

保电通 (东莞) 电子科技有限公司
PROTECTOM (DONGGUAN) ELECTRONIC TECHNOLOGY CO.,LTD

ES2T 2410

Brick SMD fuse

贴片保险丝规格书

Add: Room 1101, Unit 1, Block 6 No. 5, Machong Section Shui Xiang Avenue,
Ma Chong Town Dongguan City

Tel: 0769-88329950 88329951 88329952 18922531714

Fax: 0769-88329953

Web Site: www.bdt-e.com

E-mail: protectom@126.com GMMT@BDT-E.COM



适用范围 / Scope of Application

本产品适用于 LCD / PDP 电视、液晶显示器、LCD / PDP 面板、LCD 背光逆变器、便携式 DVD 播放器、3C数码类快充头、电源、联网、PC 服务器、冷却风扇系统、存储系统、电信系统、无线基站、白色家电、游戏机、办公自动化、设备电池充电电路保护、工业设备、医疗器材、汽车各类电子设备电路的过流保护作用。

This product is suitable for LCD / PDP TV、LCD display、LCD / PDP panel、LCD backlight inverter、Portable DVD player、3C digital class fast charger Power supply、Networking、PC server、Cooling fan system、Storage system、Telecommunication system、Wireless base station、Game machine、Office automation、Equipment、Battery charging circuit protection、Industrial equipment、Medical equipment、Over-current protection of various electronic equipment circuits。

安规认证标准及编号 / Standards and Agency Approvals

- 2.1 执行标准：遵循 UL248-1/14 , GB/T 9364.1-2015;GB/T 9364.7-2016 ,KC60127-3(2015-09), K60127-1(2011-12),IEC 60127-1:2006
 IEC 60127-1:2006/AMD1:2011 ,IEC 60127-1:2006/AMD2:2015
 IEC 60127-7:2015, DIN EN 60127-1 (VDE 0820-1):2015-12; EN60127-1:2006+A1:2011+A2:2015
 DIN EN 60127-7 (VDE 0820-7):2016-09; EN 60127-7:2016

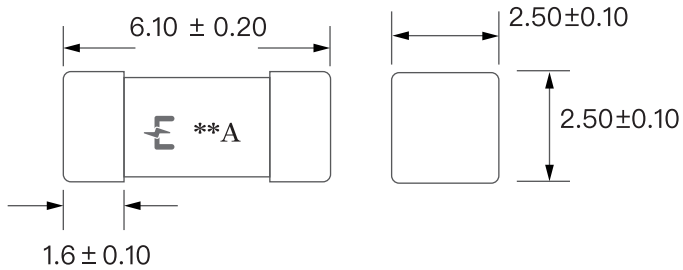
Standards: In accordance with UL248-1/14 , GB/T 9364.1-2015;GB/T 9364.7-2016 ,KC60127-3(2015-09), K60127-1(2011-12),IEC 60127-1:2006
 IEC 60127-1:2006/AMD1:2011 ,IEC 60127-1:2006/AMD2:2015
 IEC 60127-7:2015, DIN EN 60127-1 (VDE 0820-1):2015-12; EN60127-1:2006+A1:2011+A2:2015
 DIN EN 60127-7 (VDE 0820-7):2016-09; EN 60127-7:2016.

- 2.2 认证范围 Certification:

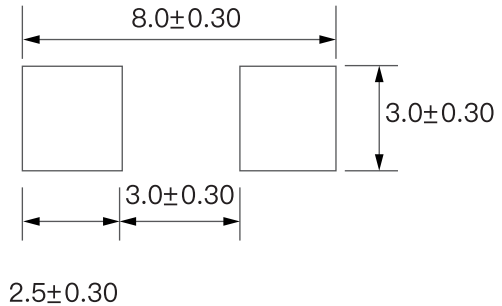
额定电压 Rated Voltage	安规标准 Agency	认证电流 Ampere Range	证书编号 Agency File Number
250V ac/dc	UR-CUR (UL)	0.1A ~ 10A	E519111
125V ac/dc	UR-CUR (UL)	11A ~ 15A	
250V ac/dc	CQC	500MA,1A,1.25A,1.6A,2A,2.5A,3.15A,4A,5A,6.3A,8A,10A,12A,15A,20A	CQC21012316667
250V ac/dc	KC	500MA,1A,1.25A,1.6A,2A,2.5A,3.15A,4A,5A	SU05076
250V ac/dc	IEC	500MA,1A,1.25A,1.6A,2A,2.5A,3.15A,4A,5A	CN54664-A1
250V ac/dc	VDE	500MA,1A,2A,3.15A,5A	40054943
250V ac/dc	TUV	0.1A ~ 15A	J50727148
250V ac/dc	PSE	1A ~ 15A	

