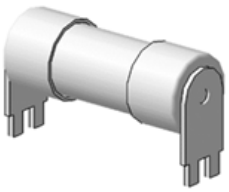
WCF0501 Series

快速熔断器 High Speed Fuse

产品信息 General Information

额定电压 Rated Voltage	AC500V/DC450V
额定电流 Rated Current	40A-125A
保护类别 Utilization Category	aR
分断能力 Breaking Capacity	20kA
时间常数 Time Constant	< 3ms
参考标准 Reference Standard	UL248, IEC60269, GB/T13539



产品认证 Certificates

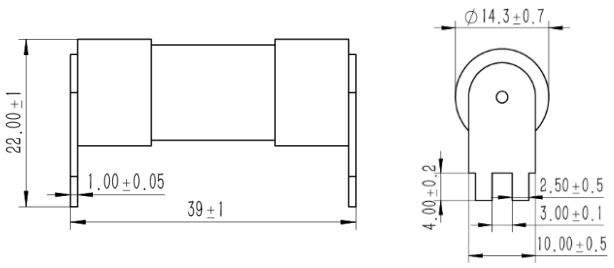
RoHS

产品参数 Parameter

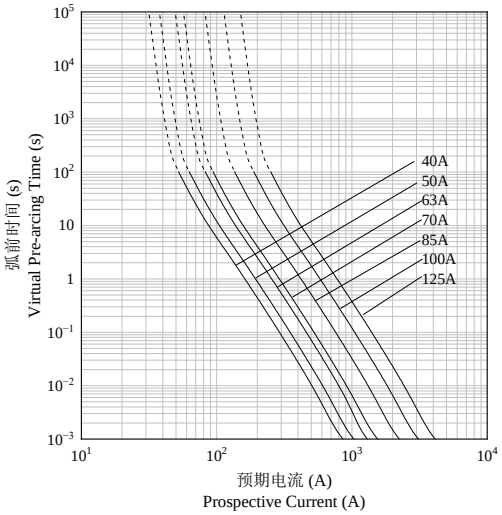
产品型号 Part Number	额定电流 In(A)	$I^2t(A^2s)$ 弧前 Prearcing	$I^2t(A^2s)$ 熔断 Clearing	功耗 Loss@In(W)	重量 Weight(g)	安装 Installation
WCF0501-40	40	680	2380	5		
WCF0501-50	50	1000	3500	7		
WCF0501-63	63	1560	5460	9		
WCF0501-70	70	2200	7700	12	22±2	PCB 焊接
WCF0501-85	85	4500	15750	15		
WCF0501-100	100	8800	30800	16		
WCF0501-125	125	15600	54600	20		

外型尺寸 Dimensions

（单位：mm）



特性曲线 Characteristic Curves



选型指南 Model Selection Guide

允许使用条件 Normal Conditions of Use

空气温度：周围空气温度-40℃～+125℃。

Air temperature: Ambient air temperature -40℃～+125℃.

空气湿度：温度 40℃时，相对空气湿度不大于 50%，在较低的温度下可以有较高的相对湿度，如在 20℃时，相对湿度可达 90%，在这些条件下，由于温度变化，可能偶尔发生中等凝露。

Air humidity: Relative air humidity of not more than 50% at 40℃. At lower temperatures there can be higher relative humidity, e.g. up to 90% at 20℃. Under these conditions, occasional moderate condensation may occur as a result of temperature changes.

海拔：正常安装海拔不超过 2000m，允许安装海拔 2000~5000m。

Altitude: Normal installation altitude should not exceed 2000m, installation at altitudes of 2000 to 5000m is permitted.

大气条件：周围空气无爆炸危险介质，无腐蚀金属及破坏绝缘的气体，无导电尘埃。

Atmospheric conditions: The surrounding air is free of explosive hazardous media, corrosive metals and insulation gas, and conductive dust.

