

## Specifications 技术参数

14x51mm Cylindrical Fuses

### Ratings 电气参数:

Photovoltaic Fuses

- ✧ Volts 电压: 1500Vdc;
- ✧ Amps 电流: 10-32A;
- ✧ Breaking Capacity 分断;
  - Max BC: 30kA @ 1500Vdc (or less) ;
  - Min BC: 135% In @ 1500Vdc;
- ✧ Time Constant:  $\leq 3 \pm 0.5$  ms;
  - 时间常数:  $\leq 3 \pm 0.5$  ms;
- ✧ It has a low  $I^2t$  value;
  - 低 $I^2t$ 值,焦耳积分放通量小;
- ✧ Strong current limiting capability;
  - 强限流能力;
- ✧ Low voltage drops;
  - 低功率损耗;
- ✧ Excellent DC Performance;
  - 卓越的直流分断能力;
- ✧ Capable of interrupting low over currents associated with faulted PV strings;
  - 能够中断与故障光伏串相关的低过电流;

### Standards / Approvals 认证/标准:

- ✧ Refer To UL-248-19/IEC 60269-1/6; 性能参考UL-248-19/IEC 60269-1/6;
- ✧ Reach Declaration Available Upon Request; 可根据要求提供REACH声明;
- ✧ RoHS Compliant. 符合RoHS。

### Features & benefits 产品特性:

The HCPVF1500-14R solar fuse is designed to integrate into an in-line assembly within a wire harness. The fuse provides photovoltaic (PV) protection that meets UL 248-19 for photovoltaic applications. The HCPVF1500 Can be electrically insulated by either over molding or using heat-shrink. Same time Meets IEC 60269-6 electrical performance requirements.

HCPVF1500-14R 太阳能(光伏)系列保险丝设计为集成或到线束内的组件中。熔断器提供符合UL 248-19光伏应用要求的光伏(PV)保护。可以通过二次成型或使用热缩进行电气绝缘。同时满足IEC 60269-6电气性能要求。

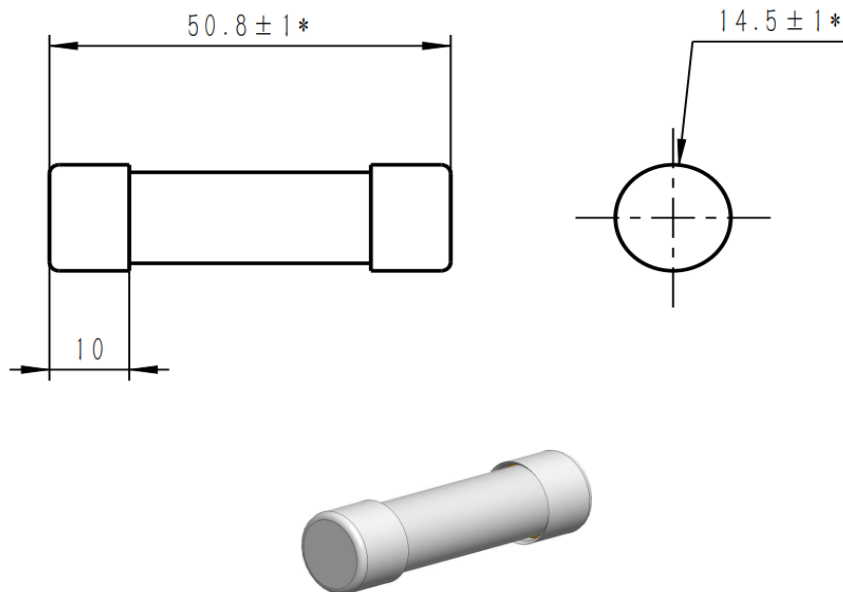
### Product Model 产品型号说明:

<u>HC</u>	<u>PV</u>	<u>T</u>	<u>1500</u>	=	<u>20</u>	<u>A</u>	=	<u>14R</u>
<b>HC:</b> Company Code	<b>PV:</b> Photovoltaic	<b>HV:</b> High Speed	<b>F:</b> Fiberglass <b>T:</b> Ceramics					
Rated Voltage: 1500: 1500V								
Rated Current: 20: 20A								
x: Connect A, AP								
Type Series Code: 14R								

**Product Characteristics 产品特性:**

Item	Test Condition/Methods	Standard	Performance
Time/Current	100% of current rating	IEC 60269/UL248-19	No Fusing; 4 hours Min.
	113% of current rating *IEC	IEC 60269	60 Minutes Min.
	145% of current rating *IEC	IEC 60269	60 Minutes Max.
	105% of current rating *UL	UL-248.19	60 Minutes Min.
	135% of current rating *UL	UL-248.19	60 Minutes Max.
	200% of current rating	IEC 60269/UL248-19; 1-30A	4 Minutes Max.
IEC 60269/UL248-19; 31-60A		6 Minutes Max.	
Endurance Test	100% of rating current for 4 hours and testing Temperature rise at the last 5min.	IEC 60269-6 / UL248-19	≤65K

✧ Loading 100% Rated Current (1.0In A) for flowing, and it's available to let current keep on flowing at least 4 hour without any melting.

