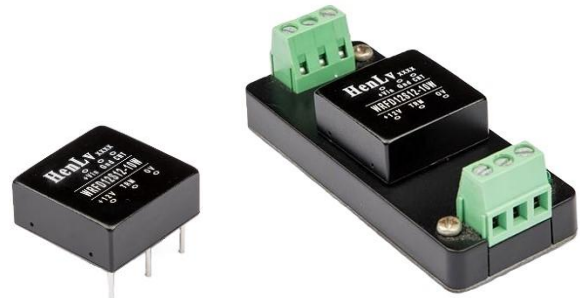


Features

- Wide voltage input 2:1
- DIP、Din Rail Series
- Working temperature : -40°C~+85°C
- Isolation 1500/3000VDC 0.5mA 1Minute
- Internal SMD design
- High flame retardant plastic shell package
- Heat dissipation mode: natural air cooling
- Good shielding anti-interference performance and electromagnetic compatibility, lightning protection, output over current, short circuit protection, overheat protection, self-recovery and other functions

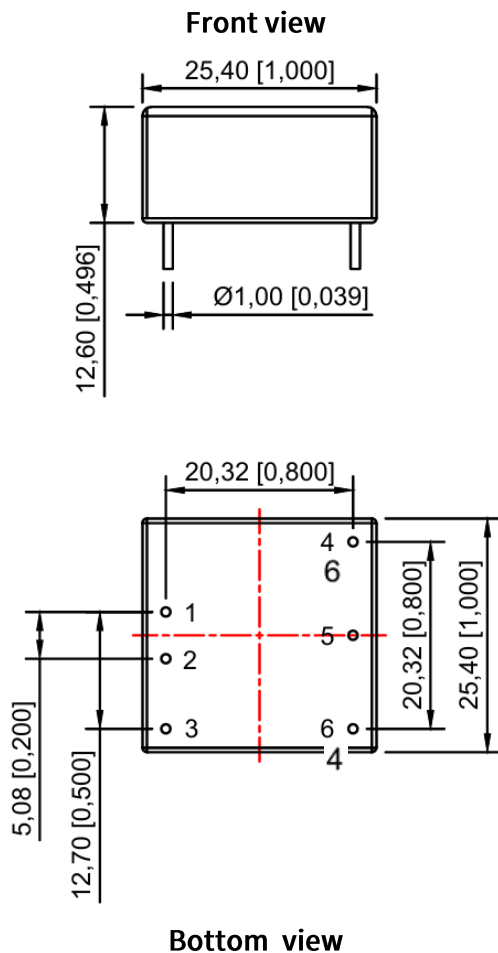
Product Picture



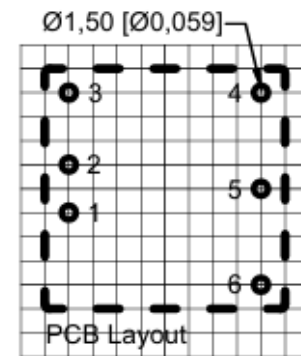
EMC-EN55032
EN55035
LVD-EN62368

Dimensions

WRFD_S(D)_{-10WH2 Series Dimensions



Top view



Note: The grid distance :2.54*2.54mm

Pin mode		
Pin	Single(S)	Dual(D)
1	Vin	Vin
2	GND	GND
3	CNT	CNT
4	0V	-XXVDC
5	TRM	COM
6	+XXVDC	+XXVDC

Note:

