Description 描述

TEPK Series is a chip type surface mountable device that can protect against both overcurrent and overcharging. It comprises a fuse element to ensure stable operation under normal electrical current and to cut off the current when overcurrent occurs. It also comprises a resistive heating element that could be used in combination with a voltage detecting means, such as IC and FET. When overvoltage is detected, the heating element is electrically excited to generate heat to blow the fuse element to achieve overvoltage protection.

TEPK 系列是一种表面贴装式电池保护器，可以防止过电流和过充电。它包括保险丝元件，以确保在正常电流下稳定运行，并在发生过电流时切断电流。它还包括电阻加热元件，该电阻加热元件可以与诸如 IC 和 FET 的电压检测装置组合使用。当检测到过电压时，加热元件被电激励以产生热量来熔断熔丝元件，从而实现过电压保护。

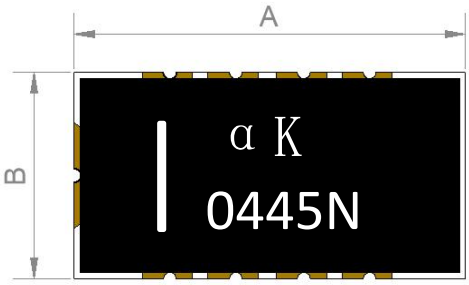
Features 特点

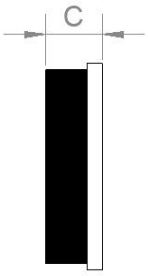
- Protect Li-ion battery from overcurrent and overcharge 锂电池过流过充保护
- Surface mount 表面贴装
- Halogen free / Sb free 无卤/无锑
- RoHS compliance 符合 RoHS
- Fast response time 响应快速

Application 应用

- Moped 助力车
- Lawn mower 割草机
- Energy storage batteries 储能电池
- Vacuum cleaner 吸尘器
- Electric bicycles 电动自行车
- BMS 电池管理系统

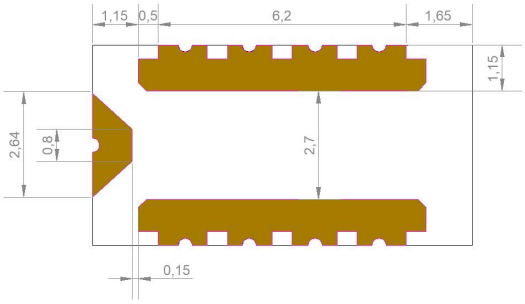
Dimensions 尺寸

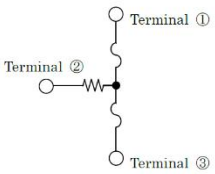




Code	A	B	C
Spec.(mm)	9.5 ±0.5	5.0 ±0.5	2.2max

* Without extra notification the tolerance is ± 0.20 mm
除非特殊注明，否则默认公差为 ±0.20 mm





Specifications 规格

Part Number 料号	Irated 额定电流 (A)	Cells in series 电芯串联数	Vmax 额定电压 (Vdc)	Ibreak 分断电流 (A)	Vop 加热电阻动作电压范围 (V)	Resistance 电阻	
						R_{heater} 加热电阻 (Ω)	R_{fuse} 保险丝电阻 (mΩ)
TEPK0445N	45	4	80/120	120	13.0-18.4	3.4-5.1	0.4-2.0

Notes:

I_{rated} = Current carrying capacity that is measured at 25°C thermal equilibrium condition

I_{break} = The current that the fuse element is able to interrupt

V_{max} = The maximum voltage that can be cut off by fuse

V_{OP} = Range of operation voltage

R_{heater} = The resistance of the heating element

R_{fuse} = The resistance of the fuse element

Cells in series = Number of battery cells connected in series in the circuit.

• Specifications are subject to change without notice.