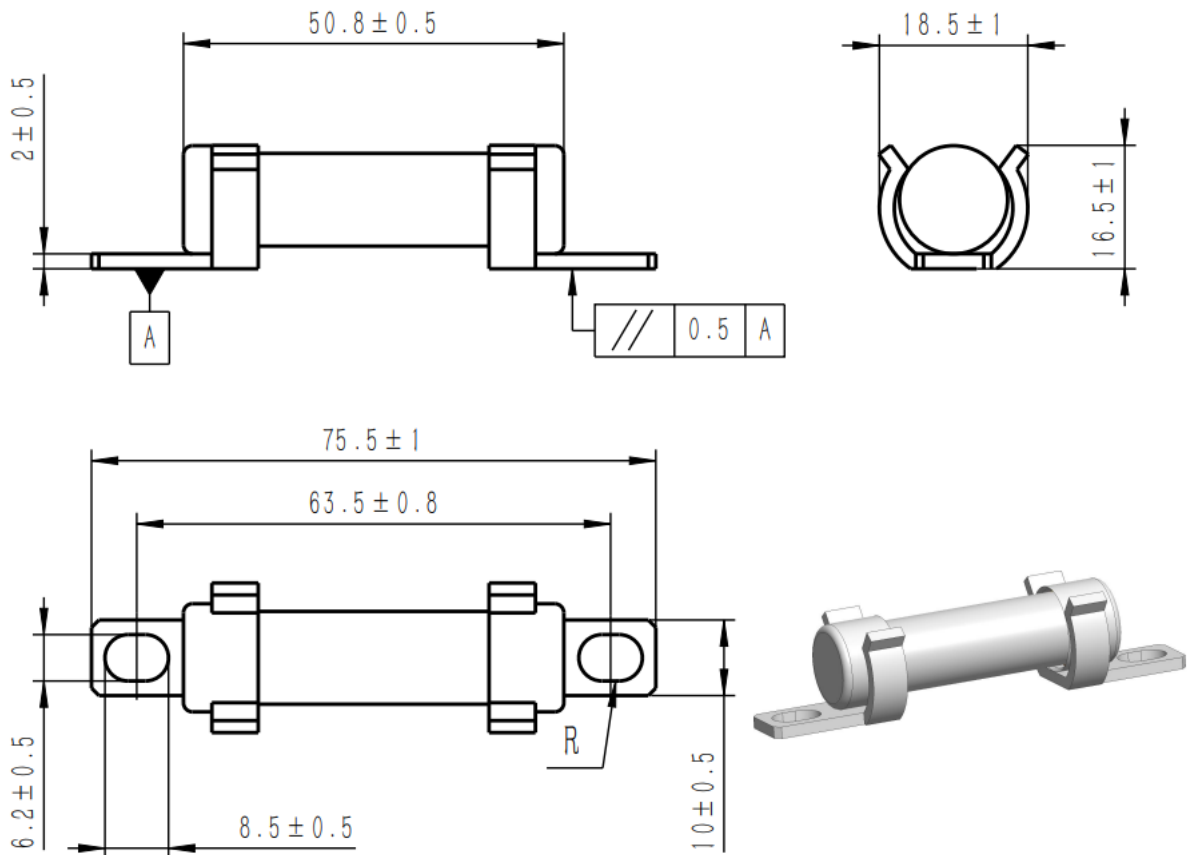
**Dimensions (mm) 尺寸:**


Ferrule: xxA-14R 单体式 熔断器

**Fuse Ratings 额定参数:**

Connect	Part No.	Fuse Amps	Average @ 30KA/1500Vdc		Power Loss 1.0(W)	Approvals UL
			A <sup>2</sup> s Melting	A <sup>2</sup> s Clearing		
Ferrule	HCPVT1500-10A-14R	10A	10.5	185.0	4.0	○ Pending
	HCPVT1500-12A-14R	12A	12.1	215.0	4.5	○ Pending
	HCPVT1500-15A-14R	15A	19.5	340.0	5.0	○ Pending
	HCPVT1500-16A-14R	16A	20.3	365.0	5.2	○ Pending
	HCPVT1500-20A-14R	20A	32.0	630.0	5.5	○ Pending
	HCPVT1500-25A-14R	25A	63.0	970.0	6.0	○ Pending
	HCPVT1500-30A-14R	30A	122.0	1650.0	7.5	○ Pending
HCPVT1500-32A-14R	32A	133.0	1850.0	7.8	○ Pending	