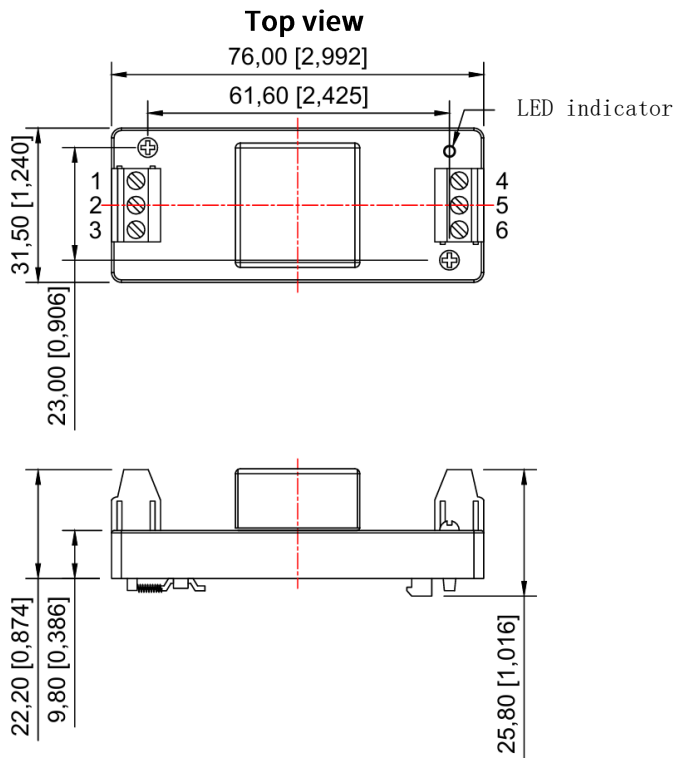
Size unit: mm[inch]

Pin section tolerance: $\pm 0.1[\pm 0.004]$

Unmarked tolerance: $\pm 0.25[\pm 0.01]$

The device layout is for reference only.

WRFD_S(D)_ZDK-10WH2 Series Dimensions



Pin mode		
Pin	Single(S)	Dual(D)
1	CNT	CNT
2	GND	GND
3	Vin	Vin
4	0V	-XXVDC
5	TRM	COM
6	+XXVDC	+XXVDC

Note:

Size unit: mm[inch]

Unmarked tolerance: $\pm 0.25[\pm 0.01]$

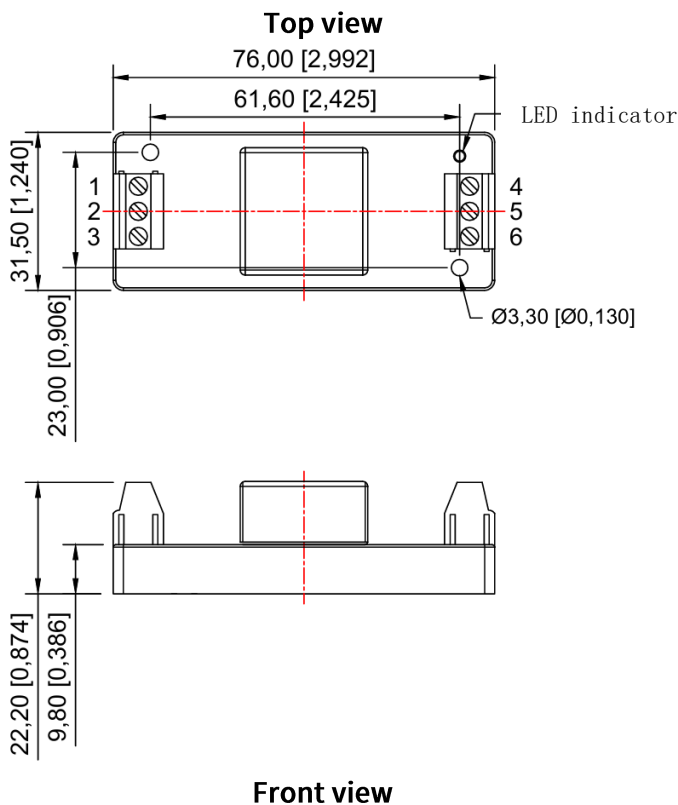
Wiring gauge: 24-12 AWG

Torque tightening: Max 0.4 N·m

Din rail type: TS35

The device layout is for reference only.

