



DC/DC 铁路机车电源模块

DC/DC Railway locomotive power supply module

JWDHR--35W 三路输出 H 系列

JWDHR-35W triple output H series

典型性能 Typical Performance

- ◆外形尺寸: 92*52*28 (mm)
Dimension: 92*52*28 (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 72V	66~160VDC 45~135VDC
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输出特性 Output Features

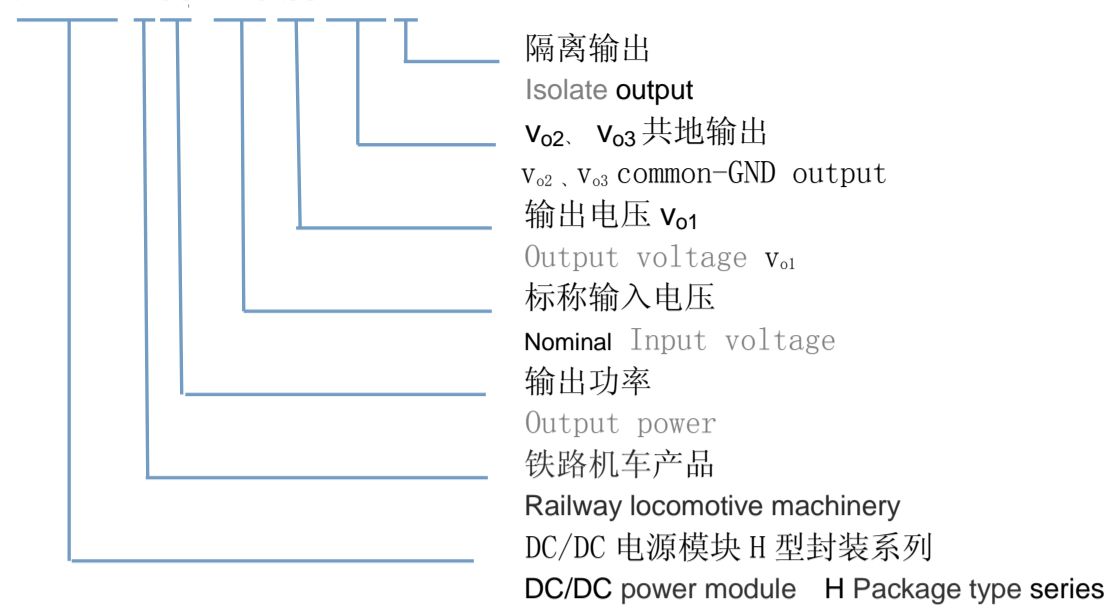
输出电压精度 Voltage tolerance	标称电压 Nominal voltage	$V_{O1} \leq \pm 1\%$ (3.3V、5V $\leq \pm 2\%$), $V_{O2} \leq \pm 3\%$, $V_{O3} \leq \pm 5\%$
电压调整率 Line regulation (full load)	输入电压从低端到高端变化 Change of input voltage from lowend to highend	$V_{O1} \leq \pm 0.5\%$, V_{O2} 、 $V_{O3} \leq \pm 1.5\%$
负载调整率 Load regul	20%~100%负载变化 20%~100% Load change	$V_{O1} \leq \pm 0.5\%$, $V_{O2} \leq \pm 3\%$, $V_{O3} \leq \pm 5\%$
纹波噪声 Ripple&Noise	20M 带宽 20M Bandwidth	$\leq 1\%$
温度系数 Temperature coefficient		$\pm 0.02\%/^{\circ}\text{C}$
过功率保护 Output overpower Protection		115~150%额定功率, 自恢复 115~150%rated output power, 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	$\leq 500\mu\text{S}$
	$\Delta V_{O1} / V_{O1}$	$\leq \pm 4.0\%$