结构及尺寸 / Dimensions and Structure

单位：毫米 / Unit: mm



Recommended pad layout



材料明细 / Material Details

编号 NO.	零件名称 Part Name	材质 Material
1	铜帽 Cap	铜镀银/金 Silver/Gold Plated Brass
2	管体 Body	陶瓷管 Non-Transparent Square Ceramic Tube
3	熔丝 Element	合金线+纤维线 Alloy Wire+ Fiber
4	焊锡 Solder	高温焊锡 High temperature tin

产品标示 / Product Marking

保险丝两端铜帽上或本体上需有下列标示。

The fuses cap or fuse body shall have the following markings.

示例 Example:



1. 制造厂商标识/ Protectom Logo
2. 额定电流/Rated Current: A 或 or mA

注意 / Note: 对于标示的大小和位置没有规定。

Size and position of the markings shall not be provided



产品特性 / Product Characteristic

零件编号	Rated current	Rated voltage		DCR ($\Omega/\text{m}\Omega$)	voltage drop(mv)	I ² T A2s						TUV	PSE
ES2T0005	0.05A	250	vac	125	72vdc	25-41 Ω	2410-3350	0.0033	○	○	○	○	○
ES2T0006	0.062A					13-26 Ω	1520-2360	0.0035	○	○	○	○	○
ES2T0008	0.08A					19-23 Ω	2930-3410	0.0064	○	○	○	○	○
ES2T0010	0.1A					9.1-10.9 Ω	1180-1410	0.015	●	○	○	○	○
ES2T0012	0.12A					3.9-6.2 Ω	552-912	0.072	●	○	○	○	○
ES2T0015	0.15A					1.75-2.5 Ω	320-437	0.162	●	○	○	○	○
ES2T0018	0.18A					1.1-1.58 Ω	283-318	0.227	●	○	○	○	○
ES2T0020	0.2A					0.71-0.93 Ω	187-214	0.12	●	○	○	○	○
ES2T0025	0.25A					0.6-0.84 Ω	164-254	0.1	●	○	○	○	○
ES2T0030	0.3A					0.35-0.75 Ω	148-209	0.18	●	○	○	○	○
ES2T0035	0.35A					0.32-0.58 Ω	170-242	0.4	●	○	○	○	○
ES2T0037	0.375A					0.39-0.56 Ω	158-245	0.45	●	○	○	○	○
ES2T0040	0.4A					0.30-0.53 Ω	203-252	0.4	●	○	○	○	○
ES2T0050	0.5A					0.2-0.3 Ω	130-203	1.32	●	●	●	●	○
ES2T0060	0.6A					190-245m Ω	128-210	1.35	●	○	○	○	○