WRFD_S(D)_ZD-10WH2 Series Dimensions



Pin mode		
Pin	Single(S)	Dual(D)
1	CNT	CNT
2	GND	GND
3	Vin	Vin
4	0V	-XXVDC
5	TRM	COM
6	+XXVDC	+XXVDC

Note:

Size unit: mm[inch]

Unmarked tolerance: $\pm 0.25[\pm 0.01]$

Wiring gauge: 24-12 AWG

Torque tightening: Max 0.4 N·m

Din rail type: TS35

The device layout is for reference only.

Application

Railway communication, display, monitoring equipment, petrochemical, industrial control, remote DC power supply system, switching system and other communication equipment.

Selection Guide

Model	Vin (VDC)	Output (Vo±2%)	Current (mA)	Efficiency (%)	Isolation (VDC)
WRFD_S3.3-10WH2	5(4.5~9)	3.3	3030	≥76	1500
WRFD_S05-10WH2		5	2000	≥76	1500
WRFD_S12-10WH2		12	833	≥78	1500
WRFD_S15-10WH2		15	667	≥78	1500
WRFD_D05-10WH2		±5	±1000	≥76	1500
WRFD_D12-10WH2		±12	±417	≥78	1500
WRFD_D15-10WH2		±15	±334	≥78	1500
WRFD_S3.3ZD(K)-10WH2		3.3	3030	≥76	1500
WRFD_S05ZD(K)-10WH2		5	2000	≥76	1500
WRFD_S12ZD(K)-10WH2		12	833	≥78	1500
WRFD_S15ZD(K)-10WH2		15	667	≥78	1500
WRFD_D05ZD(K)-10WH2		±5	±1000	≥76	1500
WRFD_D12ZD(K)-10WH2		±12	±417	≥78	1500
WRFD_D15ZD(K)-10WH2		±15	±334	≥78	1500
WRFD_S3.3-10WH2	12(9-18) 24(18-36) 48(36-75)	3.3	3030	≥76	1500
WRFD_S05-10WH2		5	2000	≥76	1500
WRFD_S12-10WH2		12	833	≥78	1500
WRFD_S15-10WH2		15	667	≥78	1500
WRFD_S24-10WH2		24	417	≥83	1500
WRFD_D05-10WH2		±5	±1000	≥76	1500
WRFD_D12-10WH2		±12	±417	≥78	1500
WRFD_D15-10WH2		±15	±334	≥78	1500
WRFD_S3.3ZD(K)-10WH2		3.3	3030	≥76	1500
WRFD_S05ZD(K)-10WH2		5	2000	≥76	1500
WRFD_S12ZD(K)-10WH2		12	833	≥78	1500
WRFD_S15ZD(K)-10WH2		15	667	≥78	1500
WRFD_S24ZD(K)-10WH2		24	417	≥83	1500
WRFD_D05ZD(K)-10WH2		±5	±1000	≥76	1500
WRFD_D12ZD(K)-10WH2		±12	±417	≥78	1500
WRFD_D15ZD(K)-10WH2		±15	±334	≥78	1500

Note: Our company customizes module power supplies with any input or output for customers. If you have other output voltage requirements, please contact our company. Unless otherwise specified, the input =Vi. The characteristics of the module power supply should comply with the provisions of Table 1 and be applicable to the full temperature range (-40℃≤Tc≤85℃).

Electrical Characteristics

Characteristic	Symbol	Conditions Vi , -40°C≤Tc≤85 (Unless otherwise specified)	Min	Max	Unit
Output Voltage	Vo	Full load	Vo-2%	Vo+2%	V
Output Current	Iomax	—	—	P(Power)/ U(Output voltage)	A
Output Ripple Voltage	Vp-p	Full load, Vi, BW=20MHz, Normal Temperature		200	mV
Output Noise Voltage	Vp-p	Full load, Vi, BW=20MHz, Normal Temperature		250	mV
Voltage Regulation	Sv	Vimin, Vi, Vimax, Full load	—	±2	%
Load Regulation	Si	Vi, Io=(10%~100%), 3.3V/5V/±5V	—	±3	%
		Vi, Io=(10%~100%), other output		±2	
Efficiency	η	Vi, Full load, Normal Temperature	76	—	%
Insulation Resistance	RI	Input-output, insulation voltage 500VDC	1000	—	MΩ

