



DC/DC 铁路机车电源模块

DC/DC Railway locomotive power supply module

JWDHR--5W 双路隔离输出 H 系列

JWDHR--5W dual isolate output H series

典型性能 Typical Performance

- ◆外形尺寸: 56*46*22 (mm)
Dimension: 56*46*22 (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 voltage110V 标称 72V Nominal voltage110V(W)	66~160VDC 45~135VDC
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输出特性 Output Features

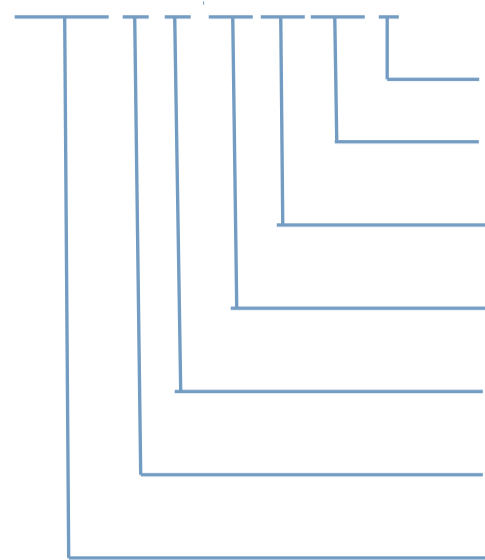
输出电压精度 Voltage tolerance	标称电压 Nominal voltage	$V_{o1} \leq \pm 1\%$ (3.3V、5V $\leq \pm 2\%$), $V_{o2} \leq \pm 3\%$
电压调整率 Line regulation (full load)	输入电压从低端到高端变化 Change of input voltage from lowend to highend	$V_{o1} \leq \pm 0.5\%$, $V_{o2} \leq \pm 1.5\%$
负载调整率 Load regul	20%~100%负载变化 20%~100% Load change	$V_{o1} \leq \pm 0.5\%$, $V_{o2} \leq \pm 3\%$
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 outputt 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	$\leq 500\mu\text{S}$
	$\Delta V_{o1} / V_{o1}$	$\leq \pm 5.0\%$

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

JWDHR 5 -72 S5 S12 I



- 隔离输出
Isolate output
- 输出电压 V_{o2}
Output voltage V_{o2}
- 输出电压 V_{o1}
Output voltage V_{o1}
- 标称输入电压
Nominal Input voltage
- 输出功率
Output power
- 铁路机车产品
Railway locomotive machinery
- DC/DC 电源模块 H 型封装系列
DC/DC power module H Package type series

产品选型 Product selectio

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
JWDHR5-110S5S5I	66~160V	+5V	0.05~0.50A	±2%	80	470 μF	76%
		+5V	0.05~0.50A	±5%	80	470 μF	
JWDHR5-110S5S12I		+5V	0.05~0.50A	±2%	80	470 μF	77%
		+12V	0.02~0.21A	±3%	100	110 μF	
JWDHR5-110S5S15I		+5V	0.05~0.50A	±2%	80	470 μF	77%
		+15V	0.01~0.17A	±3%	120	75 μF	
JWDHR5-110S5S24I		+5V	0.05~0.50A	±2%	80	470 μF	78%
		+24V	0.01~0.11A	±3%	150	50 μF	
JWDHR5-110S12S5I		+12V	0.03~0.33A	±2%	100	330 μF	78%
		+5V	0.02~0.20A	±3%	80	110 μF	
JWDHR5-110S12S12I		+12V	0.03~0.30A	±1%	100	330 μF	80%
		+12V	0.01~0.12A	±3%	100	50 μF	
JWDHR5-110S12S15I		+12V	0.03~0.30A	±1%	100	330 μF	81%
		+15V	0.01~0.10A	±3%	120	50 μF	
JWDHR5-110S12S24I	+12V	0.02~0.20A	±1%	100	110 μF	82%	
	+24V	0.01~0.10A	±3%	150	50 μF		
JWDHR5-72S5S5I	45~135V	+5V	0.05~0.50A	±2%	80	470 μF	76%
		+5V	0.05~0.50A	±5%	80	470 μF	
JWDHR5-72S5S12I		+5V	0.05~0.50A	±2%	80	470 μF	77%
		+12V	0.02~0.21A	±3%	100	110 μF	
JWDHR5-72S5S15I		+5V	0.05~0.50A	±2%	80	470 μF	77%
		+15V	0.01~0.17A	±3%	120	75 μF	
JWDHR5-72S5S24I		+5V	0.05~0.50A	±2%	80	470 μF	78%
		+24V	0.01~0.11A	±3%	150	50 μF	
JWDHR5-72S12S5I		+12V	0.03~0.33A	±2%	100	330 μF	78%
		+5V	0.02~0.20A	±3%	80	110 μF	
JWDHR5-72S12S12I		+12V	0.03~0.30A	±1%	100	330 μF	80%
		+12V	0.01~0.12A	±3%	100	50 μF	
JWDHR5-72S12S15I		+12V	0.03~0.30A	±1%	100	330 μF	81%
		+15V	0.01~0.10A	±3%	120	50 μF	
JWDHR5-72S12S24I	+12V	0.02~0.20A	±1%	100	110 μF	82%	
	+24V	0.01~0.10A	±3%	150	50 μF		