ES2T0063	0.63A					190-245m Ω	120-207	1.37	●	○	○	○	○
ES2T0070	0.7A					157-193m Ω	114-181	1.96	●	○	○	○	○
ES2T0075	0.75A					150-180m Ω	108-147	2.15	●	○	○	○	○
ES2T0080	0.8A					121-172m Ω	103-163	2.25	●	○	○	○	○
ES2T0100	1A					75-99m Ω	90-142	2.27	●	●	●	●	●
ES2T0125	1.25A					50-70m Ω	76-116	3.44	●	○	●	●	●
ES2T0150	1.5A					63vdc	48-68.5m Ω	83-120	6.1	●	○	○	○
ES2T0160	1.6A					32vdc	44-53m Ω	84-117	5.6	●	○	●	●
ES2T0200	2A					24vdc	25-41.5m Ω	72-110	9.2	●	●	●	●
ES2T0250	2.5A						22-34m Ω	74-104	15.6	●	○	●	●
ES2T0300	3A						16-24.5m Ω	80-103	20.7	●	○	○	○
ES2T0315	3.15A						16-24.5m Ω	68-98	23.1	●	●	●	●
ES2T0350	3.5A						14-22m Ω	71-95	28.2	●	○	○	○
ES2T0400	4A						12-18m Ω	76-105	36.8	●	○	●	●
ES2T0500	5A						10-14.8m Ω	62-86	60	●	●	●	●
ES2T0600	6A						7-8.9m Ω	61-88	43.2	●	○	○	○
ES2T0630	6.3A						6.5-8.7m Ω	48-73	47.6	●	○	○	○
ES2T0700	7A						7.3-8.8m Ω	54-71	58.8	●	○	○	○
ES2T0800	8A						6.8-8m Ω	51-70	115.2	●	○	○	○
ES2T1000	10A	/					4.0-5.3m Ω	51-66	130	●	○	○	○
ES2T1200	12A	/					3.6-4.6m Ω	45-73	144	●	○	○	○
ES2T1500	15A	/					2.8-3.4m Ω	43-63	225	●	○	○	○
ES2T1600	16A	/					2.2-2.85m Ω	40-60	230.4	○	○	○	○
ES2T2000	20A	/					1.9-2.6m Ω	45-66	440	○	○	○	○
ES2T2500	25A	/	/				1.3-1.9m Ω	40-61	625	○	○	○	○
ES2T3000	30A	/	/				1.15-1.62m Ω	50-70	720	○	○	○	○
ES2T3500	35A	/	/				1.05-1.35m Ω	38-62	1593	○	○	○	○
ES2T4000	40A	/	/				0.95-1.2m Ω	51-60	1920	○	○	○	○
ES2T4500	45A	/	/				0.8-1.1m Ω	44-66	1823	○	○	○	○
ES2T5000	50A	/	/				0.7-0.9m Ω	53-69	2250	○	○	○	○