一般特性 General Features

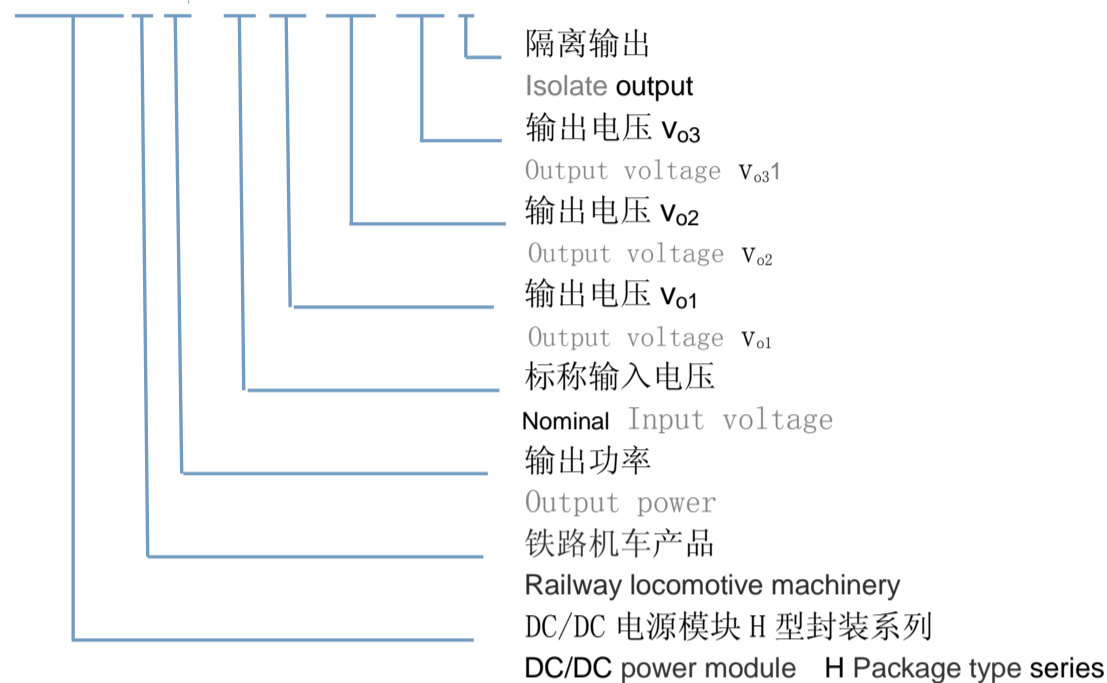
隔离耐压 Withstand voltage	输入对输出、输入对地 I/P-O/P、I/P-F/G 输出对地 O/P -F/G 输出对输出 (隔离) O/P-O/P (1分钟, 漏电流 $\leq 5\text{mA}$) (1Mintute ,leakage current) $\leq 5\text{mA}$)	3000VDC 500VDC 500VDC
绝缘电阻 Isolation resistance	500V	$\geq 100\text{M}\Omega$
MTBF	环境 25℃ Environment 25℃	$2.0 \times 10^5 \text{Hrs}$
开关频率 switching 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 R35-110 S5 D12I



JWDH R35 -72 S5 S12 S-5 I



产品选型 Product selection

产品型号 Model No.	输入电压 Input voltage V_{in}	输出电压 Output voltage V_o	输出电流 Output current I_o	输出电压精度 Output voltage tolerance	纹波噪声 R&N $V_{(P-P)mV}$	最大容性负载 Capacitive load maximum	效率 Efficiency
JWDHR35-110S5D5I	66~160V	+ 5V	0.50~5.00A	±2%	100mV	4020 μ F	78%
		+5V	0.10~1.50A	±5%	100mV	1100 μ F	
		-5V	0.10~0.50A	±5%	100mV	470 μ F	
JWDHR35-110S5D12I		+5V	0.50~5.00A	±2%	100mV	4020 μ F	81%
		+12V	0.04~0.42A	±3%	120mV	330 μ F	
JWDHR35-110S5D15I		+ 5V	0.50~5.00A	±2%	100mV	4020 μ F	81%
		+ 15V	0.03~0.33A	±3%	120mV	220 μ F	
JWDHR35-110S5D24I		+24V	0.02~0.21A	±3%	150mV	110 μ F	83%
		-24V	0.02~0.21A	±3%	150mV	110 μ F	
		+12V	0.20~2.00A	±1%	120mV	1100 μ F	
JWDHR35-110S12D5I		+5V	0.04~0.40A	±5%	100mV	470 μ F	84%
		-5V	0.04~0.40A	±5%	100mV	470 μ F	
JWDHR35-110S24D5I	+24V	0.10~1.00A	±1%	150mV	470 μ F	85%	
	+5V	0.10~1.00A	±5%	100mV	470 μ F		
JWDHR35-110S24D12I	-5V	0.1~1.00A	±5%	100mV	470 μ F	86%	
	+24V	0.10~1.00A	±1%	150mV	470 μ F		
	+12V	0.05~0.46A	±3%	120mV	220 μ F		
JWDHR35-110S5S12S-5 I	+ 5V	0.50~5.00A	±2%	100mV	3300 μ F	82%	
	+12V	0.05~0.50A	±3%	120mV	330 μ F		
	-5V	0.08~0.80A	±5%	100mV	650 μ F		
JWDHR35-72S5D5I	45~135V	+ 5V	0.30~3.00A	±2%	100mV	3300 μ F	78%
		+5V	0.10~1.00A	±5%	100mV	1100 μ F	
		-5V	0.10~1.00A	±5%	100mV	1100 μ F	
JWDHR35-72S5D12I		+5V	0.30~3.00A	±2%	100mV	3300 μ F	81%
		+12V	0.04~0.42A	±3%	120mV	330 μ F	
JWDHR35-72S5D15I		-12V	0.04~0.42A	±3%	120mV	330 μ F	81%
		+ 5V	0.30~3.00A	±2%	100mV	3300 μ F	
JWDHR35-72S5D24I		+ 15V	0.03~0.33A	±3%	120mV	220 μ F	83%
		-15V	0.03~0.33A	±3%	120mV	220 μ F	
		+ 5V	0.30~3.00A	±2%	100mV	2200 μ F	
JWDHR35-72S12D5I		+24V	0.02~0.21A	±3%	150mV	110 μ F	83%
		-24V	0.02~0.21A	±3%	150mV	110 μ F	
JWDHR35-72S24D5I	+12V	0.20~1.50A	±1%	120mV	1100 μ F	84%	
	+5V	0.06~0.60A	±5%	100mV	470 μ F		
JWDHR35-72S24D5I	-5V	0.06~0.60A	±5%	80mV	470 μ F	85%	
	+24V	0.08~0.83A	±1%	150mV	470 μ F		
	+5V	0.05~0.50A	±5%	80mV	470 μ F		
		-5V	0.05~0.50A	±5%	80mV	470 μ F	