熔断体在正常使用条件下工作，不需要额外的修正，推荐长期通流的电流值不大于额定电流的 80%。

The fuses operate under normal conditions of use without additional modifications and are recommended for long-term current values of not more than 80% of the rated current.

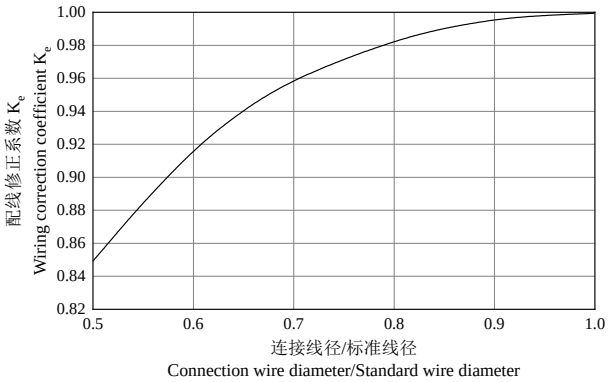
参数在超过正常使用范围时，额定电流需要额外的修正。

The rated current need extra corrections when the parameter exceeds the normal operating range.

连接电缆线径 Connection Cable Diameter

熔断器标准（IEC60269）建议熔断体的连接线径的电流密度在 1.0～1.6A/mm^2 之间，并随熔断体的额定电流而变化，为便于计算，人们认为 1.3A/mm^2 为参考值（100%），如果连接电缆线径小于建议值，应按下图中的配线修正系数 K_e 对熔断体的额定电流进行修正。

The fuse standard (IEC60269) recommends a current density of 1.0-1.6 A/mm^2 for the connecting wire diameters of the fuse body, which varies with the rated current of the fuse body. For the purpose of the calculations, it is considered that 1.3 A/mm^2 is the reference value (100%), and that if the connecting cable diameters are smaller than the recommended value, the rated current of the fuse body should be corrected according to the wiring correction coefficient K_e shown in the following figure.



海拔 Altitude

海拔在 2000m 以下不需要降容，超过 2000m 以后海拔每升高 100m 降容 0.5%，海拔修正系数 K_a 亦可参考下表。

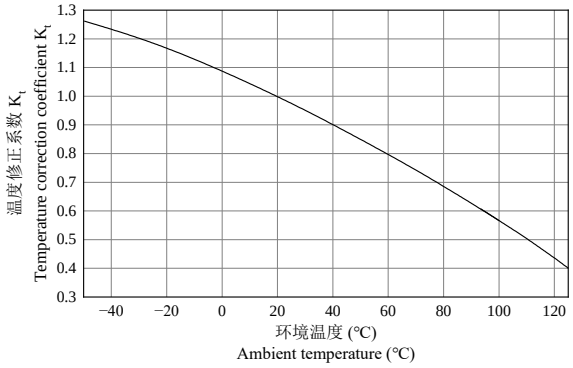
Elevation in 2000m or less do not need to reduce the capacity, more than 2000m after the elevation of every 100m to reduce the capacity of 0.5%, the elevation correction coefficient K_a can also refer to the following table.

海拔高度 Altitude	海拔修正系数 Elevation correction factor
2000	1
2500	0.975
3000	0.950
3500	0.925
4000	0.900
4500	0.875
5000	0.850

温度条件 Temperature Condition

温度超出正常使用范围时，可按下图查出温度修正系数 K_t 对熔断体的额定电流进行修正。

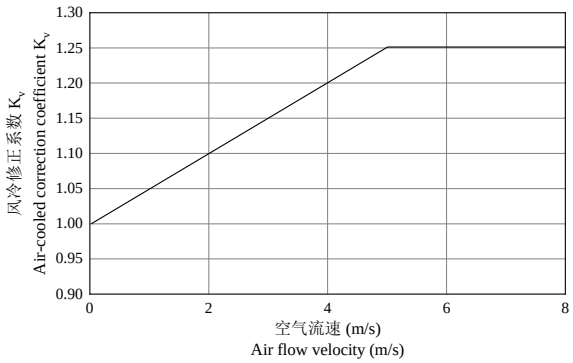
If the temperature is out of the normal operating range, the temperature correction factor K_t can be found in the following chart to correct the rated current of the fuse body.



