



# DC/DC 铁路机车电源模块

DC/DC Railway locomotive power supply module

## JWDHR--10W 单路输出 H 型封装系列

JWDHR--10W single output H Package type series

### 典型性能 Typical Performance

- ◆外形尺寸: 62\*46\*25 (mm)  
Dimension: 62\*46\*25 (mm)
- ◆宽输入电压范围  
Wide range input voltage
- ◆105℃长寿命电解电容  
105℃ long life electrolytic capacitors
- ◆高效率、高功率密度、低纹波  
High efficiency、High power density、Low ripple & noise
- ◆黑金属外壳, 八面屏蔽, 通孔安装  
Black metal shell, Eight face shield, Hole is installed
- ◆安规: EN60950  
Ann rules: EN60950



### 输入特性 Input Features

输入电压范围 Input voltage range	标称 110V Nominal voltage 110V 标称 72V Nominal voltage 110V(W)	66~160VDC  45~135VDC
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### 输出特性 Output Features

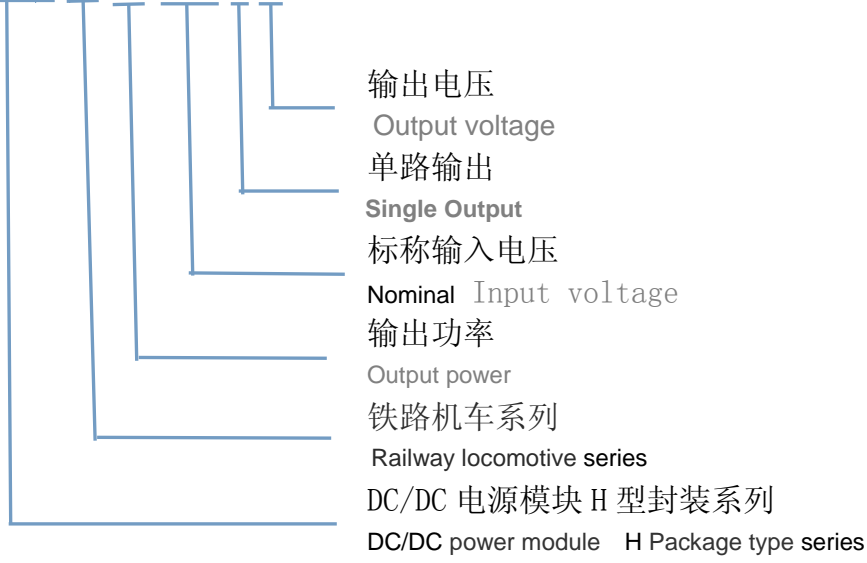
输出电压精度 Voltage tolerance	标称电压 Nominal voltage	$\leq \pm 1\%$ (3.3V、5V $\leq \pm 2\%$ )
电压调整率 Line regulation (full load)	输入电压从低端到高端变化 Change of input voltage from lowend to highend	$\leq \pm 0.5\%$
负载调整率 Load regul	20%~100%负载变化 20%~100% Load change	$V_O \leq \pm 0.5\%$
纹波噪声 Ripple&Noise	20M 带宽 20M Bandwidth	$\leq 1\%$
温度系数 Temperature coefficient		$\pm 0.02\%/^{\circ}\text{C}$
容性负载 Capacitive load	输入标称电压、满载 Input rated voltage、Fullload	见附表 As per list enclosed
过流保护 Output overcircuit Protection		115~150%额定电流, 自恢复 115~150%rated output circuit, auto recovery
短路保护 Short Circuit Protection		长期, 自恢复 Long-term, auto recovery
启动延迟时间 Turn-on delay time	输入标称电压、满载 Input rated voltage、Fullload	$\leq 300\text{ms}$
保持时间 Hold up time	输入标称电压、满载 Input rated voltage、Fullload	80ms (典型值) 80ms (typical)
过冲幅度 Overshoot	25%额定负载变化 25% rated load change	$\leq 500\mu\text{S}$
	$\Delta V_{O1} / V_{O1}$	$\leq \pm 5.0\%$

### 一般特性 General Features

隔离耐压 Withstand voltage	输入对输出 I/P-O/P (1分钟, 漏电流 $\leq 5\text{mA}$ ) (1Mintute ,leakage current) $\leq 5\text{mA}$ )	1500VDC
绝缘电阻 Isolation resistance	500V	$\geq 100\text{M}\Omega$
MTBF	环境 25℃ Environment 25℃	$2.0 \times 10^5 \text{Hrs}$
开关频率 switching frequency		300KHz
工作温度 Operating temperature	70℃以上降额使用 Above 75℃ derating make	-45℃~85℃
储存温度 Storage temperature		-45℃~105℃
工作相对湿度 Operating humidity	无凝露及结冰现象 (non condensing)	10%~90%RH
储存相对湿度 Storage humidity	无凝露及结冰现象 (non condensing)	5%~95%RH
冷却方式 Cooling method		自然冷却 Convection