● Approved ○ pending

外观及形状 / Appearances and Configuration

■ 7.1 外观不应出现显著的污点、裂纹，标识应该容易辨识。

There shall not be any remarkable stain and crack on the appearances, markings shall be easily legible.

■ 7.2 形状：方形陶瓷贴片保险丝。

Configuration: Square ceramic patch fuse

产品特性 / Product Characteristics

■ 8.1 引脚拉力强度 / Lead Pull Strength

10 牛顿 10±1 秒 / 10N for 10±1 Seconds

电气特性 / Electrical Characteristics

■ 9.1 实验条件：Test Condition

所有测试环境温度为 25±5℃。

All electrical test is to be conducted with the ambient air at a temperature of 25±5℃.

■ 9.2 分断能力 / Interrupting Rating:

分断能力 Breaking Capacity:

参考第 6 项 (REF 6)

■ 9.3 温度上升试验 / Rising Temperature Test:

温度上升试验：通 1.0 倍额定电流，当温度稳定时（5 分钟测量 4 次，且每次测量值 与平均值相差不超过 2℃）。测得熔断体任何部位的温升不得超过 135℃，周围环境温度为 25±5℃。

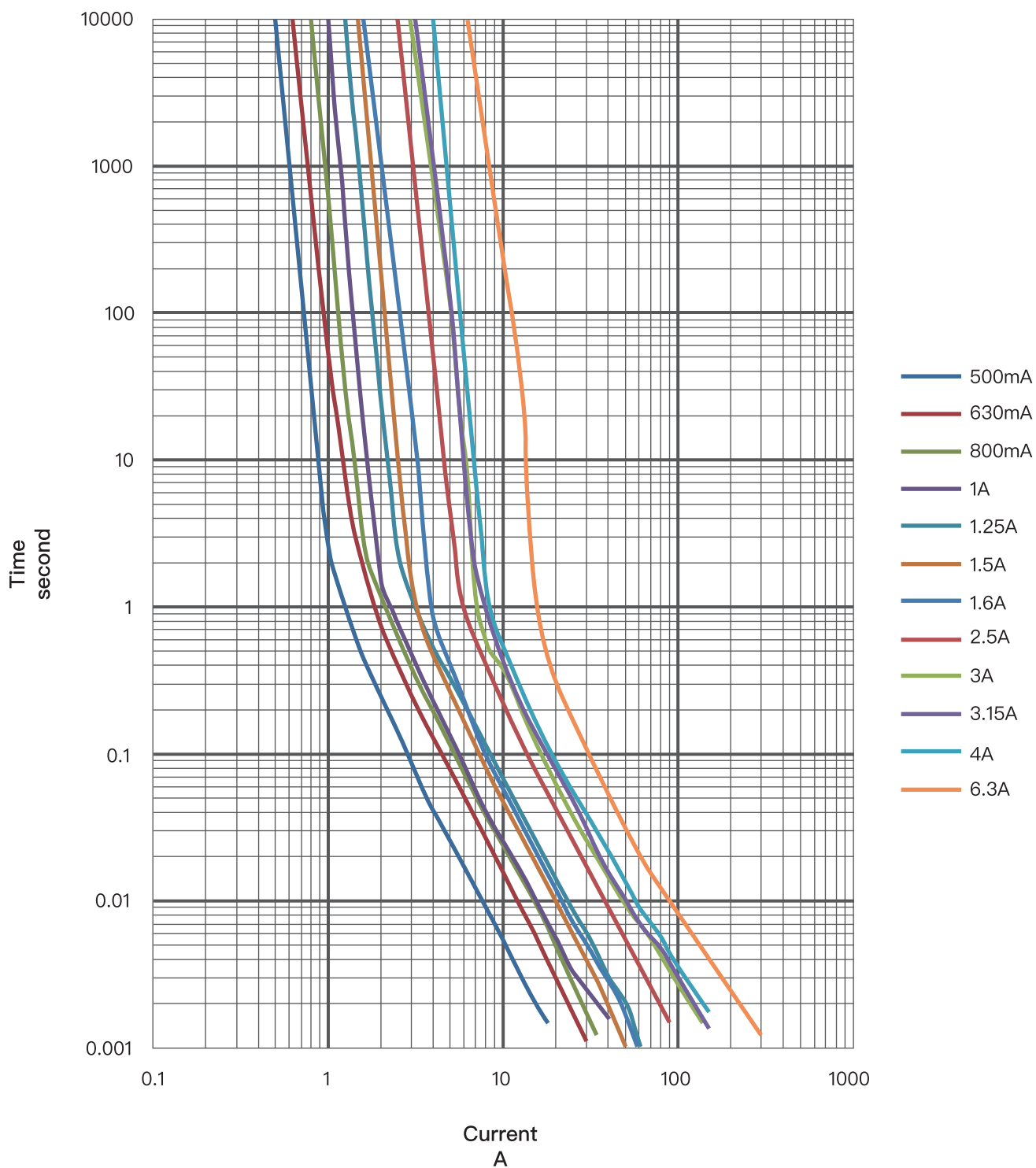
When the 100% times of rating electric current passes the fuse, After reaching thermal balance , the temperature on the fuse surface rising is not higher than 135℃ Rising temperature= The surface temperature–Ambient

