

FEATURES :

- 60 Watt DIL Industry Standard Package
- 2:1Wide Input Voltage
- 100% Burned In
- High Efficiency to 88%
- Customized Solutions Available
- UL94V-0 Package Material
- Operating Temperature:-40°C to +85°C
- 3 Years Warranty

Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

Part Number	Input Voltage	Input Current (mA TYP)		Output Voltage	Output Current	Efficiency
	Vdc	No-Load	Full Load	Vdc	Full Load (mA)	%TYP
93D-12S05RNL	9-18	40	5208	5	10000	80
93D-12S12RNL	9-18	40	5882	12	5000	85
93D-12S15RNL	9-18	40	5814	15	4000	86
93D-12D05RNL	9-18	40	5144	±5	±5000	81
93D-12D12RNL	9-18	40	5747	±12	±2500	87
93D-12D15RNL	9-18	40	5747	±15	±2000	87
93D-24S05RNL	18-36	30	2572	5	10000	81
93D-24S12RNL	18-36	30	2841	12	5000	88
93D-24S15RNL	18-36	30	2841	15	4000	88
93D-24D05RNL	18-36	30	2572	±5	±5000	81
93D-24D12RNL	18-36	30	2874	±12	±2500	87
93D-24D15RNL	18-36	30	2841	±15	±2000	88
93D-48S05RNL	36-72	20	1270	5	10000	82
93D-48S12RNL	36-72	20	1420	12	5000	88
93D-48S15RNL	36-72	20	1420	15	4000	88
93D-48D05RNL	36-72	20	1270	±5	±5000	82
93D-48D12RNL	36-72	20	1437	±12	±2500	87
93D-48D15RNL	36-72	20	1437	±15	±2000	87

Input Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Types				2:1	
Filter	Pi Network				
Protection	Fuse Recommended				

YUAN DEAN SCIENTIFIC



DC-DC Converter

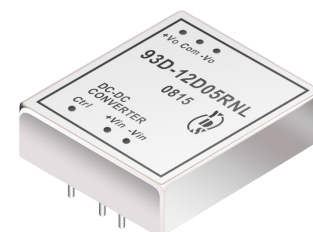
93D SERIES

60Watt 3KV Isolated

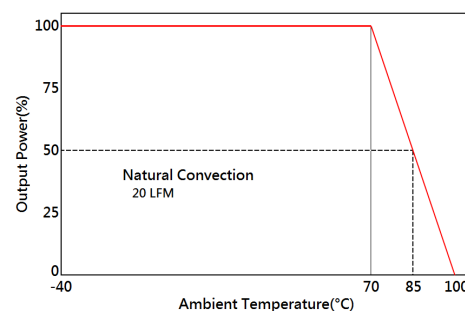
2 : 1 Input Voltage Range

Single & Dual Output

2.6" x 3"



Temperature Derating Graph



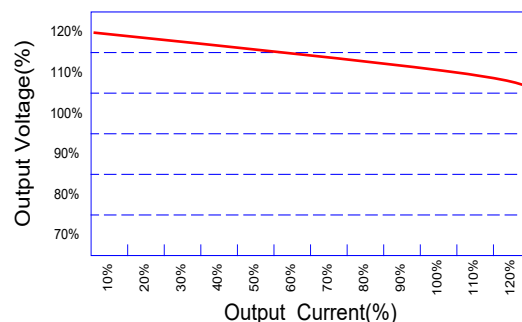
Output Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	Full load @Vin(nom.)			±2	%
Short Circuit / Restart Protection	Hiccup, automatic recovery				
Over Load Protection		120	150	180	%
Line Regulation	Single & Dual (H/L to L/L)			±0.5	%
Load Regulation	Single & Dual (Balance Load), 25% TO 100% load			±0.5	%
Cross Regulation	Dual (25% to 100% load)			±5	%
Ripple & Noise	BW=DC To 20MHz (with 1uF Cap.)			150	mVp-p
Transient response setting time	25% load step change			400	us
Capacitive load				1500	uF
External Trim Adj. Range				±10	%