JWDHR35-72S24D12I	45~135V	+24V	0.08~0.83A	±1%	150mV	470μF	86%
		+12V	0.02~0.20A	±3%	120mV	220μF	
		-12V	0.02~0.20A	±3%	120mV	220μF	
JWDHR35-72S5S12S-5I		+5V	0.30~3.00A	±2%	100mV	3300μF	82%
		+12V	0.05~0.50A	±3%	120mV	330μF	
		-5V	0.08~0.80A	±5%	80mV	650μF	

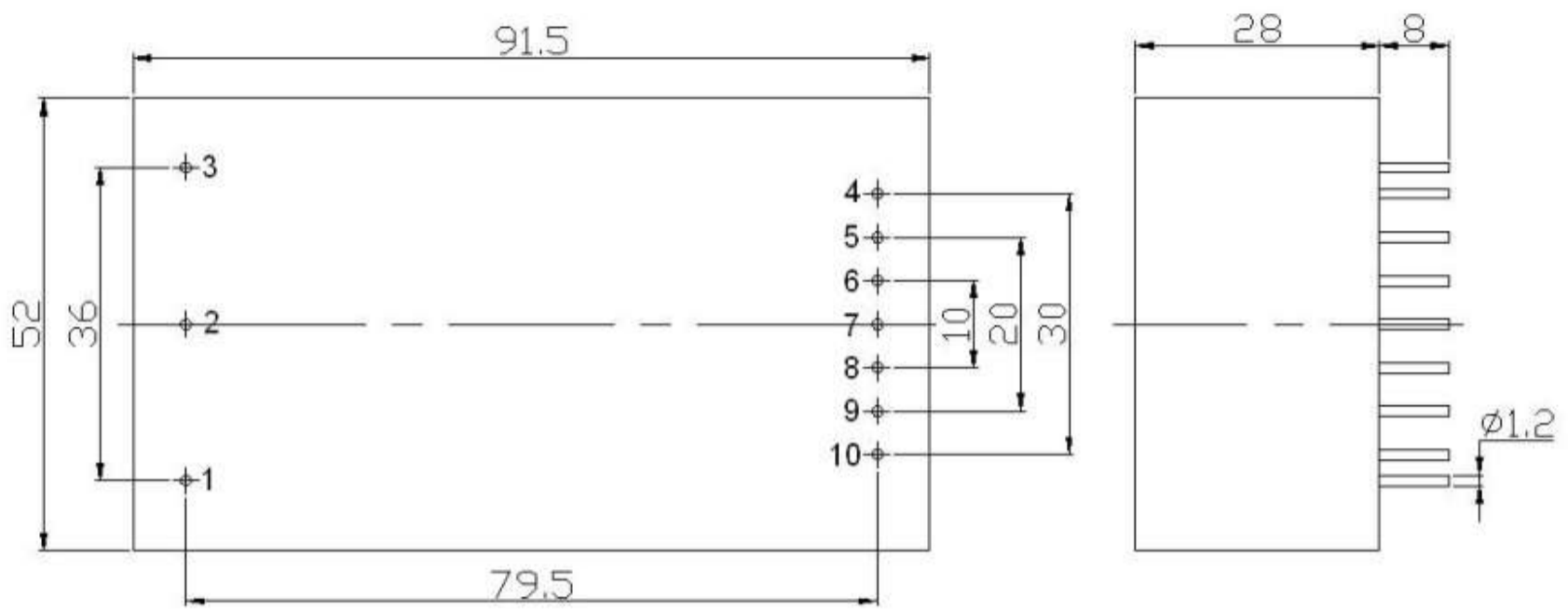
注：因篇幅有限，以上只是部分产品列表，若需列表以外产品，请与本公司销售部联系。