■ 9.4 熔断时限/ Opening Time

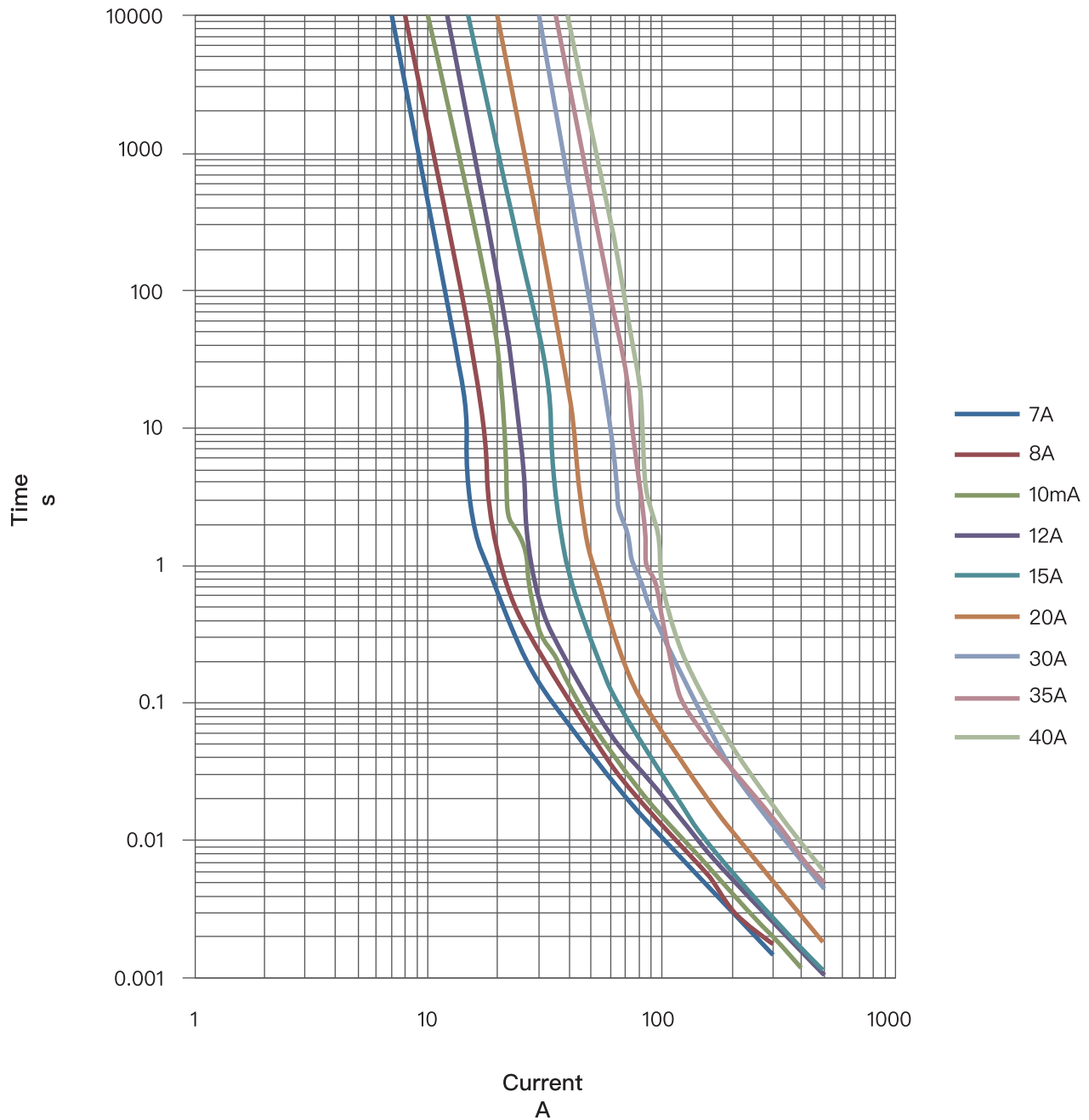
额定电流的%% of Ampere Rating	熔断时间 Opening Time (Time lag)
100%	T>4hrs
200%	T<120s
400%	1ms<T<1000ms
1000%	1ms<T<100ms