冷却条件 Cooling Condition

如果采用风冷方式对工作中的熔断器进行降温，按下图的风速修正系数 K_v 对熔断体的额定电流进行修正；封闭环境下的 K_v=0.8。

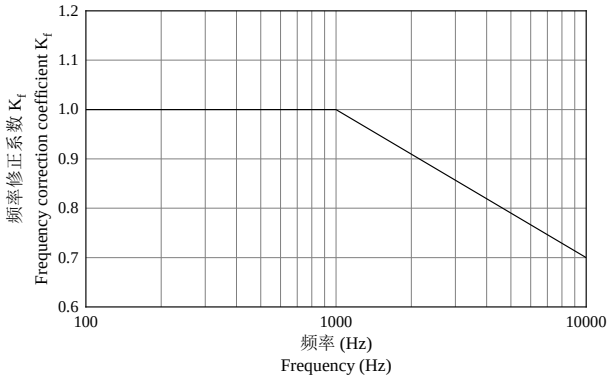
If air-cooling is used to cool down the fuse in operation, the rated current of the fuse body is corrected by the air speed correction factor K_v in the following figure; K_v = 0.8 in a closed environment.



频率条件 Frequency Condition

半导体熔断体的交流额定工作频率为 50 或 60Hz，当工作频率达 1000Hz 在以上时，需按下图的频率修正系数 K_f 对熔断体的额定电流进行修正。

Semiconductor fuses are rated for AC operation at 50 or 60 Hz. When the operating frequency reaches 1000 Hz or more, the rated current of the fuse should be corrected according to the frequency correction coefficient K_f as shown in the figure below.



选型实例 Selection Example

熔断体允许工作电流与额定电流的关系 Relationship between permissible operating current and rated current of fuse

参数超出正常使用范围时，熔断体的允许工作电流 I_b 与额定电流 I_n 的关系如下。

If the parameters are outside the normal operating range, the permissible operating current I_b of the fuse body is related to the rated current In as follows.

$$I_b=I_n\times K_e\times K_a\times K_t\times K_v\times K_f$$

例如：一个额定电流为 200A（I_n=200A）的方管熔断体在连接电缆为 120mm^2（导线线径参考值 1.3A/mm^2 的 78%，K_e=0.98），海拔为海平面附近（K_a=1），环境温度为 40℃（K_t=0.9），强制风冷风速为 4m/s（K_v=1.2），工作频率为 3000Hz（K_f=0.85）的使用条件下，其最大允许通过电流为：

For example: a square tube fuse, its rated current is 200A(I_n=200A), the connecting cable is 120mm^2, (wire diameter is 78% of the reference value of 1.3 A/mm^2, K_e=0.98), the altitude is near sea level, the ambient temperature is 40℃(K_t=0.9), the forced air cooling wind speed is 4m/s(K_v=1.2), the operating frequency is 3000Hz(K_f=0.85), the maximum permissible through current is

$$I_b=200\times 0.98\times 1\times 0.9\times 1.2\times 0.85=180A$$

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Product Specification Statement

1.The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

2.The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

3.WAYON strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, WAYON cannot guarantee that the information provided in the product specification is entirely accurate and error-free. WAYON shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications. WAYON reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with WAYON to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult WAYON in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

4.Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

5.The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. WAYON shall assume no responsibility for any consequences resulting from such usage.

6.Users should also comply with relevant laws, regulations, policies, and standards when using the product specification. Users are responsible for the risks and liabilities arising from the use of the product specification and must ensure that it is not used for illegal purposes. Additionally, users should respect the intellectual property rights related to the product specification and refrain from infringing upon any third-party legal rights. WAYON shall assume no responsibility for any disputes or controversies arising from the above-mentioned issues in any form.