



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



### FEATURES:

- 24PIN DIL PACKAGE
- Low Ripple & Noise
- High Efficiency up to 85%
- Unregulated & Regulated Output Types
- Internal SMD Construction ● No External Component Required
- Operating Temperature:-40°C TO +85°C ● 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	%TYP
52D-XXS05RNL	5	360	58
52D-XXS05NNL	5	360	70
52D-XXD05NNL	±5	±180	70
52D-XXS09RNL	9	200	60
52D-XXS09NNL	9	200	70
52D-XXD09NNL	±9	±100	70
52D-XXS12RNL	12	150	60
52D-XXS12NNL	12	150	75
52D-XXD12RNL	±12	±75	60
52D-XXD12NNL	±12	±75	75
52D-XXS15RNL	15	120	60
52D-XXS15NNL	15	120	75
52D-XXD15RNL	±15	±60	60
52D-XXD15NNL	±15	±60	75
52D-XXS24RNL	24	75	60
52D-XXS24NNL	24	75	80
52D-XXD24RNL	±24	±38	60
52D-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	%

### General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Switching Frequency	Full load,nominal input		50		KHz
Operating Temperature		-40		85	°C
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F@25°C	2500000			Hours
MTBF	MIL-HDBK-217F@25°C (Regulated)	1500000			Hours
Weight			15.5		g
Dimensions			31.80x20.30x10.20		mm



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### Temperature Derating Graph

### 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

#### REGULATED

#### UNREGULATED

### Part Number

52D - 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

### Markings and dimensions

31.80  
10.20  
4.0  
4.54 17.78 5.08 0.5 DIA  
2.54  
15.20 20.30

### Packaging

UNIT:mm

SIZE(mm)		
A	B	C
18.71	23.00	522

UNIT:mm Unless otherwise specified,all tolerances are  $\pm 0.25$

PIN Connection												
PIN	1	2	3	10	11	12	13	14	15	22	23	24
Single	+Vin	NC	NC	-Vout	+Vout	-Vin	-Vin	+Vout	-Vout	NC	NC	+Vin
Dual	+Vin	-Vout	Com	Com	+Vout	-Vin	-Vin	+Vout	Com	Com	-Vout	+Vin

<http://www.yuan-dean.com>  
<http://www.yuandean.com>

E-mail:[yds.tech@msa.hinet.net](mailto:yds.tech@msa.hinet.net)  
 E-mail:[yds@yds.com.tw](mailto:yds@yds.com.tw)

Tel:886-6-2512628  
 Fax:886-6-2511858

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