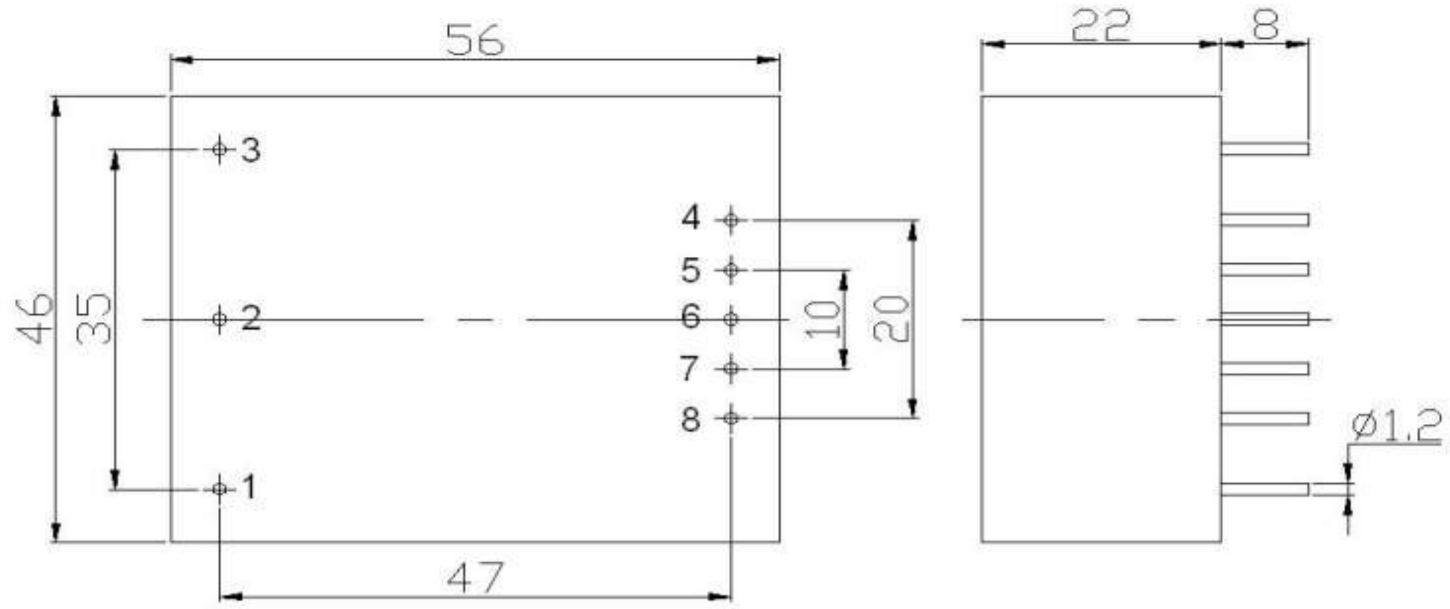
注：因篇幅有限，以上只是部分产品列表，若需列表以外产品，请与本公司销售部联系。

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

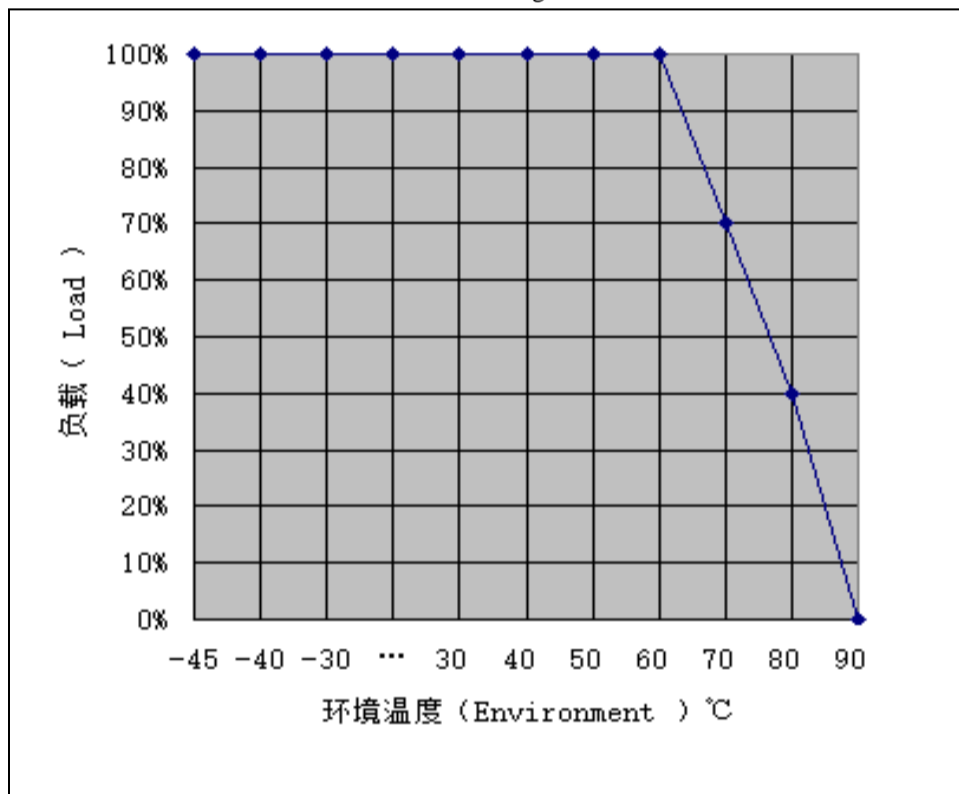
P1	P2	P3	P4	P5	P6	P7	P8
FG	V _{in+}	V _{in-}	V _{O2+}	GND2	NC	V _{O1+}	GND1