注意：

I_{rated}=在 25℃环境温度下测量的载流能力

I_{break}=保险丝元件能够切断的电流

V_{max}=保险丝可切断的最大电压

V_{OP}=工作电压范围

R_{heater}=加热元件的电阻

R_{fuse}=保险丝元件的电阻

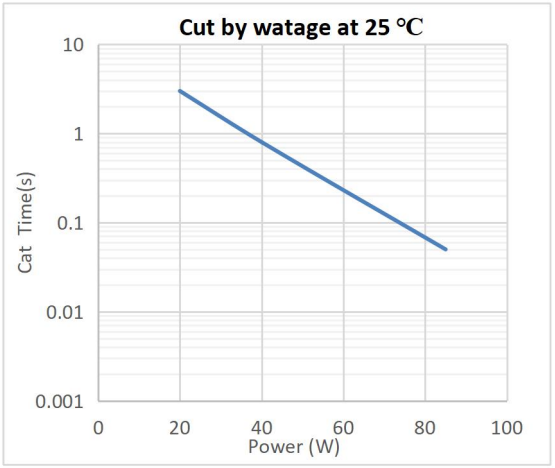
Cells in series=电路中串联连接的锂电池芯单元数量

•规格如有更改，恕不另行通知。

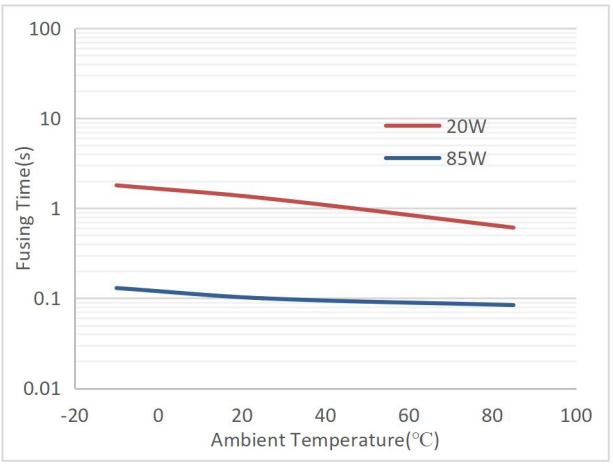
Typical Performance Data 性能曲线

Cut Time by Heater Operation

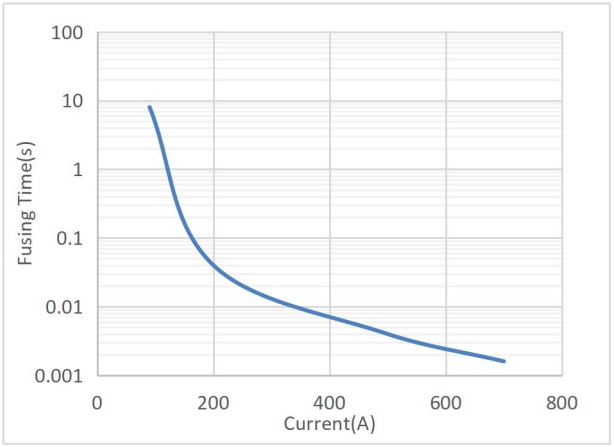
Various heater wattage at 25℃ ambient temperature



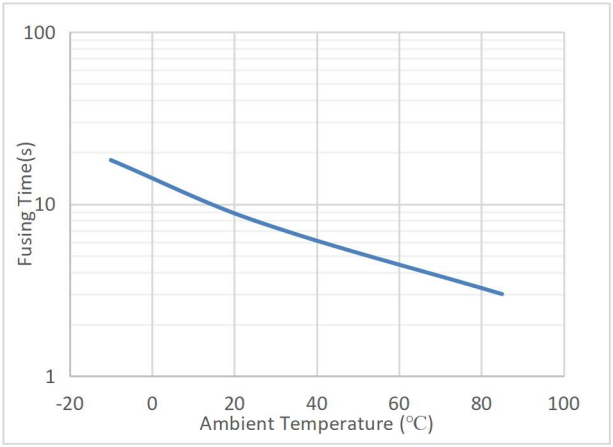
Constant heater wattage at various ambient tempera



