

## Specifications 技术参数

Square body fuse links

Photovoltaic Fuses

### Ratings & Features Applications 电气参数/功能应用领域:

- ◇ Volts 电压: 1500Vdc;
- ◇ Amps 电流: 50-630A;
- ◇ Breaking Capacity 分断;
  - Max Dc 50kA 1500Vdc;
- ◇ Class Type 产品类别: gPV;
- ◇ 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;
- ◇ Strong current limiting capability;
  - 强限流能力;
- ◇ Low voltage drop;
  - 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:

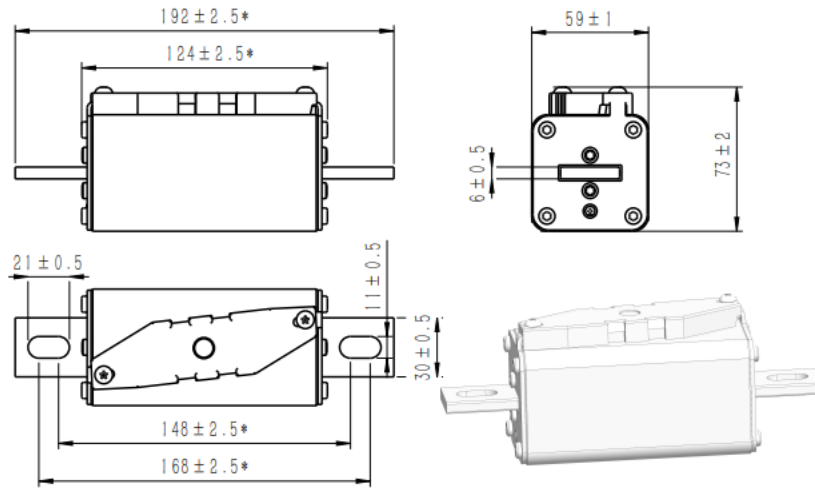
The HCPVT series has been designed to meet the emerging circuit protection needs for 1500 volt photovoltaic systems. These fuses provide full range protection for all potential overcurrent conditions that exist in PV applications. Suitable for PV inverter protection and array combiner applications.

HCPVT系列旨在满足1500伏光伏系统的电路保护需求。为光伏应用中存在的所有潜在过电流条件提供全范围保护。适用于光伏逆变器保护和阵列组合器应用。

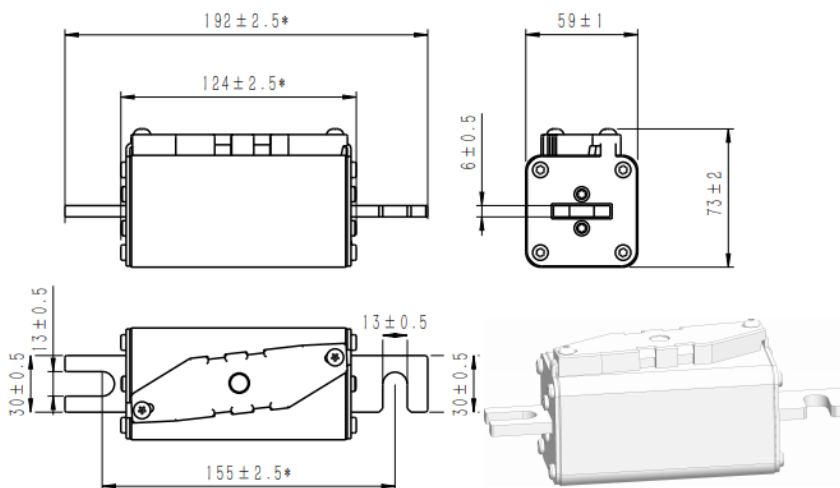
### Product Model 产品型号说明:

<b>HC</b>	<b>PV</b>	<b>T</b>	<b>1500</b>	=	<b>400</b>	<b>B</b>	=	<b>59ES</b>
<p><b>HC:</b> Company Code</p> <p><b>PV:</b> Photovoltaic</p> <p><b>HV:</b> High Speed</p> <p><b>F:</b> Fiberglass <b>T:</b> Ceramics</p> <p><b>Rated Voltage:</b> 1500: 1500V</p> <p><b>Rated Current:</b> 400: 400A</p> <p><b>x: Connect:</b> B, U</p> <p><b>Type Series Code:</b> 59ES</p>								

#### Dimensions (mm)尺寸



Bolted: xxB-59ES 长条螺栓横向安装



Din: xxxU-59ES 勾叉螺栓横向安装

#### Product Characteristics 产品特性

Item	Test Condition/Methods	Standard	Performance
Time/Current	100% of current rating	UL248-19	No Fusing; 4 hours Min.
	105% of current rating *UL	UL-248.19	60 Minutes Min.
	135% of current rating *UL	UL-248.19; (61-600A)	120 Minutes Max.
	150% of current rating *UL	UL-248.19; (601-800A)	240 Minutes Max.
	200% of current rating	UL248-19; (61-100A)	8 Minutes Max.
		UL248-19; (101-200A)	10 Minutes Max.
		UL248-19; (201-400A)	12 Minutes Max.
		UL248-19; (401-600A)	14 Minutes Max.
Endurance Test	100% of rating current for 4 hours and testing Temperature rise at the last 5min.	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

