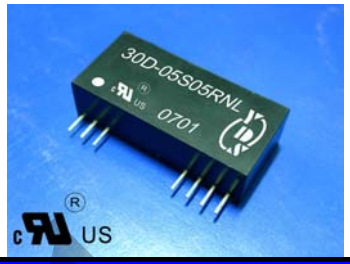
Yuan Dean Scientific CO.,LTD 30D SERIES

500Vdc Isolation Single & Dual Output 1.8 Watt Dc-Dc Converter



FEATURES:

- 12PIN SIP Package
- High Efficiency up to 85%
- Recognized By UL 60950-1
- Unregulated & Regulated Output Types
- Low Ripple & Noise ●Internal SMD Construction ●Industry Standard Pinout
- Operating Temperature:-40℃ TO +85℃ ●No External Component Required

RoHS Compliant

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	%TYP
30D-XXS05RNL	5	360	58
30D-XXS05NNL	5	360	70
30D-XXD05NNL	±5	±180	70
30D-XXS09RNL	9	200	60
30D-XXS09NNL	9	200	70
30D-XXD09NNL	±9	±100	70
30D-XXS12RNL	12	150	60
30D-XXS12NNL	12	150	75
30D-XXD12RNL	±12	±75	60
30D-XXD12NNL	±12	±75	75
30D-XXS15RNL	15	120	60
30D-XXS15NNL	15	120	75
30D-XXD15RNL	±15	±60	60
30D-XXD15NNL	±15	±60	75
30D-XXS24RNL	24	75	60
30D-XXS24NNL	24	75	80
30D-XXD24RNL	±24	±38	60
30D-XXD24NNL	±24	±38	80

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	Regulated(Continuous)				
Short Circuit Protection	Unregulated(Short Trem)			1Sec	
Line Regulation	Regulated			±0.3	%
Load Regulation	Regulated			±0.5	%
Ripple & Noise	BW=DC To 20MHz			50	mVp-p
Line Regulation	Unregulated (For 1% of Vin)		1.2		%
Load Regulation	Unregulated (20% To 100% F.L)			10	%
Transient response setting time	50% load step change		350		us

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	℃
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F@25℃(Unregulated)	2500000			Hours
MTBF	MIL-HDBK-217F@25℃(Regulated)	1500000			Hours
Weight			8.3		g
Dimensions			32.2X9.0X15.2		mm

http://www.yuan-dean.com E-mail:yds.tech@msa.hinet.net Tel:886-6-2512628
http://www.yuandean.com E-mail:yds@yds.com.tw Fax:886-6-2511858 2010-3-27

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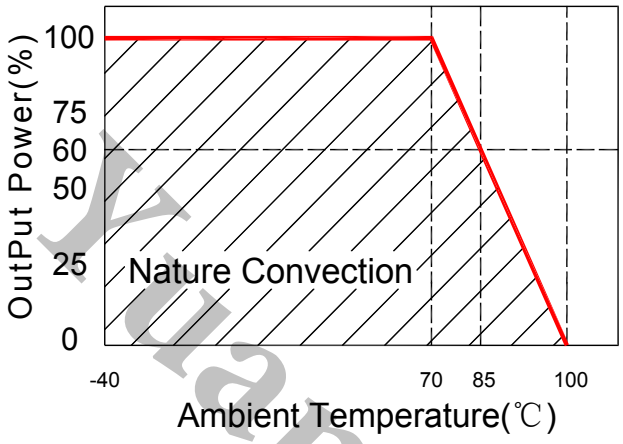
Temperature Derating Graph

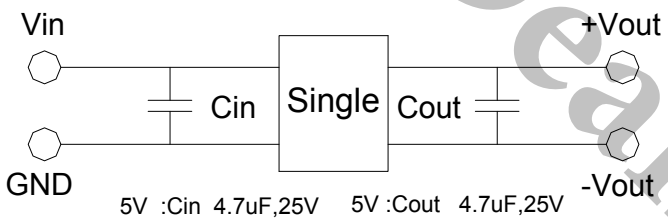


Part Number

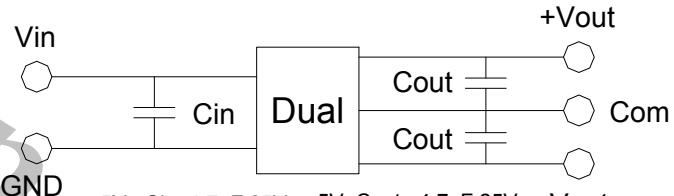
30D	-	05	S	05	R	NL
A		B	C	D	E	F

A:Series
B:Input Voltage
C:Single(S)Dual(D)
D:Output Voltage
E:Regulated(R)Unregulated(N)
F:RoHS Version