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 MechanicalData



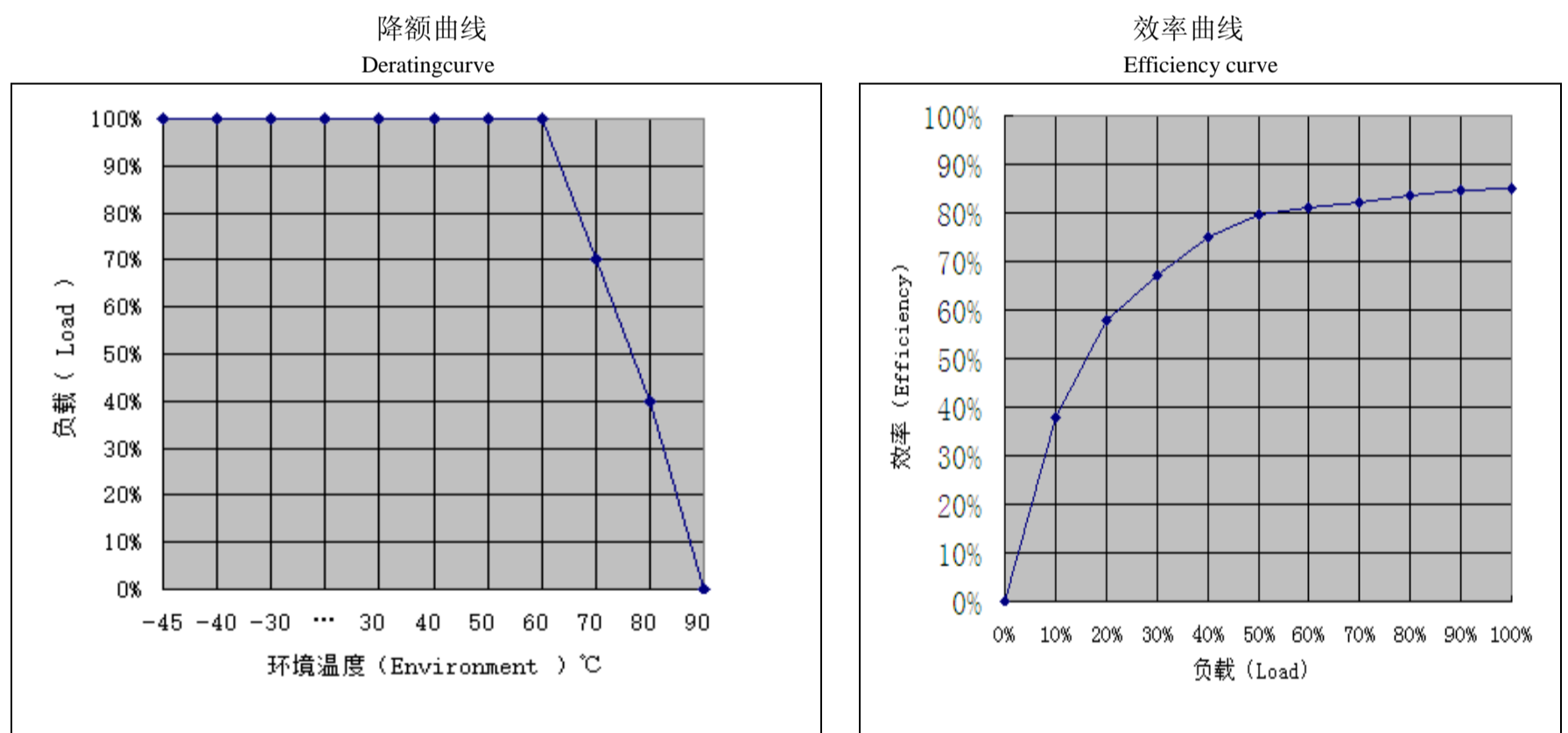
管脚定义 Pin Assignments

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
FG	V _{in+}	V _{in-}	V _{O2+}	COM	V _{O3-}	V _{O1+}	V _{O1+}	GND1	GND1

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



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