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。

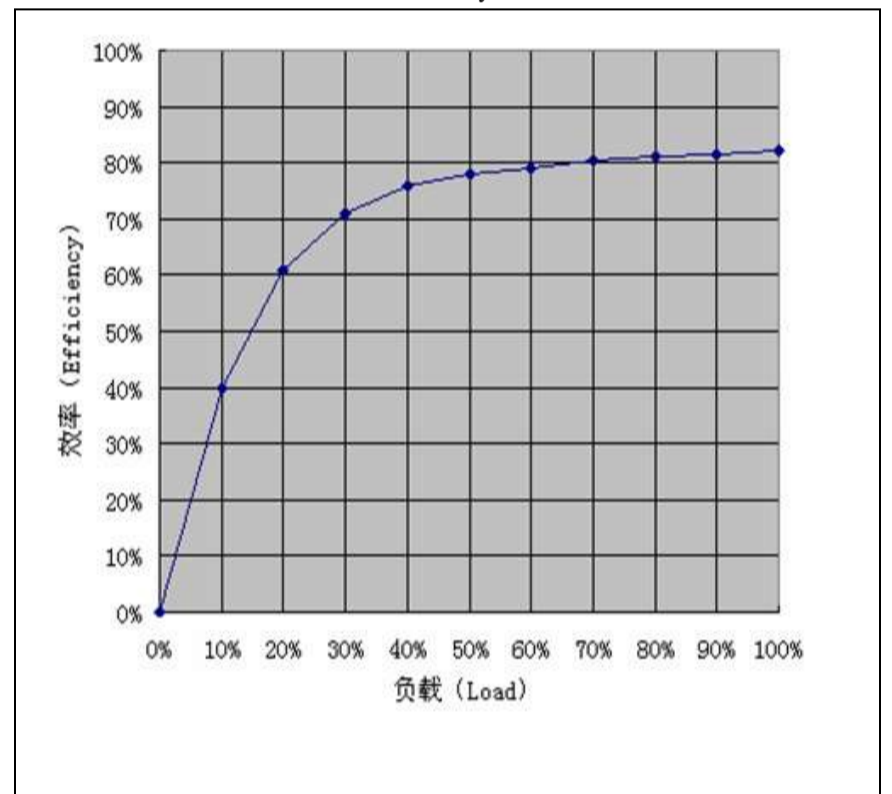
Note: Dimensions and pin definitions of power module such as inconsistent with the hand book, please in kind prevail actual size

典型曲线 Typical curve

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

