

## Specifications 技术参数

## Electric Vehicle Power Fuses

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

- ◇ Volts电压: 500Vdc;
- ◇ Amps电流: 50-800A;
- ◇ Interrupting Capacity分断;
- ◇ Max BC: 50KA 500Vdc;
- ◇ Min BC: 200% In;
- ◇ EV/HEV 纯电动汽车和混合动力汽车设计;
- ◇ Design For Dc Applications 直流应用设计;
- ◇ Excellent Dc Performance 卓越的直流分断能力;
- ◇ Low Watt Losses 低功率损耗;
- ◇ Battery Pack Protection 动力电池包保护;
- ◇ Backup Protection For Dc Relay 直流继电器保护;
- ◇ Disconnecter or Maintenance Safety Disconnect 隔离开关、维护开关;



### Standards / Approvals 认证标准:

- ◇ Refer To JASO-D622/ISO8820.8/GB31465.6/UL248-20;  
性能参考 JASO-D622/ISO8820.8/GB31465.6/UL248-20;
- ◇ Manufactured Under a IATF16949 Quality System for Compliance with Automotive Requirements;  
根据IATF16949质量体系制造符合汽车要求;
- ◇ Reach Declaration Available Upon Request;  
可根据要求提供REACH声明;
- ◇ CE;
- ◇ RoHS Compliant.  
符合RoHS.

### Features & benefits 产品特性:

Higher voltage rating provides overall system efficiency using smaller, more economical conductors while meeting the needs of higher voltage battery packs. Higher interrupting rating protects high-capacity battery packs needed for vehicle acceleration and range requirements. Up to ten times faster opening under high fault current conditions helps assure reliable protection of circuits and components. Can be applied in parallel to realize greater ampacity within sizing guidelines, Excellent power of resisting voltaic impingement and environment temperature tolerance, Excellent resistance to mechanical vibration and impact resistance, fully meet the requirements of automotive application.

满足高电压、小体积、更经济的提升整体系统效率。同时满足了更高电压电池组的需要。较高的分断值可保护车辆所需的高容量电池组。在大的故障电流条件下，断开速度更快，确保电路和部件的可靠保护。可以并行应用，实现更大的载流量。良好的抗电流冲击能力以及冷、热环境温度耐受能力，具有优越的抗机械振动与冲击能力，完全满足汽车应用条件。