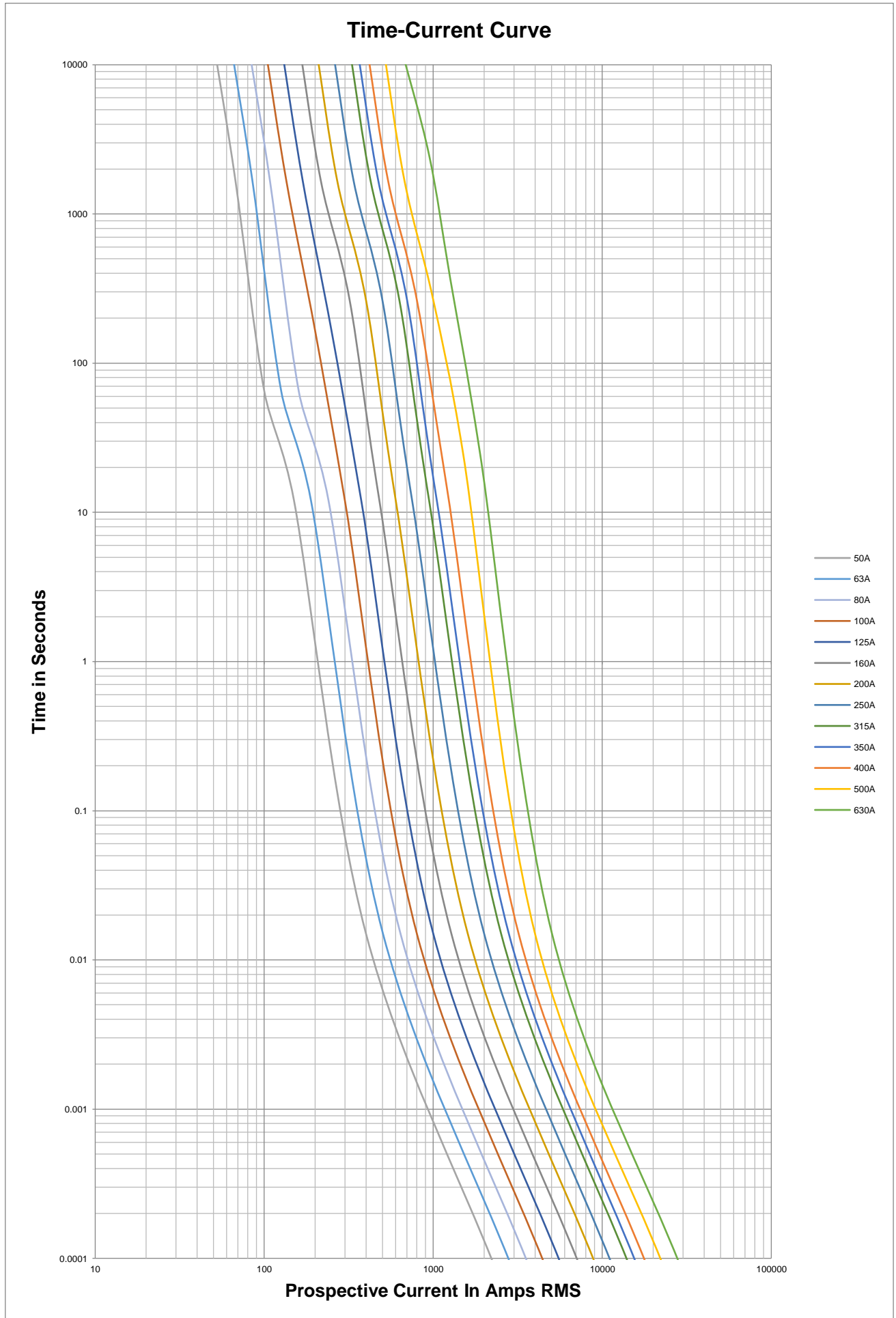
Connect	Part No.	Fuse Amps	Average @50KA/1500Vdc		Power Loss (W)		Approvals
			A <sup>2</sup> s Melting	A <sup>2</sup> t Clearing	100%	70%	UL
Bolted 59ES	HCPVT1500-50B-59ES	<u>50A</u>	800	3,500	20	8	Pending
	HCPVT1500-63B-59ES	<u>63A</u>	1,500	5,400	32	20	Pending
	HCPVT1500-80B-59ES	<u>80A</u>	2,600	9,600	38	23	Pending
	HCPVT1500-100B-59ES	<u>100A</u>	3,700	13,000	48	28	Pending
	HCPVT1500-125B-59ES	<u>125A</u>	5,400	21,000	60	32	Pending
	HCPVT1500-160B-59ES	<u>160A</u>	8,400	32,000	68	36	Pending
	HCPVT1500-200B-59ES	<u>200A</u>	13,500	55,000	79	40	Pending
	HCPVT1500-250B-59ES	<u>250A</u>	26,500	105,000	82	45	Pending
	HCPVT1500-315B-59ES	<u>315A</u>	50,500	201,500	95	55	Pending
	HCPVT1500-350B-59ES	<u>350A</u>	65,000	320,000	100	57	Pending
	HCPVT1500-400B-59ES	<u>400A</u>	85,000	354,000	109	64	Pending
	HCPVT1500-500B-59ES	<u>500A</u>	217,000	750,000	121	71	Pending
HCPVT1500-630B-59ES	<u>630A</u>	434,000	1,150,000	128	76	Pending	

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

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	HCPVT1500-63U-59ES	<u>63A</u>	1,500	5,400	32	20	Pending
	HCPVT1500-80U-59ES	<u>80A</u>	2,600	9,600	38	23	Pending
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### 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:  $T=40^{\circ}\text{C}$  RH $\leq$ 70%,  $T\leq 30^{\circ}\text{C}$  RH $\leq$ 80%,  $T\leq 20^{\circ}\text{C}$  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。

