



1000Vdc Isolation Single&Dual Output 2 Watt Dc-Dc Converter



FEATURES:

- 14PIN DIL Package
- High Efficiency up to 85%
- Recognized By UL 60950-1
- 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
	Vdc	mA	%TYP
24D-XXS05NNL	5	400	70
24D-XXS09NNL	9	222	75
24D-XXS12NNL	12	167	80
24D-XXS15NNL	15	133	80
24D-XXS24NNL	24	84	85
24D-XXD05NNL	±5	±200	70
24D-XXD09NNL	±9	±111	75
24D-XXD12NNL	±12	±84	80
24D-XXD15NNL	±15	±67	80
24D-XXD24NNL	±24	±42	85

Note:1."XX" Is Input Voltage:03=3.3Vdc, 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

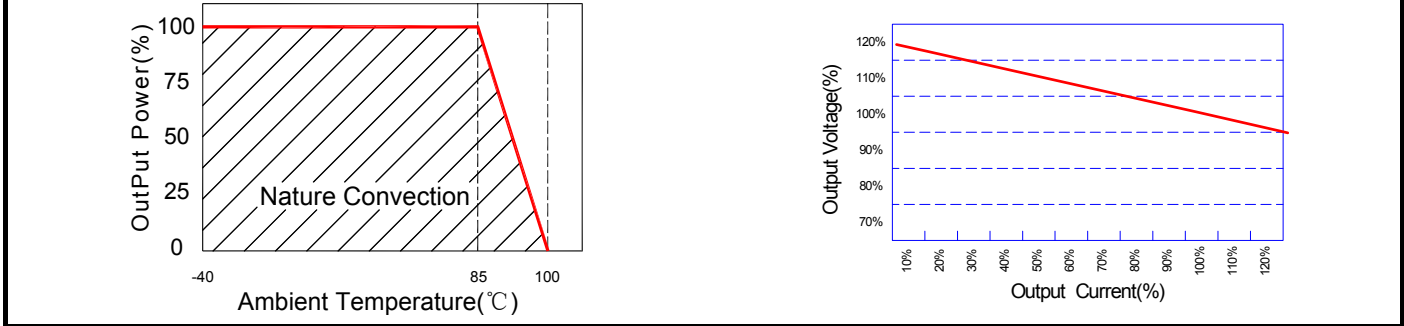
Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% full load			± 5	%
Short Circuit Protection	Short Term			1 Sec	
Line Regulation	For 1.0% OF Vin		1.2		%
Load Regulation	5V(10% To 100% F.L)			15	%
Load Regulation	9V,12V,15V,24V(10% To 100% F.L)			10	%
Ripple & Noise	BW=DC To 20MHz			100	mVp-p
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		75		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			2.8		g
Dimensions		20.32x10.16x7.70			mm



Temperature Derating Graph Tolerance Envelope Graph



Recommended Test Circuit Part Number

Single Output Test Circuit: Vin, Cin, Single, Cout, +Vout, -Vout, GND.

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
24V :Cin	1uF,50V	24V :Cout	1uF,50V

Dual Output Test Circuit: Vin, Cin, Dual, Cout, +Vout, Com, -Vout, GND.

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
24V :Cin	1uF,50V	24V :Cout	1uF,50V

Part Number: 24D - 05 D 05 N NL

A B C D E F

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

Markings and Dimensions Packaging

TOP VIEW: 20.32, 10.16

BOTTOM VIEW: 0.25±0.05, 7.62, 15.24

Packaging: A, B, C, UNIT:mm

7.70, 4.00, 7.62, 0.50±0.05, 2.54, 7.62

Size(mm)		
A	B	C
13.23	12.30	530

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

PIN Connection

14 PIN	1	7	8	9	11	14
Single	-Vin	NC	-Vout	+Vout	NO PIN	+Vin
Dual	-Vin	NC	Com	+Vout	-Vout	+Vin