Yuan Dean Scientific CO.,LTD 13DS4 SERIES

1000Vdc Isolation Single & Dual Output 1watt Dc-Dc Converter

FEATURES:

RoHS Compliant

- Small Footprint
- 22PIN SMD Package
- High Efficiency up to 80%
- Unregulated Output Types
- High Power Density
- No External Component Required
- Operating Temperature:-40℃ TO +85℃
- 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	Package Style
	Vdc	mA	% TYP	
13DS4-XXS03NNL	3.3	303	65	1
13DS4-XXS05NNL	5	200	70	1
13DS4-XXS09NNL	9	112	75	1
13DS4-XXS12N2NL	12	84	78	2
13DS4-XXS15N2NL	15	67	80	2
13DS4-XXD03NNL	±3.3	±150	65	1
13DS4-XXD05NNL	±5	±100	70	1
13DS4-XXD09NNL	±9	±56	75	1
13DS4-XXD12N2NL	±12	±42	78	2
13DS4-XXD15N2NL	±15	±34	80	2

Note:1."XX" Is Input Voltage:03=3.3Vdc,05=5Vdc, 09=9Vdc,12=12Vdc, 15=15Vdc. 2. Over 12Vdc,15Vdc input voltage, using the 2nd package.
3.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 (10% To 100% F.L)		15		%
Load Regulation	5V,9V (10% To 100% F.L)			12&8.0	%
Load Regulation	12V,15V (10% To 100% F.L.)			8.5&7.0	%
Ripple & Noise	BW=DC To 20MHz			75	mVp-p
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℃	3500000			Hours
Weight	Package1 or Package2		1.8		g
Dimensions	Package 1	15.24x8.0x7.30			mm
Dimensions	Package 2	15.24x8.0x8.50			mm

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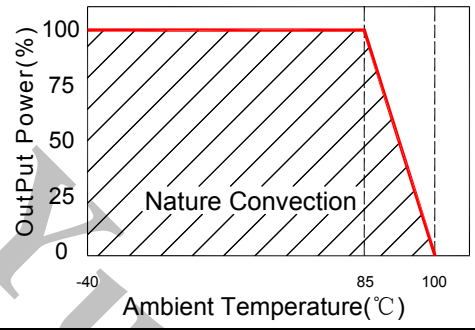
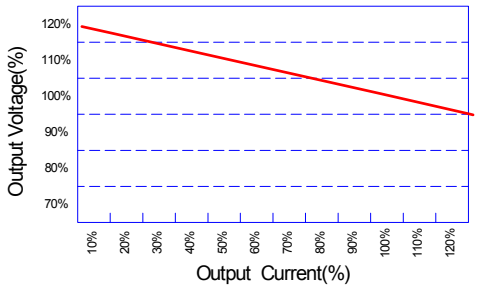
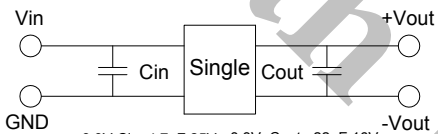
Temperature Derating Graph



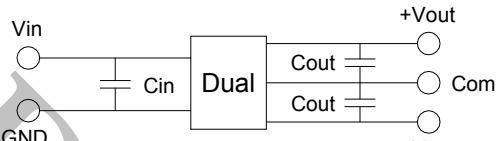
Tolerance Envelope Graph



Recommended Test Circuit



3.3V:Cin	4.7uF,25V	3.3V :Cout	22uF,16V
5V :Cin	4.7uF,25V	5V :Cout	10uF,25V
9V :Cin	4.7uF,25V	9V :Cout	4.7uF,25V
12V:Cin	2.2uF,25V	12V:Cout	2.2uF,25V
15V:Cin	1uF,5 0V	15V:Cout	1uF,50V



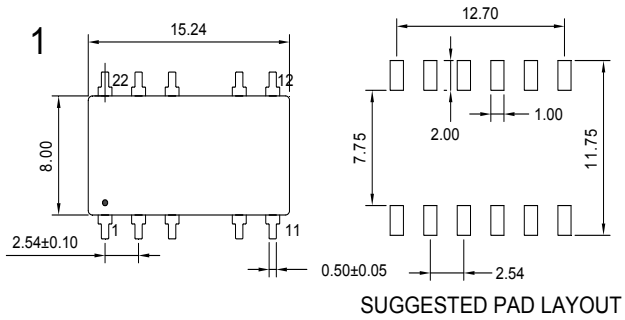
3.3V:Cin	4.7uF,25V	3.3V :Cout	22uF,16V
5V :Cin	4.7uF,25V	5V :Cout	10uF,25V
9V :Cin	4.7uF,25V	9V :Cout	4.7uF,25V
12V :Cin	2.2uF,25V	12V:Cout	2.2uF,25V
15V:Cin	1uF,50V	15V:Cout	1uF,50V

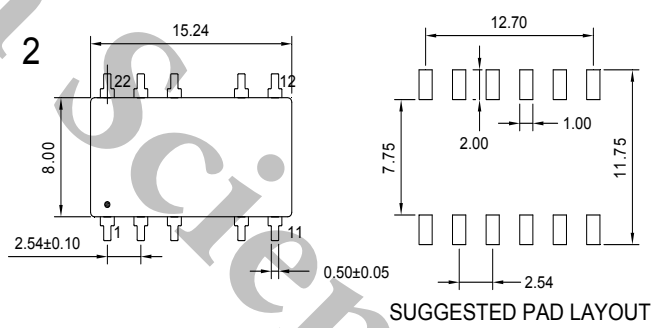
Part Number

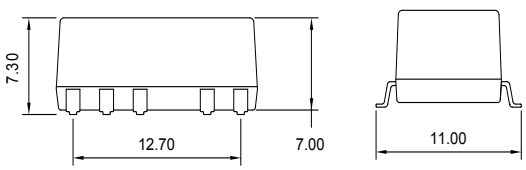
13DS4	-	05	S	12	N	2	NL
A		B	C	D	E	F	G

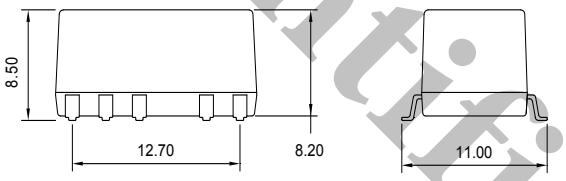
A:Series
B:Input Voltage
C:Single(S)Dual(D)
D:Output Voltage
E:Unregulated(N)
F:Packge
G:RoHS Version

Markings and Dimensions









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

PIN Connection

PIN	1	3	5	9	11	12	14	18	20	22
Single	-Vin	+Vin	NC	-Vout	NC	NC	+Vout	NC	NC	NC
Dual	-Vin	+Vin	NC	Com	-Vout	NC	+Vout	NC	NC	NC

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