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# **Features**

- Wide Input 2:1
- DIP Package/Din-Rail Series
- Working Temperature: -40°C~+85°C
- Isolation 1500VDC 0.5mA 1Minute
- Internal SMD Design
- Metalshell packaging
- Cooling Nature
- Good shielding and anti-interference performance, electromagnetic compatibility, lightning protection, output overcurrent, short circuit protection, overheating protection, self recovery and other functions



**CE** EMC-EN55032

**Product Picture** 



EMC-EN55032 EN55035 LVD-EN62368

### Dimensions



### Dimensions of WRD\_S(D)\_-10WH2 Series

Top View				
Ø1,50 [Ø0,059]				
	-	30		
	2	4•		
		<b>50</b>		
PCB Layo	out			

#### Note: The grid distance is 2.54\*2.54mm

Pin Mode				
Pin	Single(S)	Dual(D)		
1	Vin	Vin		
2	GND	GND		
3	0V	-XXVDC		
4	No Pin	СОМ		
5	+XXVDC	+XXVDC		



#### **Bottom View**

Note:Unit: mm[inch] Pin Section Tolerance:  $\pm 0.1[\pm 0.004]$  General Tolerance:  $\pm 0.25[\pm 0.01]$ The device layout is for reference only.



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### WRD\_S(D)\_ZDK-10WH2 Series

Pin Mode					
Pin	Single	Dual			
1	NC	NC			
2	GND	GND			
3	Vin	Vin			
4	0V	-XXVDC			
5	NC	СОМ			
6	+XXVDC	+XXVDC			

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Note: Unit: mm[inch] General Tolerance: ±0.25[±0.01] Wire strength: 24-12 AWG Tightening torque: Max 0.4 N · m Guide type: TS35 The device layout is for reference only.

### WRD\_S(D)\_ZD-10WH2 Series



Pin Mode				
Pin	n Single(S) Dual(D)			
1	NC	NC		
2	GND	GND		
3	Vin	Vin		
4	0V	-XXVDC		
5	NC	СОМ		
6	+XXVDC	+XXVDC		

Note: Unit: mm[inch] General Tolerance:  $\pm 0.25[\pm 0.01]$ Wire strength: 24-12 AWG Tightening torque: Max 0.4 N · m The device layout is for reference only.

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### **Applications**

Railway communications, display screens, monitoring equipment, petrochemicals, industrial control, longdistance DC power supply systems, switching systems and other communication equipment, etc.

Selection Guide							
ltems	Vin (VDC)	Vout (Vo±2%)	Current (mA)	Efficiency (%)	Isolation (VDC)	Weight (g±0.5)	Certification
WRD_\$3.3-10WH2		3.3	3030	≥75	1500		
WRD_\$05-10WH2		5	2000	≥78	1500		
WRD_\$12-10WH2		12	833	≥82	1500		
WRD_\$15-10WH2	_	15	667	≥82	1500		
WRD_\$18-10WH2		18	556	≥82	1500		
WRD_S24-10WH2		24	417	≥82	1500		
WRD_S28-10WH2		28	358	≥82	1500		
WRD_D05-10WH2		±5	±1000	≥78	1500		
WRD_D12-10WH2		±12	±417	≥82	1500		
WRD_D15-10WH2	5(4.5-9)	±15	±334	≥82	1500		
WRD_D18-10WH2	12(9-18)	±18	±278	≥82	1500		
WRD_S3.3ZD(K)-10WH2	24(18-36) 48(36-72)	3.3	3030	≥75	1500		
WRD_S05ZD(K)-10WH2	110(70-150)	5	2000	≥78	1500		-
WRD_S12ZD(K)-10WH2		12	833	≥82	1500		
WRD_S15ZD(K)-10WH2		15	667	≥82	1500		-
WRD_S18ZD(K)-10WH2		18	556	≥82	1500		
WRD_S24ZD(K)-10WH2		24	417	≥82	1500		-
WRD_S28ZD(K)-10WH2		28	358	≥82	1500		
WRD_D05ZD(K)-10WH2		±5	±1000	≥78	1500		
WRD_D12ZD(K)-10WH2		±12	±417	≥82	1500		
WRD_D15ZD(K)-10WH2	1	±15	±334	≥82	1500		1
WRD_D18ZD(K)-10WH2	1	±18	±278	≥82	1500		1

Note: Our company customizes any input/output module power supply for customers. If you have special requirements, please call our company. Unless otherwise specified, the input=Vi, and the characteristics of the module power supply should comply with the provisions of Table 1 and be applicable to the full temperature range (-40 °C  $\leq$  Tc  $\leq$  85 °C)

# Mechanical Specifications Size 50.80 x 25.40 x 12.60 mm, ZD(K): 76.00 x 31.50 mm





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Electrical	Charactoristics	
LIELIILA	i characteristics	

Characteristics	Symbol	Condition Vi ,-40°C≤Tc≤85 (Unless Otherwise Specified)	Condition Vi ,-40°C≤Tc≤85 (Unless Otherwise Specified) Min		Unit	
Output Voltage	Vo	Full Load	Vo-2%	Vo+2%	v	
Output Current	lomax	_	—	P(Power)/U(Output Voltage)	Α	
Output Ripple Voltage	Vp-р	Full Load, Vi, BW=20MHz, Normal Temperature	100	240	mV	
Output Noise Voltage	Vp-р	Full Load, Vi, BW=20MHz, Normal Temperature	120	480	mV	
Voltage Regulation	Sv	Vimin、Vi、Vimax,Full Load	—	<2%	%	
Load Regulation	Si	Vi, lo=(10%~100%)lomax	—	<1%	%	
Efficiency	η	Vi, Full Load, Normal Temperature	75	_	%	
Insulation Resistance	Rl	Input/Output ,Test Voltage: 500VDC	1000	_	MΩ	

General Characteristics					
	Magnetic Field Sensitivity Test	GB-4943			
EMC Specifications	Electrostatic Discharge Sensitivity Test	GB-4943			
	Radiation Sensitivity Test	GB-4943			
	Conductivity Sensitivity Test	GB-4943			
Temperature Excursion	≪0.02%/°C				
Storage Temperature	-40°C~125°C				
Switching Frequency	270KHz~400KHz				
Humidity	10%-90%RH				
Leak Current	/				
MTBF	>500000H				

### **Product Characteristic Curves**



Error envelope graph



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### **Typical Application**

### **Design Reference**



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### **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, under safe and reliable working conditions, it is recommended that its capacitive load value be detailed in Table 1.

Single Vout	Cout	Dual Vout	Cout
5-12VDC	22-68uF	$\pm$ 5- $\pm$ 12VDC	4.7-22uF
24-48VDC	10-47uF	$\pm$ 24- $\pm$ 48VDC	4.7-10uF

Table of recommended capacitive load values (Table 1)

### Notice

### Package

This series of modules are packed with shockproof and static-proof foam.







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### Transport

The package is allowed to be transported by any means of transport, which shall avoid direct rain or snow and mechanical damage.

### Storage

The module should be stored in a warehouse with an ambient temperature of -40 ° C to 125 ° C, a relative humidity of 20% to 95%, and no acidic, alkaline, or other harmful gases in the surrounding environment.

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

