



DC/DC 铁路机车电源模块

DC/DC Railway locomotive power supply module

JWDARR--5W 双路输出系列

JWDARR--5W dual output series

典型性能 Typical Performance

- ◆外形尺寸: 25.4*25.4*10.16 (mm)
Dimension: 25.4*25.4*10.16 (mm)
- ◆宽输入电压范围
Wide range input voltage
- ◆105°C长寿命电解电容
105°C 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(W)	66~160VDC 45~135VDC
-------------------------------	---	----------------------------

输出特性 Output Features

输出电压精度 Voltage tolerance	标称电压 Nominal voltage	$\cong \pm 1\%$ (3.3V、5V $\cong \pm 2\%$), $V_{o2} \cong \pm 3\%$
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	$V_{o1} \cong \pm 0.5\%$, $v_{o2} \cong \pm 1.5\%$
负载调整率 Load regul	20%~100%负载变化 20%~100% Load change	$V_{o1} \cong \pm 0.5\%$, $v_{o2} \cong \pm 3\%$
纹波噪声 Ripple&Noise	20M 带宽 20M Bandwidth	$\cong 1\%$
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
过功率保护 Output overcpower 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
过冲幅度 Overshoot	25%额定负载变化 25% rated load change	$\cong 500\mu\text{S}$
	$\Delta V_{o1} / V_{o1}$	$\cong \pm 5.0\%$

一般特性 General Features

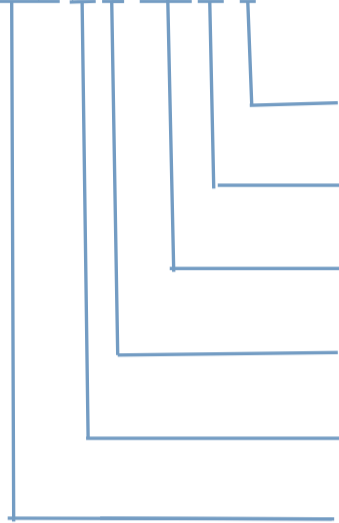
隔离耐压 Withstand voltage	输入对输出 I/P-O/P (1分钟, 漏电流 $\cong 5\text{mA}$) (1Mintute ,leakage current) $\cong 5\text{mA}$)	1500VDC
绝缘电阻 Isolation resistance	500V	$\cong 100\text{M}\Omega$
MTBF	环境 25°C Environment 25°C	2.0×10^5 Hrs
开关频率 switching frequency		300KHz
最大壳温 The highest shell temperature	工作环境温度较高时, 需加装辅助散热措施, 确保模块表面温度低于 95°C When workingenvironment temperature is higher,need to add auxiliary colling measures,to ensure that the surface temperature below 95°C	+95°C
工作温度 Operating temperature	70°C以上降额使用 Above 75°C derating make	-45°C~85°C
储存温度 Storage temperature		-45°C~105°C
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

容性负载 Capacitive Load

Vout:5V		Vout:12V、15V		Vout:24V	
推荐值 Recommendations	最大值 Maximum	推荐值 Recommendations	最大值 Maximum	推荐值 Recommendations	最大值 Maximum
630μF	1000μF	150μF	220μF	63μF	100μF

命名方式 Naming Rules

JWDAR5-110D5



输出电压
Output voltage
双路输出
Dual Output
标称输入电压
Nominal Input voltage
输出功率
Output power
铁路机车
Railway locomotive
DC/DC 电源模块 外形尺寸 25.4*25.4(mm)
DC/DC power module Dimension 25.4*25.4(mm)

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
JWDAR5-110D5	66~160V	+5V	0.05~0.50A	±2%	50mV	500uF	80%
		-5V	0.05~0.50A	±3%	100mV	500uF	
JWDAR5-110D12		+12V	0.02~0.21A	±1%	100mV	110uF	82%
		-12V	0.02~0.21A	±3%	100mV	110uF	
JWDAR5-110D15		+15V	0.02~0.17A	±1%	100mV	75uF	83%
		-15V	0.02~0.17A	±3%	100mV	75uF	
JWDAR5-110D24	+24V	0.01~0.10A	±1%	120mV	50uF	85%	
	-24V	0.01~0.10A	±3%	120mV	50uF		
JWDAR5-72D5	45~135V	+5V	0.05~0.50A	±2%	50mV	500uF	80%
		-5V	0.05~0.50A	±3%	100mV	500uF	
JWDAR5-72D12		+12V	0.02~0.21A	±1%	100mV	110uF	82%
		-12V	0.02~0.21A	±3%	100mV	110uF	
JWDAR5-72D15		+15V	0.02~0.17A	±1%	100mV	75uF	83%
		-15V	0.02~0.17A	±3%	100mV	75uF	
JWDAR5-72D24	+24V	0.01~0.10A	±1%	120mV	50uF	85%	
	-24V	0.01~0.10A	±3%	120mV	50uF		