### Product Model 产品型号说明:

**HC** **EV** **F** **500** : **300** **A** : **30R**

**HC: Company Code**

**EV: Electric Vehicle**

**HV: High Speed**

**F: Fiberglass T: Ceramics**

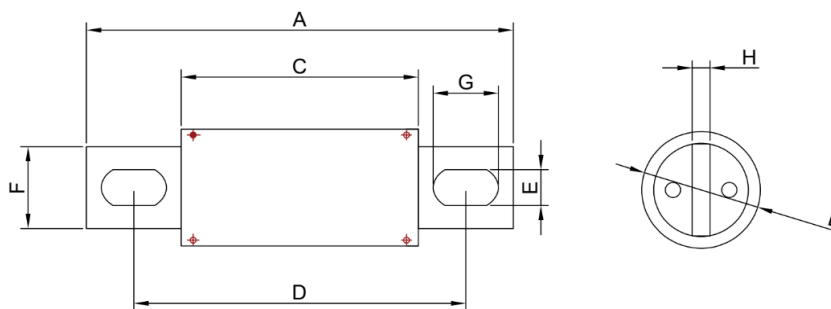
**Rated Voltage: 500: 500V**

**Rated Current: 300: 300A**

**x: Connect: A, H, T**

**Type Series Code: 20R, 25R, 30R, 38R, 51R**

#### Dimensions (mm) 尺寸



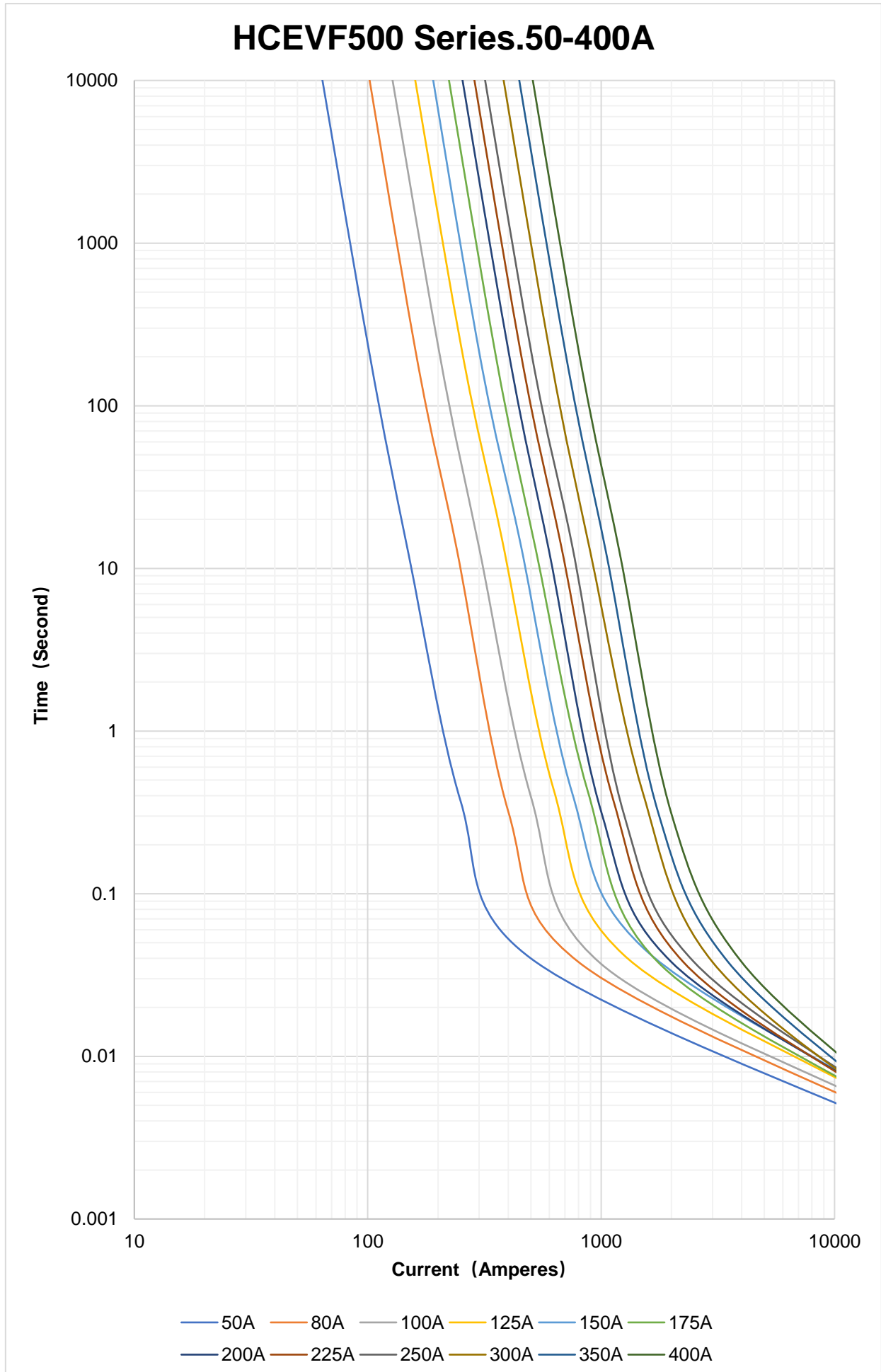
S.	Amps	A±1.5	B±1	C±1	D±1.5	E±0.5	F±0.5	G±1	H±0.5
20mm	50-150A	81.00	20.00	40.00	60.50	8.50	15.00	13.00	3.00
25mm	100-250A	92.00	25.00	53.00	72.00	8.50	18.00	12.00	3.00
30mm	200-400A	92.00	31.00	53.00	73.00	8.50	25.00	14.00	4.80
38mm	350-600A	110.00	38.00	53.00	81.50	10.50	25.00	20.00	6.00
51mm	550-800A	110.00	51.00	53.00	81.50	10.50	40.00	20.00	6.00