## 命名方式 Naming Rules

JWDH R 10-110 S 5



## 产品选型 Product selection

产品型号 Model No.	输入电压范围 Input voltage $V_{in}$	输出电压 Output voltage $V_O$	输出电流 Output current $I_O$	纹波噪声 R & N $V_{(P-P)mV}$	最大容性负载 Capacitive load maximum	效率 Efficiency
JWDHR10-110S3.3	66~160V	3.3V	3.03A	80	3300 $\mu$ F	76%
JWDHR10-110S5		5V	2.00A	80	2200 $\mu$ F	80%
JWDHR10-110S12		12V	0.84A	100	650 $\mu$ F	82%
JWDHR10-110S15		15V	0.67A	100	470 $\mu$ F	83%
JWDHR10-110S24		24V	0.42A	120	220 $\mu$ F	85%
JWDHR10-72S3.3	45~135V	3.3V	3.03A	80	3300 $\mu$ F	76%
JWDHR10-72S5		5V	2.00A	80	2200 $\mu$ F	80%
JWDHR10-72S12		12V	0.84A	100	650 $\mu$ F	82%
JWDHR10-72S15		15V	0.67A	100	470 $\mu$ F	83%
JWDHR10-72S24		24V	0.42A	120	220 $\mu$ F	85%

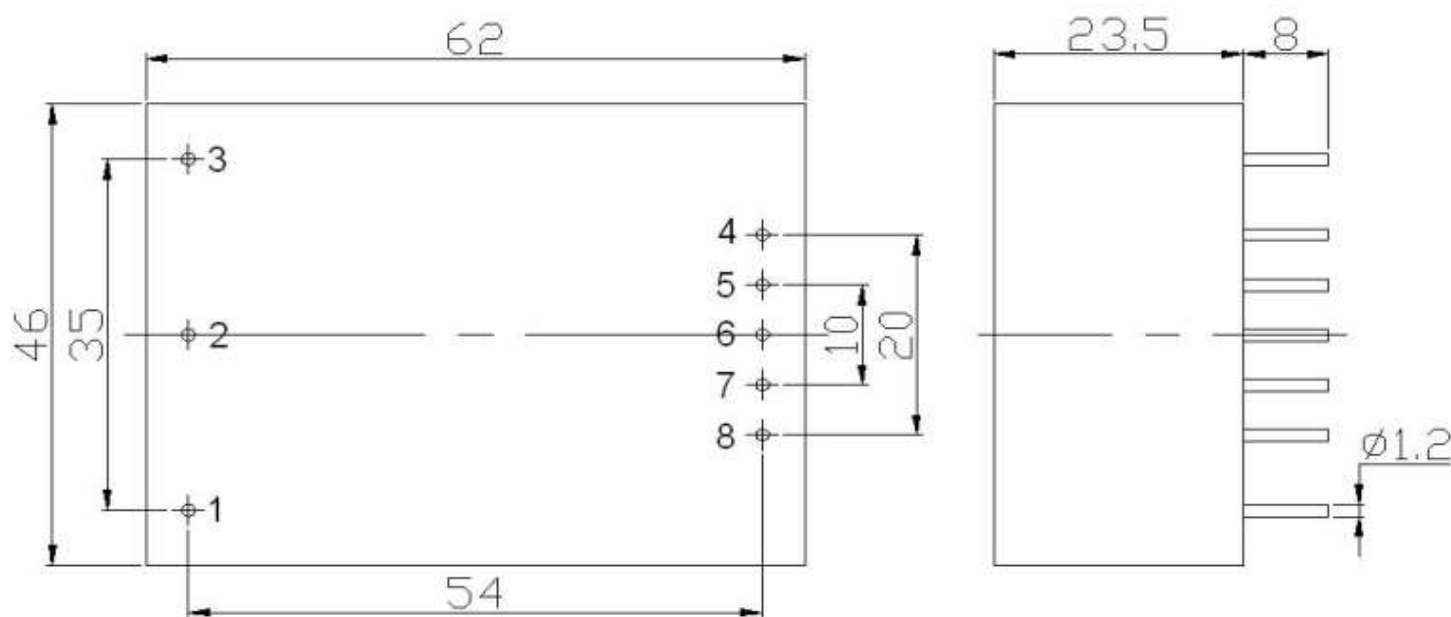
注：因篇幅有限，以上只是部分产品列表，若需列表以外产品，请与本公司销售部联系。

输出纹波噪声（峰-峰值）的测量，请参照模块测试说明中介绍的方法进行。

Note: Due to space limitations, the above list is only for some products, if other than a list of products, please contact the Company's sales department.