■ 9.5 平均时间电流曲线图 / Average Time Current Curves

2410 Series I-T Curve 500 mA–6.3A



2410 Series I-T Curve 7A-40A



环境特性 / Environmental Characteristic

■ 10.1 使用温度范围 / Operating Temperature

-55°C ~ +125°C。

■ 10.2 保存条件 Stock Condition

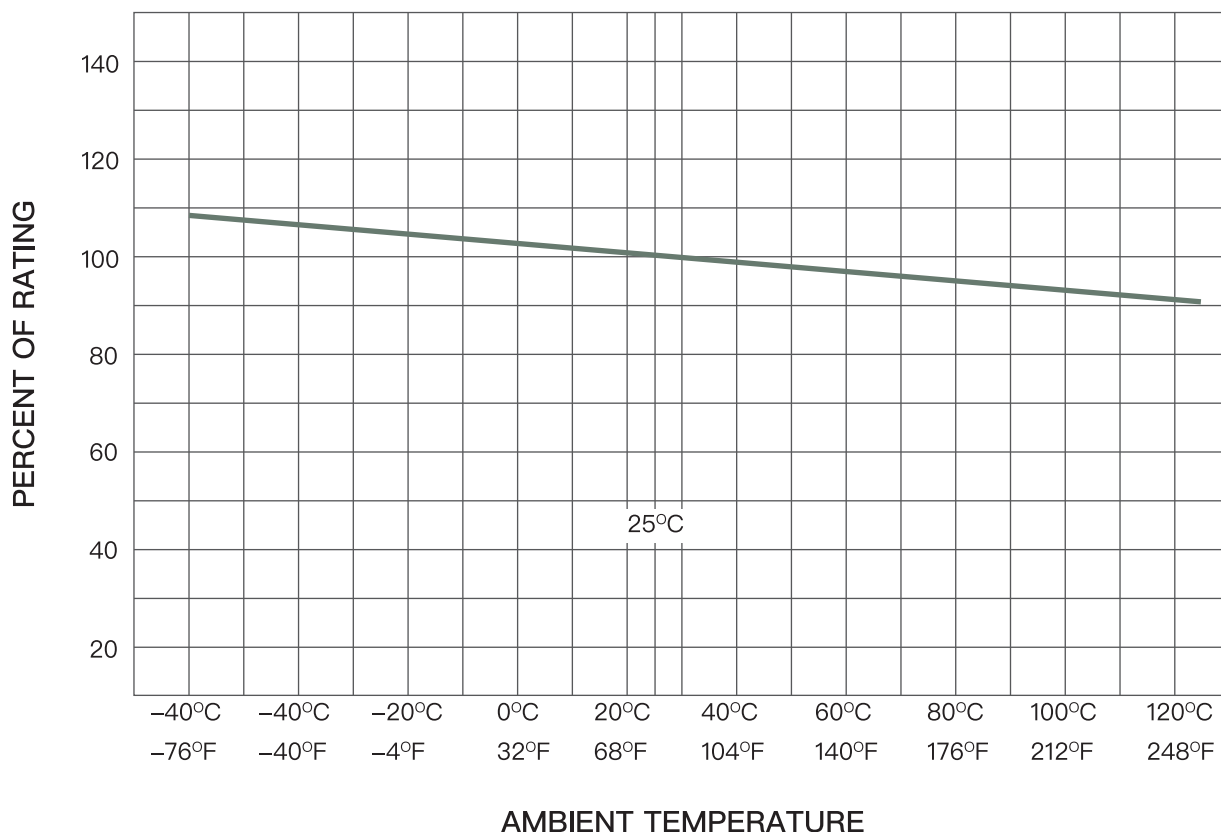
温度在 10°C~40°C，相对湿度≤75%平均可以存放 2 年。

Can be stored for 2 years under tight seal condition at temperature of 10°C~40°C, relative humidity ≤75%

■ 10.3 若操作环境温度超出 25±5°C 范围，在选用保险丝规格时，需考虑操作环境温度对保险丝的影响，请参照如下：温度-电流曲线图。

When choosing the fuse's specification, if the operating environmental temperature beyond the scope from 20~30°C, engineer should consider the environmental temperature's affection to fuses. Please refer: Temperature Rerating Curve:

