

# Specifications 技术参数

10x38mm Cylindrical Fuses

**Photovoltaic Fuses**

### Ratings 电气参数:

- ✧ Volts 电压: 1000Vdc;
- ✧ Amps 电流: 10-35A;
- ✧ Breaking Capacity 分断能力;
  - Max Dc 30kA 1000Vdc;
  - Min Dc 135% In;
- ✧ Time Constant:  $\leq 2 \pm 0.5$  ms;
  - 时间常数:  $\leq 2 \pm 0.5$  ms;
- ✧ It has a low  $I^2t$  value;
  - 低 $I^2t$ 值,焦耳积分放通量小;
- ✧ Low voltage drop;
  - 低功率损耗;
- ✧ Excellent DC Performance;
  - 卓越的直流分断能力;
- ✧ Variety of mounting options for flexibility;
  - 安装灵活多样式;
- ✧ Capable of interrupting low over currents associated with faulted PV strings;
  - 能够中断于故障关联的低过电流;

### 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。

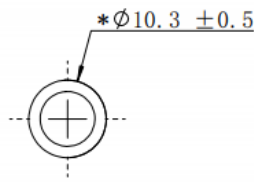
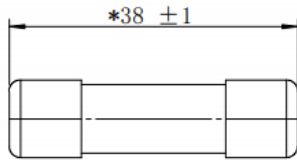
### Features & benefits 产品特性:

The HCPVT1000 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 Can be electrically insulated by either over molding or using heat-shrink. Same time Meets IEC 60269-6 electrical performance requirements.

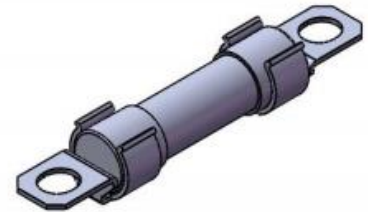
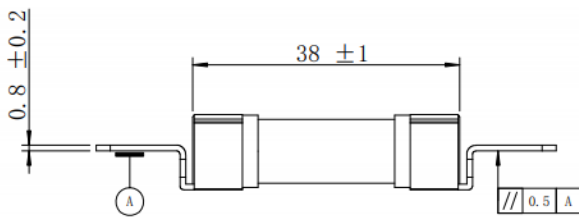
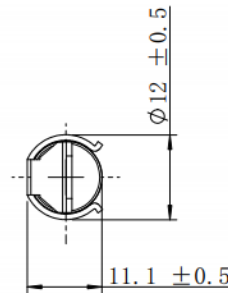
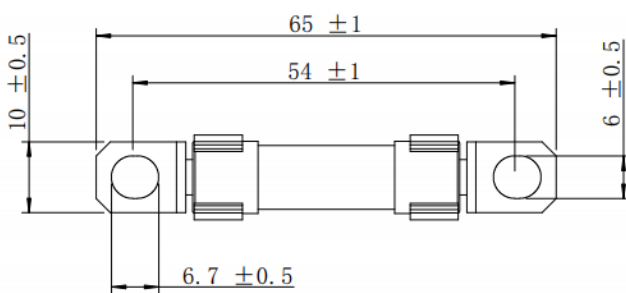
HCPVT1000 太阳能 (光伏) 系列保险丝设计为集成或到线束内的组件中。熔断器提供符合UL 248-19光伏应用要求的光伏 (PV) 保护。可以通过二次成型或使用热缩进行电气绝缘。同时满足IEC 60269-6电气性能要求。

### Product Model 产品型号说明:

	<b>HC</b>	<b>PV</b>	<b>I</b>	<b>1000</b>	<b>=</b>	<b>20</b>	<b>A</b>	<b>=</b>	<b>10R</b>
<b>HC: Company Code</b>		<b>PV: Photovoltaic</b>		<b>I: High Speed</b>		<b>F: Fiberglass T: Ceramics</b>		<b>Rated Voltage: 1000: 1000V</b>	
<b>Rated Current: 20: 20A</b>		<b>x: Connect A, AP, B, C, H</b>		<b>Type Series Code: 10R</b>					

**Dimensions (mm) 尺寸**


Ferrule xxA-10R 单体式 熔断器



Axial bolt-on xxAP-10R 轴向 螺栓连接 (分体)

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

**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 IEC 60269/UL248-19;31-60A	4 Minutes Max. 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.

**Fuse Ratings 额定参数**

Part No.	Fuse Amps	Average @30KA/1000Vdc		Power Loss (W)		Approvals
		A <sup>2</sup> s Melting	A <sup>2</sup> s Clearing	80%	100%	UL
<u>HCPVT1000-10A-10R</u>	<u>10</u>	<u>210</u>	<u>1175</u>	<u>1.1</u>	<u>1.5</u>	○ Pending
<u>HCPVT1000-12A-10R</u>	<u>12</u>	<u>252</u>	<u>1405</u>	<u>1.3</u>	<u>1.7</u>	○ Pending
<u>HCPVT1000-15A-10R</u>	<u>15</u>	<u>315</u>	<u>1757</u>	<u>1.6</u>	<u>2.3</u>	○ Pending
<u>HCPVT1000-16A-10R</u>	<u>16</u>	<u>326</u>	<u>1780</u>	<u>1.6</u>	<u>2.3</u>	○ Pending
<u>HCPVT1000-20A-10R</u>	<u>20</u>	<u>420</u>	<u>2340</u>	<u>2.1</u>	<u>2.9</u>	○ Pending
<u>HCPVT1000-25A-10R</u>	<u>25</u>	<u>525</u>	<u>2929</u>	<u>2.7</u>	<u>3.5</u>	○ Pending
<u>HCPVT1000-30A-10R</u>	<u>30</u>	<u>630</u>	<u>3515</u>	<u>3.2</u>	<u>4.2</u>	○ Pending
<u>HCPVT1000-32A-10R</u>	<u>32</u>	<u>890</u>	<u>3995</u>	<u>4</u>	<u>5.3</u>	○ Pending
<u>HCPVT1000-35A-10R</u>	<u>35</u>	<u>975</u>	<u>4545</u>	<u>4.6</u>	<u>6.2</u>	○ Pending

