

**FEATURES :**

- 14PIN DIL Package
- High Efficiency up to 85%
- Internal SMD Construction
- Unregulated Output Types
- 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	Package Style	Recognized By UL 60950-1
	Vdc	mA	%Typ		
22D-XXS03NNL	3.3	303	70	1	
22D-XXS05NNL	5	200	70	1	
22D-XXS09NNL	9	112	75	1	
22D-XXS12NNL	12	84	78	1	
22D-XXS15NNL	15	67	80	1	
22D-XXS24NNL	24	42	82	1	22D-05D05NNL
22D-XXD03NNL	±3.3	±150	70	1	22D-05D12NNL
22D-XXD05NNL	±5	±100	70	1	22D-05D15NNL
22D-XXD09NNL	±9	±56	75	1	22D-05D24NNL
22D-XXD12NNL	±12	±42	78	1	22D-12D12NNL
22D-XXD15NNL	±15	±34	80	1	22D-12D15NNL
22D-XXD24NNL	±24	±21	82	1	22D-24D05NNL
22D-XXS05N2NL	5	200	70	2	22D-24D12NNL
22D-XXS09N2NL	9	112	75	2	22D-24D24NNL
22D-XXS12N2NL	12	84	78	2	
22D-XXS15N2NL	15	67	80	2	
22D-XXS24N2NL	24	42	82	2	
22D-XXD05N2NL	±5	±100	70	2	
22D-XXD09N2NL	±9	±56	75	2	
22D-XXD12N2NL	±12	±42	78	2	
22D-XXD15N2NL	±15	±34	80	2	
22D-XXD24N2NL	±24	±21	82	2	

**Note:**

- 1."XX" Is Input Voltage:03 = 3.3Vdc,05=5Vdc,09=9Vdc,12=12Vdc,15=15Vdc.24=24Vdc, 48=48Vdc.
2. Over 48Vdc 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				



DC-DC Converter

22D SERIES

1Watt

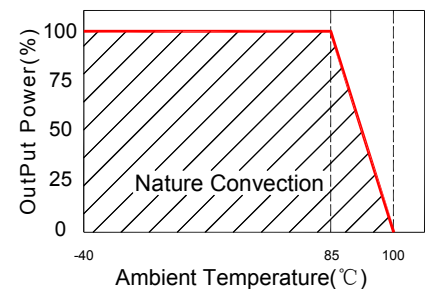
1KV Isolated

Single & Dual Output

DIL14



**Temperature Derating Graph**



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TEL : 886-6-3842899 FAX : 886-6-3843288  
E-MAIL : ydsweb@yds.com.tw

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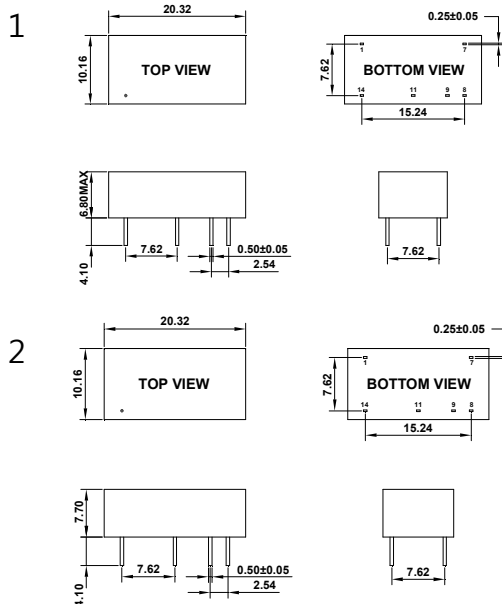
Output Specifications

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

General Specifications

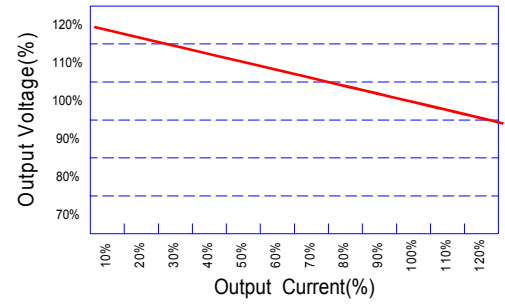
Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Switching Frequency	Full load, nominal input		100		KHz
Operating Temperature		-40		+85	°C
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F @25°C	3500000			Hours
Weight	Package 1 or Package 2		2.3 or 2.8		g
Dimensions	Package 1		20.32x10.16x6.80		mm
Dimensions	Package 2		20.32x10.16x7.70		mm

Markings and dimensions



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

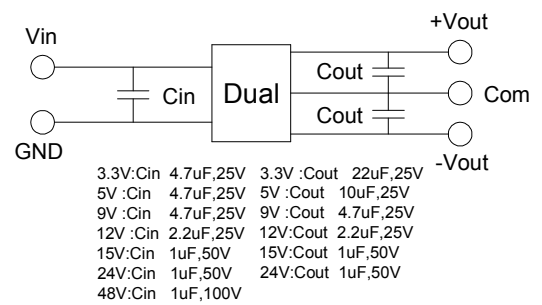
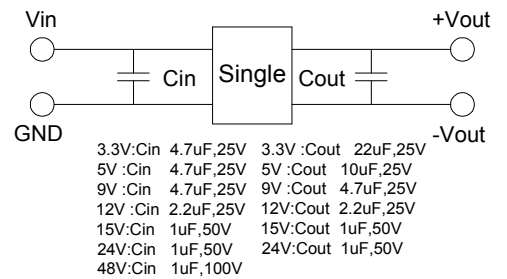
Tolerance Envelope Graph



Part Number

22D - 05 D 05 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:Package  
G:RoHS Version

Recommended Test Circuit



PIN Connection

PIN	1	7	8	9	11	14
Single	-Vin	NC	-Vout	+Vout	NC	+Vin
Dual	-Vin	NC	COM	+Vout	-Vout	+Vin

