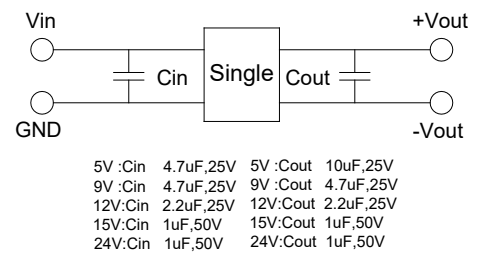


Part Number

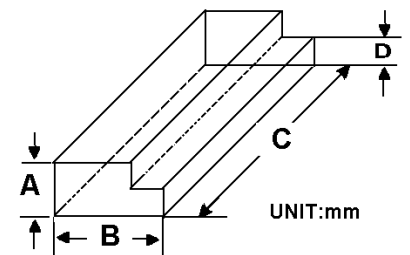
13D - 05 S 05 N 2W NL  
 A B C D E F G

A:Series  
 B:Input Voltage  
 C:Single(S)  
 D:Output Voltage  
 E:Unregulated(N)  
 F:Output Power  
 G:RoHS Version

Recommended Test Circuit



Packaging



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