Mechanical Specifications

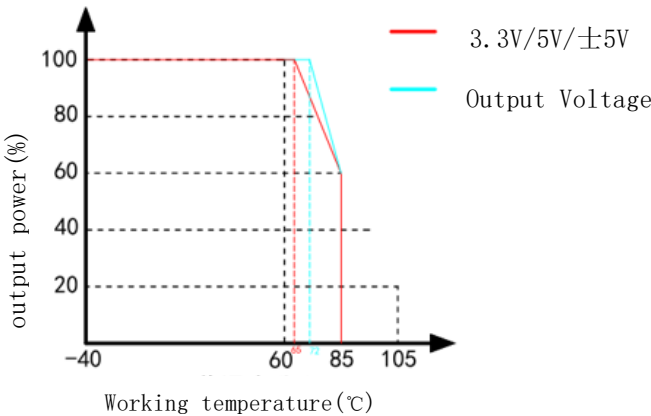
Size	25.40 x 25.40 x 12.60 mm, ZD(K): 76.00 x 31.5 mm
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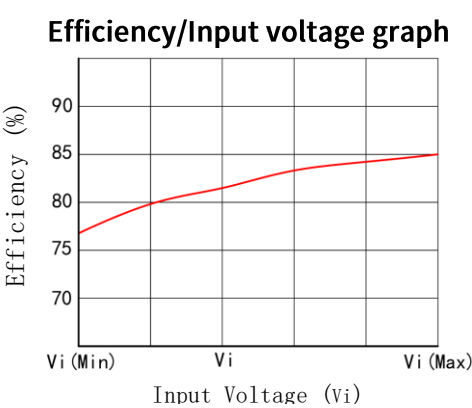
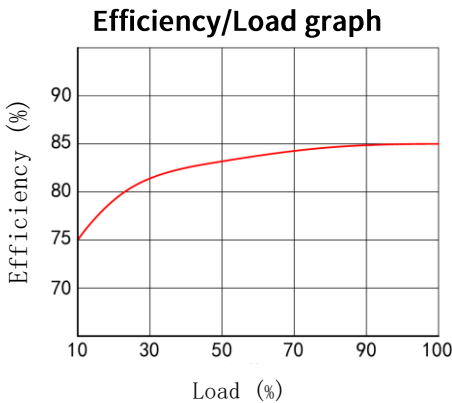
General Characteristics

EMC Specifications	Magnetic Field Sensitivity Test	GB6833.2-87
	Electrostatic Discharge Sensitivity Test	GB6833.3-87
	Radiation Sensitivity Test	GB6833.5-87
	Conduction Sensitivity Test	GB6833.6-87
Temperature Drift	≤±0.02%/°C	
Storage Temperature	-40°C~125°C	
Input Frequency	200KHz~400KHz	
Humidity	10%~90%RH	
Leakage Current	>300000 H	