✧ DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C;

**Dimensions (mm) 尺寸:**

**Axial bolt: xxAP-14R 轴向 螺栓连接**

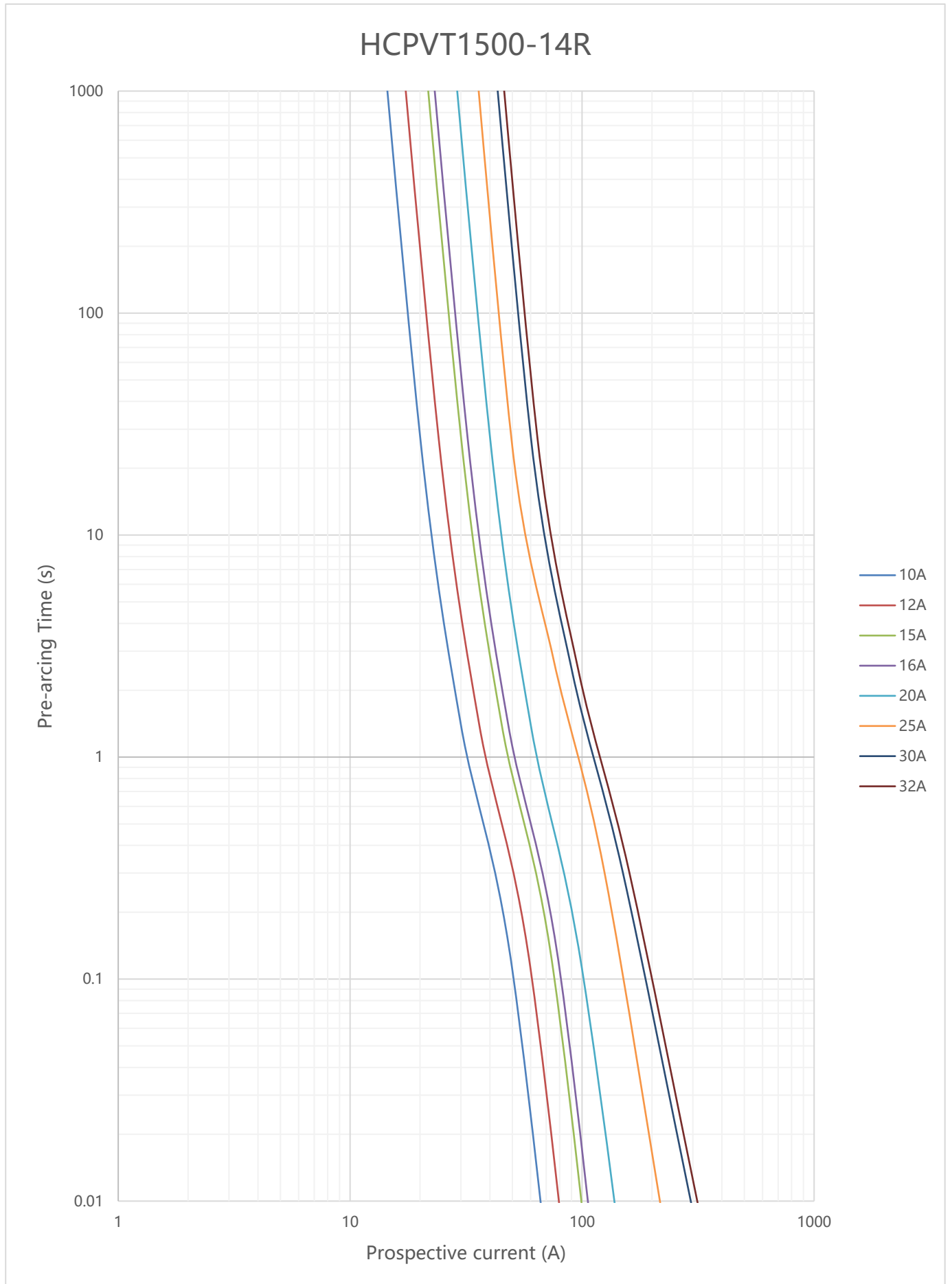
Standard recommended bolts	Installation torque
推荐使用螺栓	推荐螺栓扭矩
M5	4.5±1.0 (N.m)
M6	6.0±1.0 (N.m)