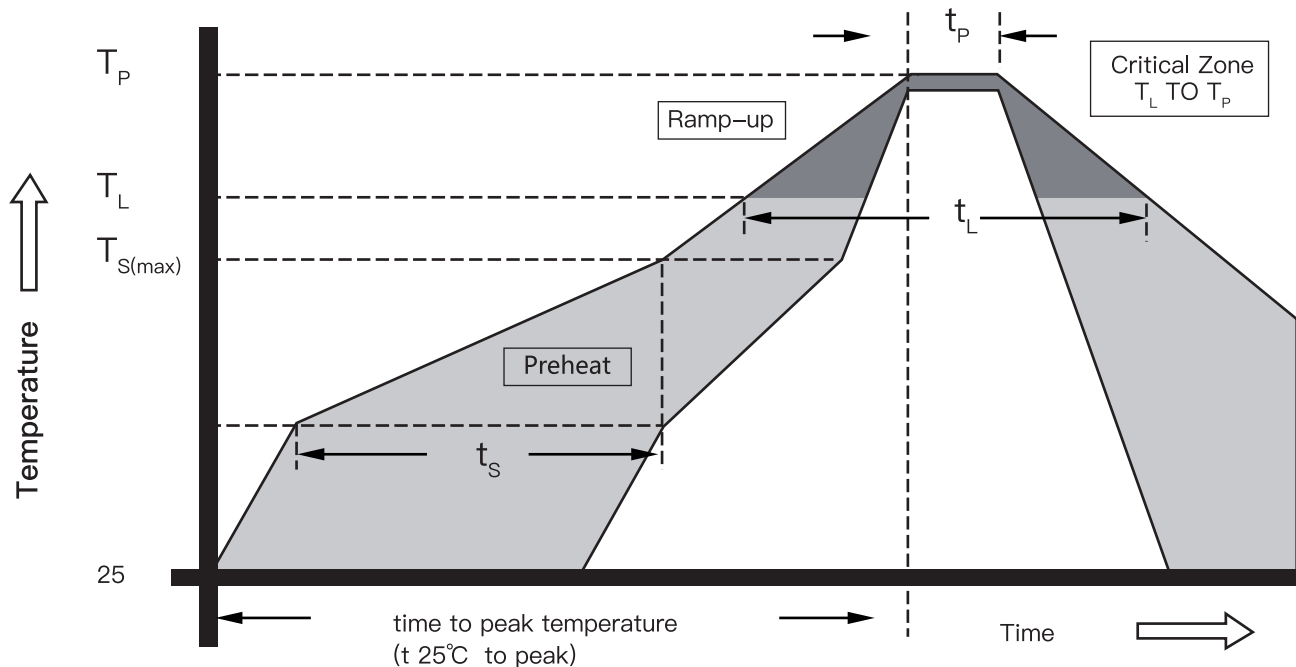
Temperature Rerating Curve



建议焊接参数 / Recommended Soldering Parameters

- A.回流焊/Infrared Reflow 温度 Temperature 260°C 时间 Time 10sec Max;
B.波峰焊/ Wave soldering 温度 Temperature 260°C 时间 Time 10sec Max;
C.烙铁焊/Hand Soldering 温度 Temperature 350°C 时间 Time 3sec Max
烙铁避免接触铜帽 Soldering iron avoid touch Copper cap

Profile Featurn	Pb-Free assembly
Average Ramp-up Rate (Tsmx to Tp)	3°C/sec Max.
Preheat Temperature Max Ts(min) Temperature Max Ts(max) Time(Tsmin to Tmax)	150°C 200°C 60-120sec
Peak Temperature(Tp)	250°C
Time within 5°C of actul Peak Temperature(Tp)	5 sec
Melting tin time(TL)	20sec~40sec
Ramp-down Rate	6°C/sec Max
Time 25°C to peak Temperature	8minutes Max



回流焊接参考温度 Recommend Reflow profile

包装 / Packaging

■ 12.1 包装袋/盒印明下列标示: / The following items indicated on the label:

产品料号、额定(电压、电流)、分断类型及安规名称。

Catalog number, ratings (voltage, current), interrupting type and safety mark.

包装材料均符合 ROHS/REACH/HF 的环保要求, 且包装材料不会和零件发生化学反应, 造成不良。

The packing material conforms to ROHS/REACH/HF environmental protection request. And the packing materials will not have the chemical reaction with the components.

■ 12.2 包装数量 / Packing Quantity

每 1500pcs 一卷/Every 1500 PCS for 1 roll

每盒5卷/Each box 5 rolls