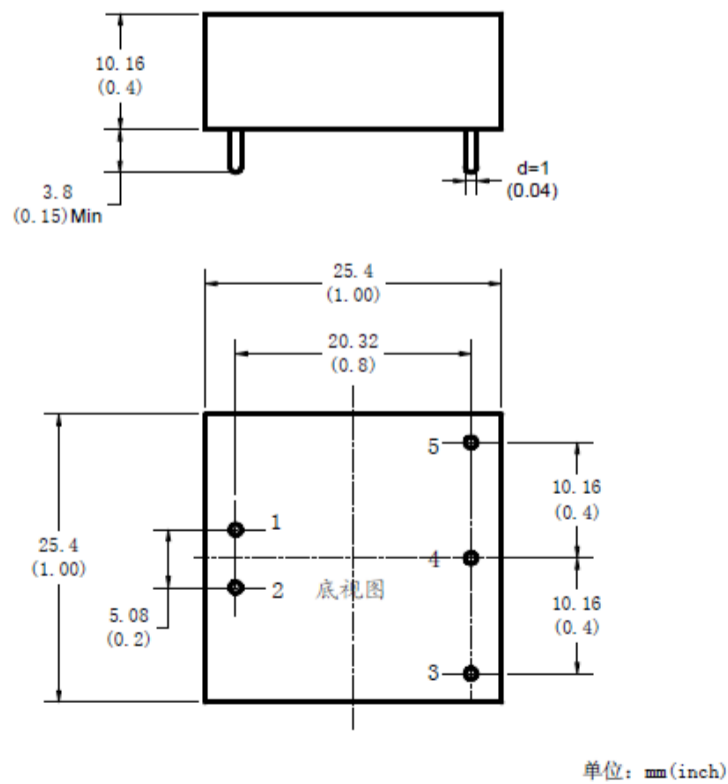
注：因篇幅有限，以上只是部分产品列表，若需列表以外产品，请与本公司销售部联系。

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 Dimensions



管脚定义 Pin Assignments

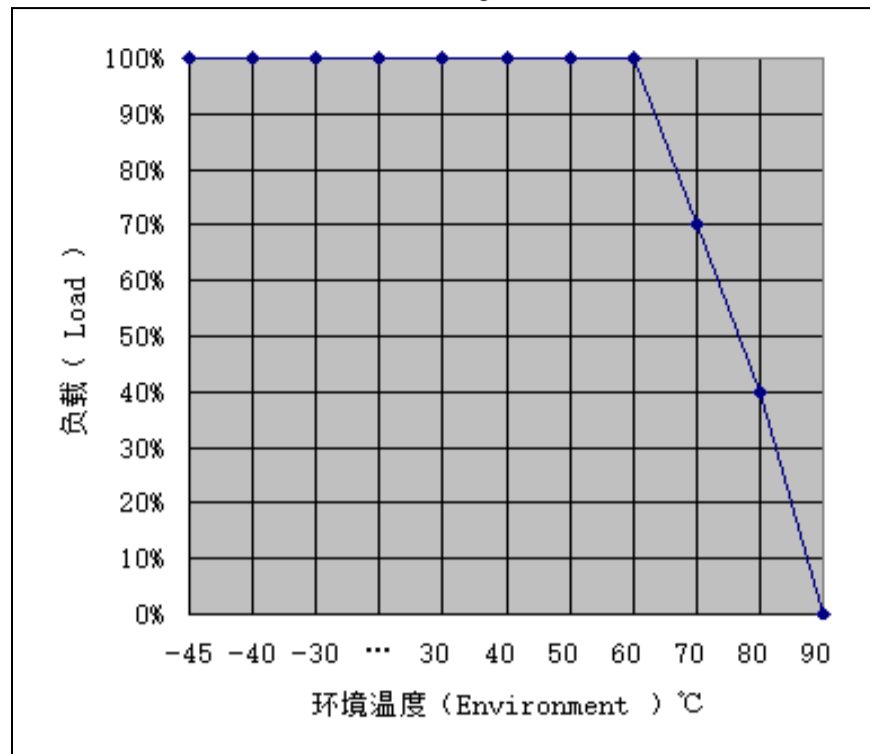
P1	P2	P3	P4	P5
V _{in+}	V _{in-}	V _{o-}	NP	V _{o+}

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。

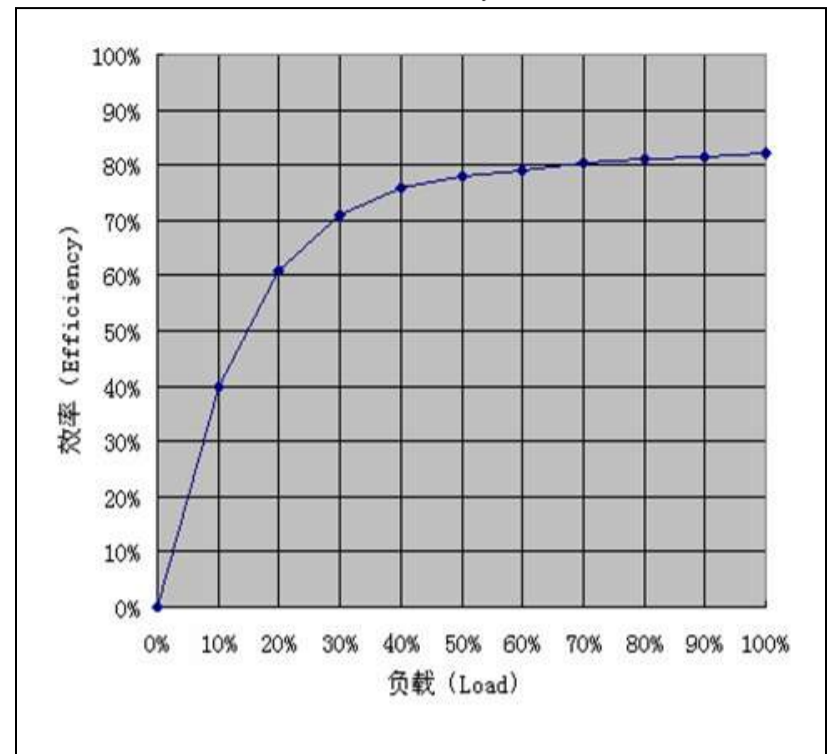
Note: Dimensions and pin definitions of power module such as inconsistent with the hand book, please in kind prevail actual size

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