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Axial bolt	HCPVT1500-10AP-14R	10A	10.5	185.0	4.0	○ Pending
	HCPVT1500-12AP-14R	12A	12.1	215.0	4.5	○ Pending
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	HCPVT1500-20AP-14R	20A	32.0	630.0	5.5	○ Pending
	HCPVT1500-25AP-14R	25A	63.0	970.0	6.0	○ Pending
	HCPVT1500-30AP-14R	30A	122.0	1650.0	7.5	○ Pending
	HCPVT1500-32AP-14R	32A	133.0	1850.0	7.8	○ Pending

◇ DC Cold Resistance are measured at &lt;10% of rated current in ambient temperature of 25°C;

Time-Current Curve 时间电流曲线图:



## Operating conditions 使用条件:

- ◇ Product storage Temperature:  $-40^{\circ}\text{C} \sim 120^{\circ}\text{C}$  ( $-40^{\circ}\text{F} \sim 248^{\circ}\text{F}$ );  
产品存储温度:  $-40^{\circ}\text{C} \sim 120^{\circ}\text{C}$ , 在 $40^{\circ}\text{C}$ 时相对湿度不大于70%;
- ◇ Product storage Humidity:  $T=40^{\circ}\text{C}$   $\text{RH} \leq 70\%$ ,  $T \leq 30^{\circ}\text{C}$   $\text{RH} \leq 80\%$ ,  $T \leq 20^{\circ}\text{C}$   $\text{RH} \leq 90\%$ ;  
在 $30^{\circ}\text{C}$ 以下, 产品相对湿度不大于80, 在 $20^{\circ}\text{C}$ 以下, 相对湿度不大于90%;
- ◇ Package storage Temperature:  $-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$  ( $-40^{\circ}\text{F} \sim 176^{\circ}\text{F}$ );  
包装存储温度:  $-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$ ;
- ◇ Fuses can perform regularly under the flowing conditions without corrections;  
熔断器在下述的正常使用条件下工作, 不需要额外的修正;
- ◇ Regular current flow should  $\leq 75\%$  of recommended rated current;  
推荐长期通流的电流值不大于额定电流的75%;
- ◇ High frequency vibration resistance:  $\geq 20\text{g}$ ;  
本系列熔断器有良好的抗振动和冲击的耐受能力, 可承受20g以上的加速度;
- ◇ Intense vibration and shocking conditions need more tests.  
振动较为强烈的应用环境, 可商议进行对应测试, 一般要经过较长的周期。
- ◇ Replacing fuses if damaging facilities;  
对有机损伤的熔断器必须进行更换;
- ◇ DO NOT change fuses while loading unless MUST.  
除非使用要求允许, 如熔断器式负荷开关, 否则请勿带负载更换熔断器。
- ◇ Operating temperature:  $-5^{\circ}\text{C} \sim 40^{\circ}\text{C}$  ( $23^{\circ}\text{F} \sim 104^{\circ}\text{F}$ );  
正常使用条件:  $-5^{\circ}\text{C} \sim 40^{\circ}\text{C}$ ;
- ◇ Allowable operating temperature:  $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$  ( $-40^{\circ}\text{F} \sim 257^{\circ}\text{F}$ );  
允许使用条件:  $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ ;
- ◇ Temperature correction factors: when below  $-5^{\circ}\text{C}$  ( $23^{\circ}\text{F}$ ), low overload (L.O.) pre-arcing time will slightly extend, rated current will slightly increase;  
周围空气温度变化的参数修正: 在低于 $-5^{\circ}\text{C}$ 下工作, 熔断器的低倍过载电流的弧前时间略有延长, 额定电流略有增大, 但是除非 $-5^{\circ}\text{C}$ 以上不是工作范围, 一般不参考增加熔断器额定电流;
- ◇ If operating above  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ), rated current need extra corrections, factors:  $-Kt$ ①.  
熔断器在 $40^{\circ}\text{C}$ 以上工作, 额定电流需要额外的修正, 修正系数为 $-Kt$ 。

\*Note①:  $Kt$  value has already considered the safety current allowance under regular operating scenarios.

\*注1:  $Kt$ 的取值已考虑熔断器在正常工作条件下的额定电流安全余量的影响。