Output ripple noise measurement (peak - peak), please refer to the module test notes method is introduced.

## 封装尺寸图 Mechanical Data



## 管脚定义 Pin Assignments

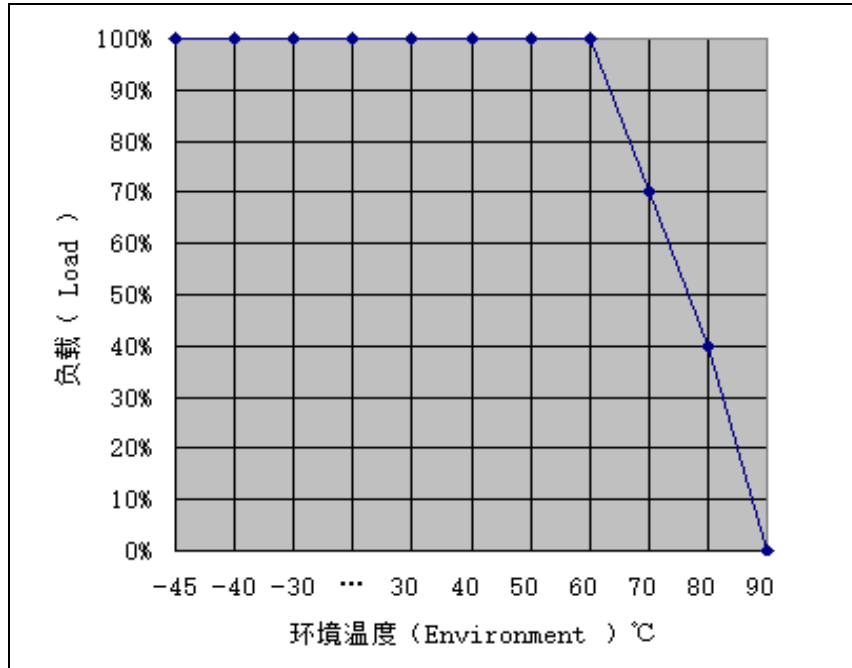
P1	P2	P3	P4	P5	P6	P7	P8
FG	$V_{in+}$	$V_{in-}$	$V_{O+}$	NP	NP	NP	GND

注：电源模块的外形尺寸和管脚定义如与选型手册不符，请以实物实际尺寸为准。

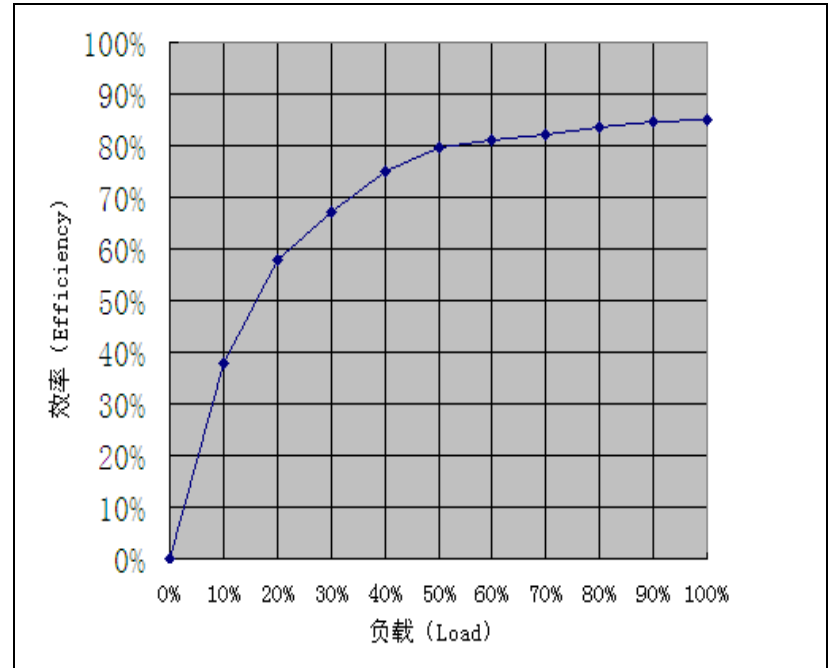
Note: Dimensions and pin definitions of power module such as inconsistent with the hand book, please in kind prevail actual size

典型曲线 Typical curve

降额曲线  
Derating curve



效率曲线  
Efficiency curve



纹波噪声测试: (靠测法 20MHz)

测试方法: 纹波&噪声用示波器来测试。测试模块噪声时为了避免引入额外噪声, 须用示波器探头直接接触模块输出引脚