Various interrupting current at 25℃ ambient temperature Constant

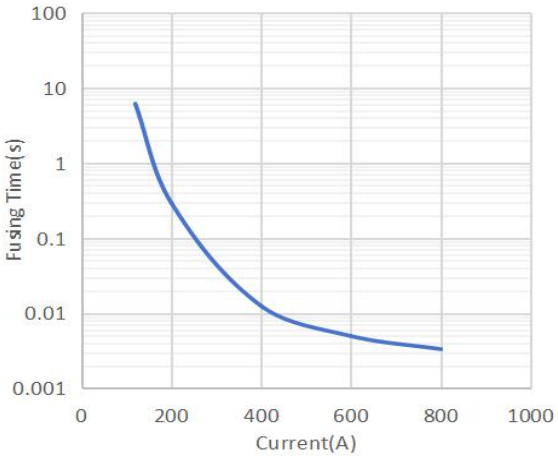


2x rated current at various ambient temperature

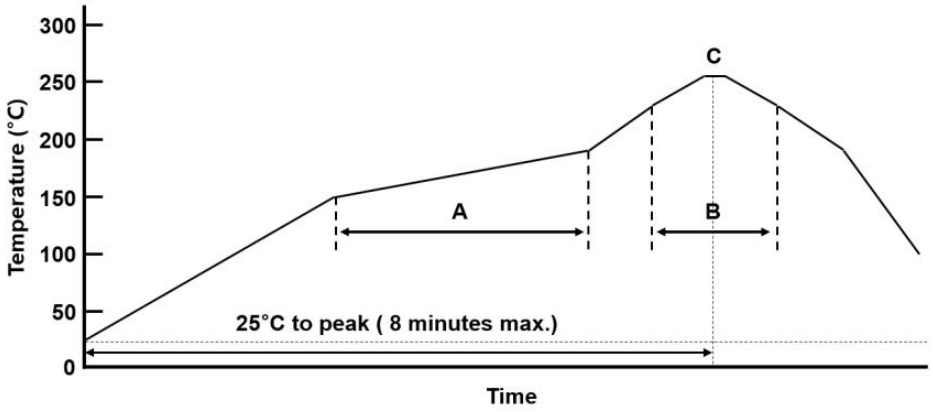


Current Carrying Capacity

Current Carrying Capacity at various ambient temperature

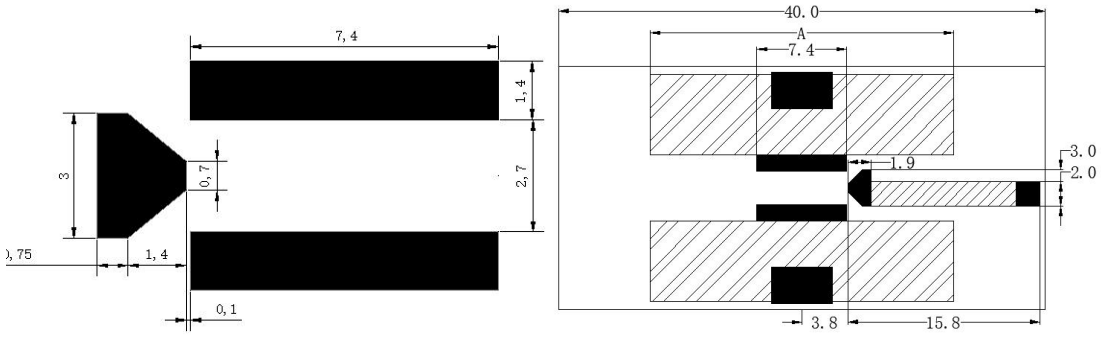


Reflow Profile 回流焊曲线



	A (Pre-Heating) 预热	B	C (Peak) 峰值
Temperature(℃) 温度	150~190℃	230±5℃	255±5℃
Time(s) 时间	90±30s	Max.30s 最大 30s	Max.5s 最大 5s

Recommended Solder Pad Dimension 推荐焊盘尺寸



Unit：mm

Type 规格	Materials 材质	Width of copper coating 覆铜宽度 A	Thickness 厚度	Copper thickness 铜厚	Wires 引出线
45A	FR-4	25mm	0.6 mm	3.0OZ	AWG10

Part Number and Marking System 品名&标识

TEP	K	04	45	N	
1~3	4	5~6	7~8	9	10~12

1~3 : **Product series / 产品系列**
TEP: Sea&Land battery fuses
陆海电子电池保护器件

4 : **Device Size / 封装尺寸**
K: 9550 Size / 封装尺寸 9550

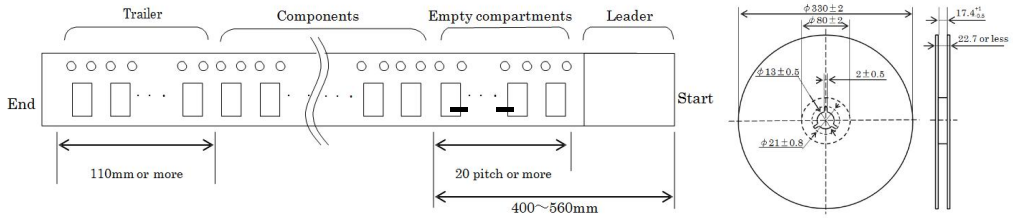
5~6 : **Cells in series / 应用电池串数**
04:4 Cells in series / 4 串电池使用

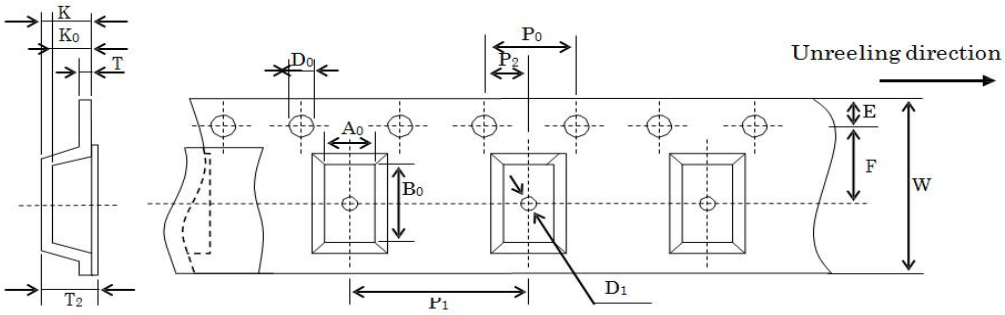
7~8 : **Rated Current / 使用电流**
45: I_{rated} 45A / 使用电流 45A

9 : **Battery category / 应用电池类别**
N: NCM/NCA / 三元锂电池
L: LFP / 磷酸铁锂电池

10~12 : **Special suffix / 其他备注**

Tape and Reel Specifications (mm) 载带和圆盘规格（mm）





A_0	B_0	W	F	E	P_1
5.5±0.1	10.0±0.1	16.0±0.2	7.5±0.2	1.75±0.2	8.0±0.1

P_2	P_0	D_0	T	T_2	K	K_0	D_1
2.0±0.05	4.0±0.1	1.55±0.05	0.3±0.1	3.3 or less	3.2 or less	2.4±0.1	1.5 or more

Packaging 包装

3000pcs/reel or 800pcs/reel