General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Switching Frequency			50		KHz
Operating Temperature	With derating	-40		85	°C
Humidity	Non Condensing			95	%
Cooling	Natural Convection (20LFM)				
Case material	Six-Side Shielded Case	Nickel Coated with Non-Conductive Base			
Weight			227		g
Dimensions			76.7X66.5X21.6		mm
Potting Material	Epoxy (UL94V-0 rated)				
Radiated Emissions	EN55022		CLASS A		
Conducted Emissions	EN55022		CLASS A		
Isolation Voltage	For 10 seconds			3000	VDC
MTBF	MIL-HDBK-217F @25°C, Ground Benign	299424			Hours
Storage Temperature		-55		+125	°C
Case Temperature				+90	°C
Isolation Capacitance				2500	pF

Tolerance Envelope Graph

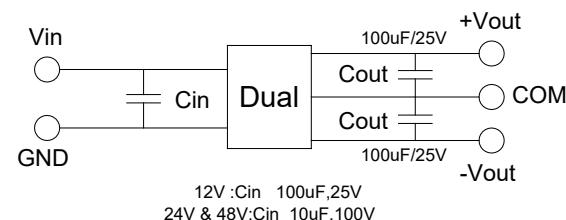
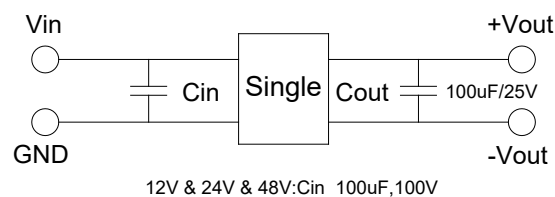


Part Number

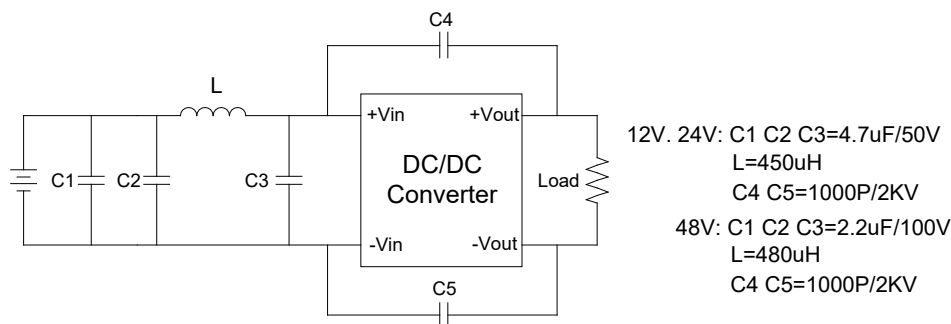
93D - 12 S 05 R NL
A B C D E F

- A: Series
- B: Input Voltage
- C: Single Output (S), Dual (D)
- D: Output Voltage
- E: Regulated (R)
- F: RoHs Version

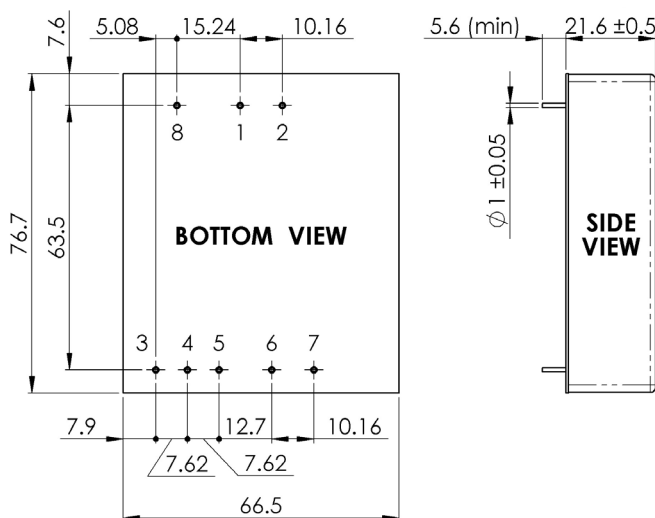
Recommended Test Circuit



Suggest adding input external filter(C1,C2,C3,C4,C5,L) to meet conducted emissions (EN55022 class A) requirement for the module . These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.



Dimensions



Unit : mm
Tolerance : XX.X ±0.5 , XX.XX ±0.25

PIN Assignment

Pin	1	2	3	4	5	6	7	8
Single	+Vin	-Vin	No Pin	Trim	No Pin	+Vout	-Vout	Remote On/Off
Dual	+Vin	-Vin	+Vout	Com	-Vout	No Pin	No Pin	Remote On/Off