Typical Characteristic Curves

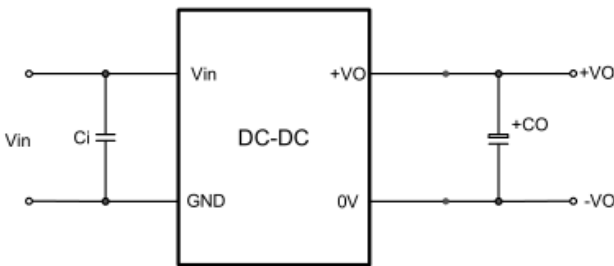
Temperature chart



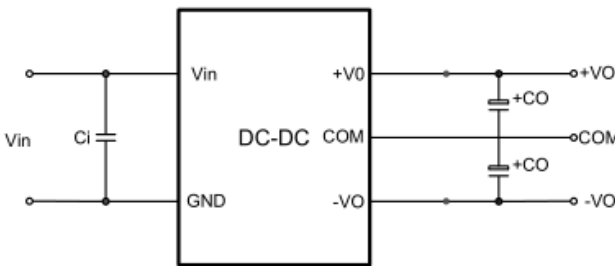


Typical Application

Design Reference



Single Output



Dual Output

Recommendation Test

Filtering: In some circuits sensitive to noise and ripple, filtering capacitors can be externally connected to the input and output terminals of the DC/DC converter to reduce the impact of ripple on the system. However, the value of the filtering capacitor should be appropriate. If the capacitor is too large, it may cause startup problems. For each output, under the condition of ensuring safe and reliable operation, the maximum capacitance value of the filtering capacitor can refer to the external capacitance table. In order to obtain very low ripple, an "LC" filtering network can be connected to the input and output terminals of the DC/DC converter, so that the filtering effect will be better. At the same time, attention should be paid to the size of the inductance value and the frequency of the "LC" filtering network itself, which should be staggered with the frequency of the DC/DC module power supply to avoid mutual interference. For each output channel, it is advisable to verify the condition of its external capacitor while ensuring safe and reliable operation. For further details, please refer to Table 1.

Vin (VDC)	Vout (VDC)	Ci (μ F)	Co (μ F)
5(4.5~9)	3.3/5	100 μ F/50V	47 μ F/16V
	12/15		22 μ F/25V
	$\pm 5/\pm 12$		22 μ F/25V
	± 15		22 μ F/50V
12(9-18) 24(18-36)	3.3/5	100 μ F/50V	47 μ F/16V
	12/15		22 μ F/25V
	24		22 μ F/50V

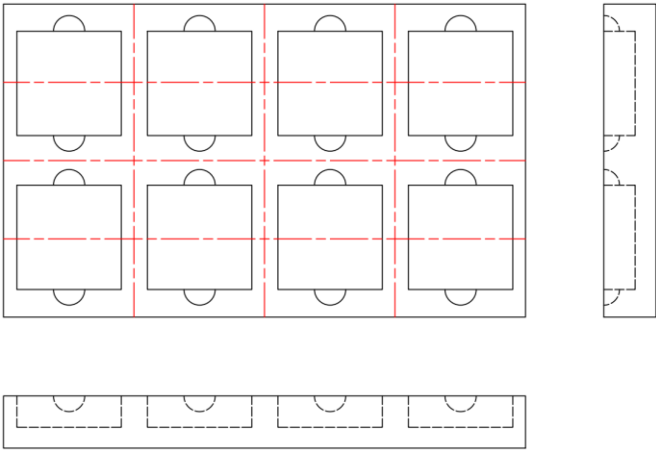
	$\pm 5/\pm 12$		22 μ F/25V
	± 15		22 μ F/50V
48(36-75)	3.3/5	47~100 μ F/100V	47 μ F/16V
	12/15		22 μ F/25V
	24		22 μ F/50V
	$\pm 5/\pm 12$		22 μ F/25V
	± 15		22 μ F/50V

The recommended values for the external filter capacitors are specified in Table 1.

Notice

Package

Shock-resistant and ESD-proof foam packaging



Transport

The package containing the module is allowed to be transported by any means of transport, which should avoid direct rain and snow and mechanical damage.

Storage

The module should be stored in a warehouse where the ambient temperature is -40 degrees ~ 125 degrees, the relative humidity is 20%~95%, and the surrounding environment is free from acidic, alkaline and other harmful gases.

Note: The above are the performance indicators of the product series listed in this manual. Some indicators of non-standard products may exceed the above requirements, so if there is any inconsistency between the manual and the product specification documents, please refer to the specification documents. If you have special needs, please contact us directly.