**Ferrule xxA-10R**

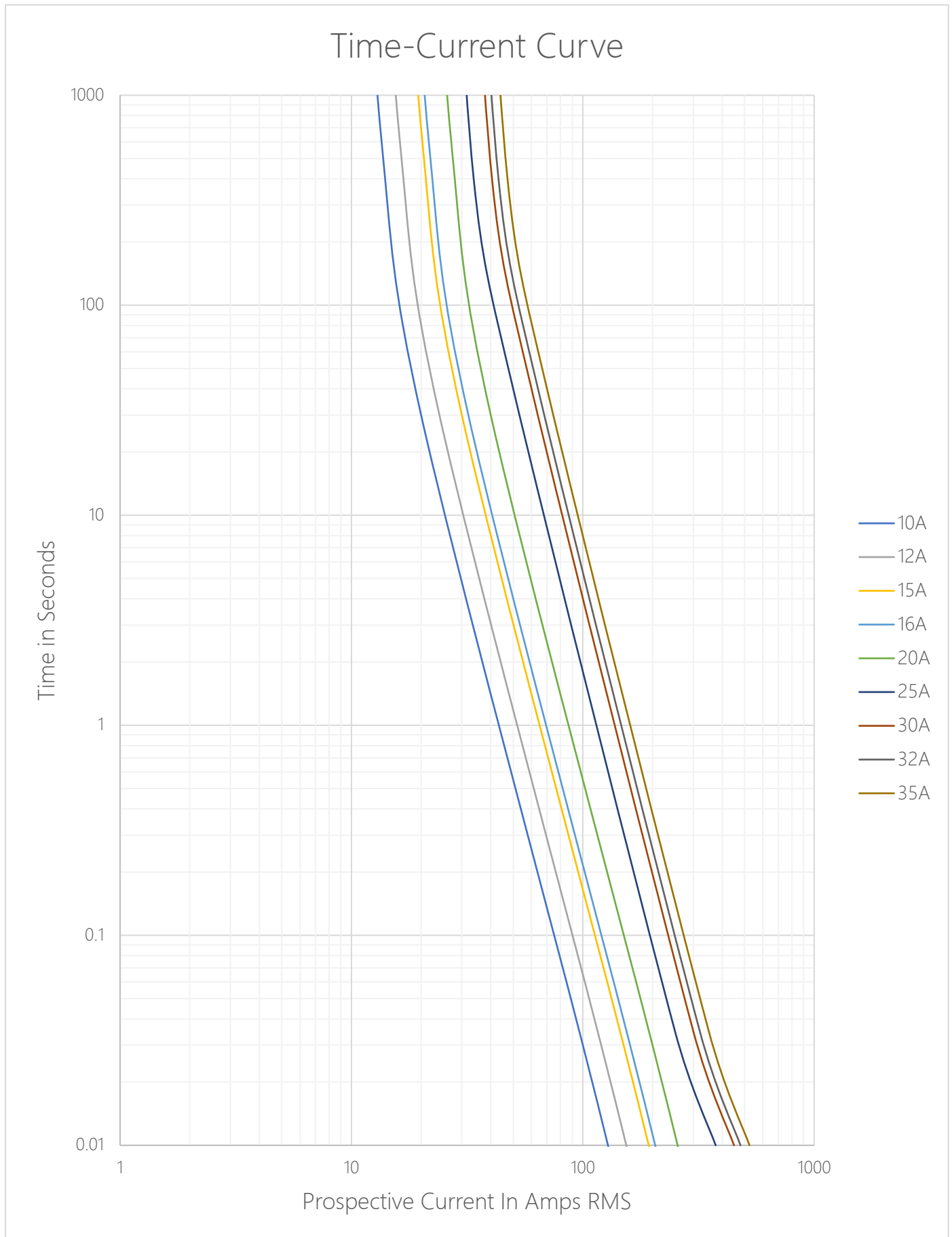
✧ DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C;

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		A <sup>2</sup> s Melting	A <sup>2</sup> s Clearing	80%	100%	UL
<u>HCPVT1000-10AP-10R</u>	<u>10</u>	<u>210</u>	<u>1175</u>	<u>1.1</u>	<u>1.5</u>	○ Pending
<u>HCPVT1000-12AP-10R</u>	<u>12</u>	<u>252</u>	<u>1405</u>	<u>1.3</u>	<u>1.7</u>	○ Pending
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<u>HCPVT1000-30AP-10R</u>	<u>30</u>	<u>630</u>	<u>3515</u>	<u>3.2</u>	<u>4.2</u>	○ Pending
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**Axial bolt-on xxAP-10R**

✧ DC Cold Resistance are measured at <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。