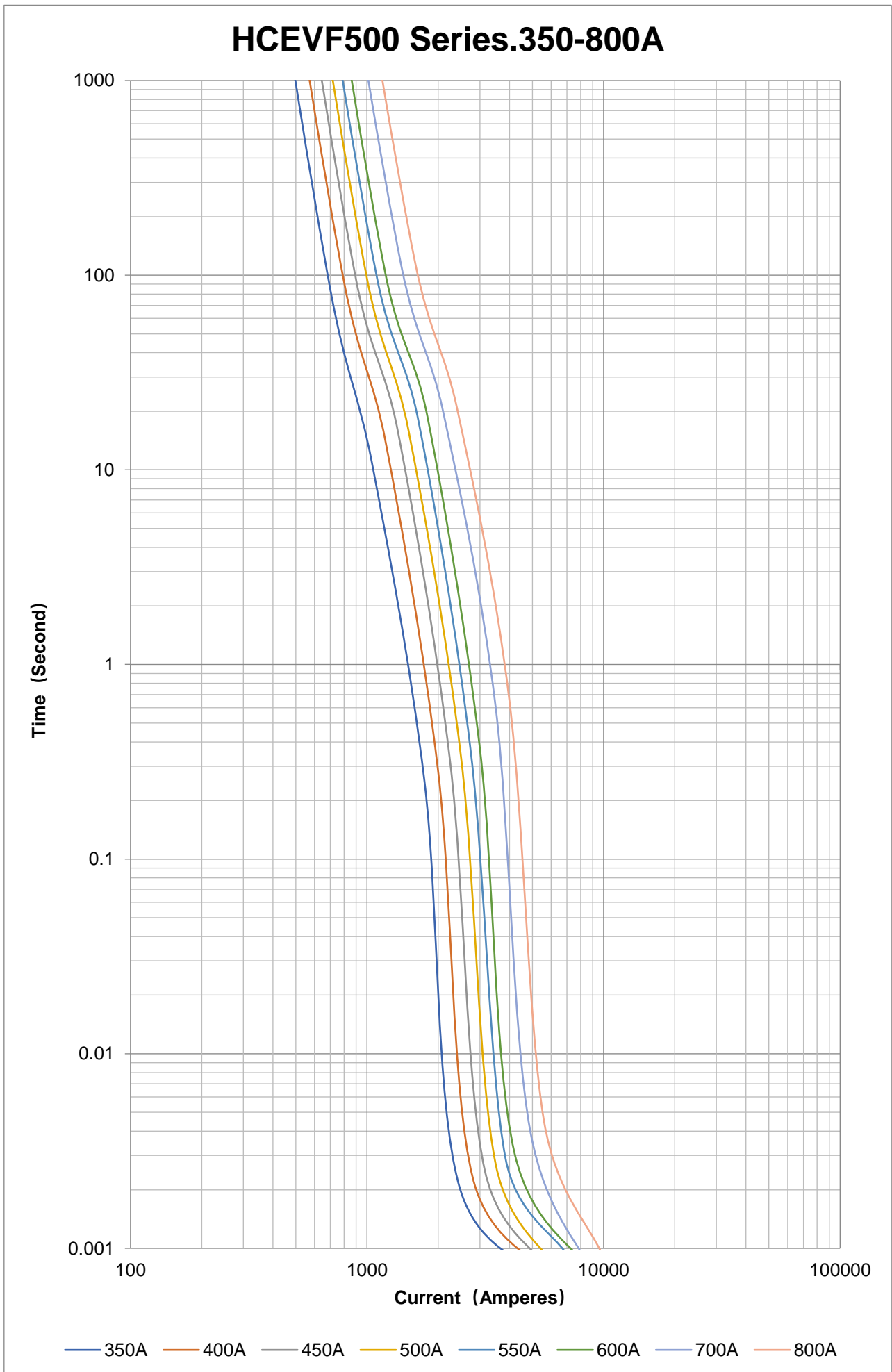
#### Fuse Ratings 额定参数

Rated Current			Catalog no.	Energy Integrals I²t		Power Loss W	Breaking Capacity
				Melting A²S	Clearing A²S	0.5	
20 mm diameter case	50	50A	HCEVF500-50A-20R	386	821	1.14	50kA
	80	80A	HCEVF500-80A-20R	956	2420	1.82	
	100	100A	HCEVF500-100A-20R	1544	3281	2.28	
	125	125A	HCEVF500-125A-20R	1663	4525	3.00	
	150	150A	HCEVF500-150A-20R	2093	6516	3.60	
25 mm diameter case	100	100A	HCEVF500-100A-25R	1095	2549	2.88	50kA
	125	125A	HCEVF500-125A-25R	1292	3982	3.60	
	150	150A	HCEVF500-150A-25R	1699	6049	4.32	
	175	175A	HCEVF500-175A-25R	2310	8234	5.04	
	200	200A	HCEVF500-200A-25R	3568	11242	5.76	
	225	225A	HCEVF500-225A-25R	4515	14227	6.69	
	250	250A	HCEVF500-250A-25R	5574	17565	7.44	
30 mm diameter case	200	200A	HCEVF500-200A-30R	3372	9532	6.47	50kA
	225	225A	HCEVF500-225A-30R	4267	12064	7.28	
	250	250A	HCEVF500-250A-30R	5268	14893	8.08	
	300	300A	HCEVF500-300A-30R	7585	21446	9.71	
	350	350A	HCEVF500-350A-30R	10325	29190	11.32	
	400	400A	HCEVF500-400A-30R	13485	38126	12.93	
38 mm diameter case	350	350A	HCEVF500-350A-38R	10500	42900	13.44	50kA
	400	400A	HCEVF500-400A-38R	14700	57200	14.40	
	450	450A	HCEVF500-450A-38R	22050	79200	15.36	
	500	500A	HCEVF500-500A-38R	28350	99000	16.32	
	550	550A	HCEVF500-550A-38R	42000	145200	16.32	
	600	600A	HCEVF500-600A-38R	52500	181500	17.28	
51 mm diameter case	550	550A	HCEVF500-550A-51R	33600	134200	22.08	50kA
	600	600A	HCEVF500-600A-51R	42000	157300	23.04	
	700	700A	HCEVF500-700A-51R	65100	232100	25.92	
	800	800A	HCEVF500-800A-51R	91350	314600	28.80	

◇ 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:  $T=40^{\circ}\text{C}$  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。