Recommended Test Circuit

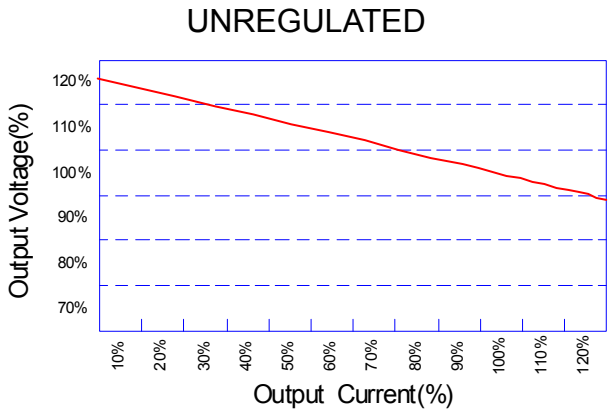


5V :Cin	4.7uF,25V	5V :Cout	4.7uF,25V
9V :Cin	4.7uF,25V	9V :Cout	2.2uF,25V
12V:Cin	2.2uF,25V	12V:Cout	1uF,25V
15V:Cin	2.2uF,25V	15V:Cout	0.47uF,50V
24V:Cin	1uF,50V	24V:Cout	0.47uF,50V



5V :Cin	4.7uF,25V	5V :Cout	4.7uF,25V
9V :Cin	4.7uF,25V	9V :Cout	2.2uF,25V
12V:Cin	2.2uF,25V	12V:Cout	1uF,25V
15V:Cin	2.2uF,25V	15V:Cout	0.47uF,50V
24V:Cin	1uF,50V	24V:Cout	0.47uF,50V

Tolerance Envelope Graph



http://www.yuan-dean.com E-mail:yds.tech@msa.hinet.net Tel:886-6-2512628
http://www.yuandean.com E-mail:yds@yds.com.tw Fax:886-6-2511858 2010-3-27

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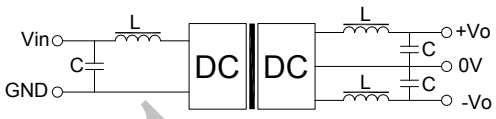
Application Note



<Figure 1>

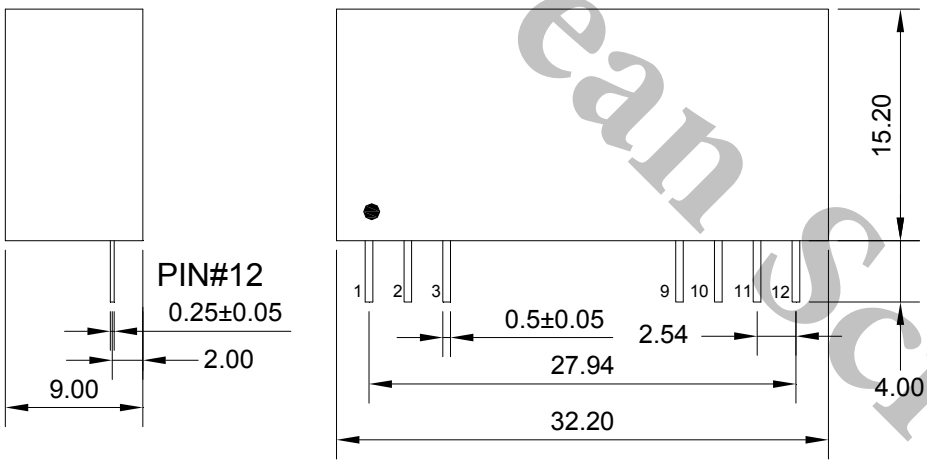
External Capacitor Table

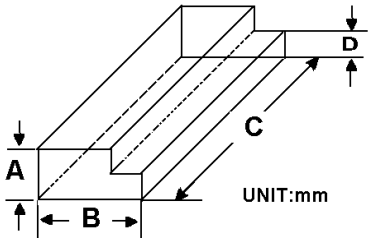
Vin	External capacitor	Vout	External capacitor
5VDC	4.7uF/25V	5VDC	4.7uF/25V
9VDC	4.7uF/25V	9VDC	2.2uF/25V
12VDC	2.2uF/25V	12VDC	1uF/25V
15VDC	2.2uF/25V	15VDC	0.47uF/50V
24VDC	1uF/50V	24VDC	0.47uF/50V

Filtering

In some circuits which are sensitive to noise and ripple, a filtering capacitor may be added to the DC/DC output end and input end to reduce the noise and ripple. However, the capacitance of the output filter capacitor must proper. If the capacitance is too big, a startup problem might arise. For every channel of output, providing the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor refer to the external capacitor table. To get an extreme low ripple, an "LC" filtering network may be connected to the input and output ends of the DC/DC converter, which may produce a more significant filtering effect. It should also be noted that the inductance and the frequency of the "LC" filtering network should be staggered with the DC/DC frequency to avoid mutual interference (see figure 1).

Markings and dimensions Packaging





Size(mm)			
A	B	C	D
12.0	28.55	550	6.00

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

PIN Connection

PIN	1	2	3	9	10	11	12
SINGLE	+Vin	NC	NC	NC	-Vout	+Vout	-Vin
DUAL	+Vin	-Vout	COM	NC	COM	+Vout	-Vin