



贝特卫士®

更好的电路安全卫士!
You build electronics, We safeguard them!

承 认 书

APPROVAL SHEET

编 号 No.	2492200901-A1-B
日期 Date	2019.03.04

客 户 Customer	
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品 名 Product	249 Power Battery Packs Protection Fast-Acting Series
系 列 Series	249 Series

料号 Part No.	规格描述 Specification	备注 Remark
贝特电子 Betterfuse		
客 户 Customer		

环保特别提示 Special instructions for environmental protection
本产品:

供应商-贝特电子 Supplier-Betterfuse	零件承认章 Approval Signet	客 户 Customer	零件承认章 Approval Signet
制 作 Make			
审 核 Check			
确 认 Approval			

联络 Contact			
业务 Sales	电话 Telephone	手机 Cellphone	邮箱 E-mail
零件承认后敬请回签一份给我司留存, 或将承认后的封面传真(0769-8352 1857)至我司, 谢谢!			



Document Record						
No.	Date	Modified Content	Page	Edition	Prepared/modified by	Checked by
1	2017.12.06	New		A/0	J.Q.	Jun Li
2	2019.03.04	Update Typical Voltage Drop and I2T parameter	7	A/1	Xiang Xiong	Jun Li

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1. SCOPE AND DESCRIPTION



Following electronic product specifications apply to fuses of the 249 series. The 249 series is a Very Fast-acting type SMD fuse for over-current protection. As the Very Fast-acting characteristics these fuses can resist inrush current. And widely used in Power Battery Packs Protection, notebook PC, telecom system, LCD/PDP TV, wireless goods, LCD monitor, white goods, LCD/PDP panel, game console, power supply, net working and other electronics products.

2. GENERAL INFORMATION

General Description

249 SMD fuse for the small size and good electrical performance, reliability and quality. The solder-free design provides excellent on-off and temperature cycling characteristics during use and also makes our SMD fuses more heat and shock tolerant than typical SMD fuses.

Detailed Features

- Rapid interruption of excessive current
- Compatible with reflow and wave soldering
- Ceramic body and silver plated copper terminal
- Excellent environmental integrity
- One time positive disconnect
- Lead-free, Halogen-free, RoHS compliant
- Designed to UL 248-1

3. AGENCY APPROVALS

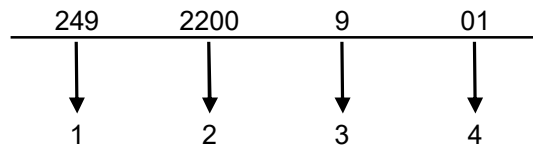
Agency	Agency File Number	Voltage / Ampere Range
	E300003	72VDC : 0.2~30A



4. PART NUMBERING SYSTEM

4.1 Part Number

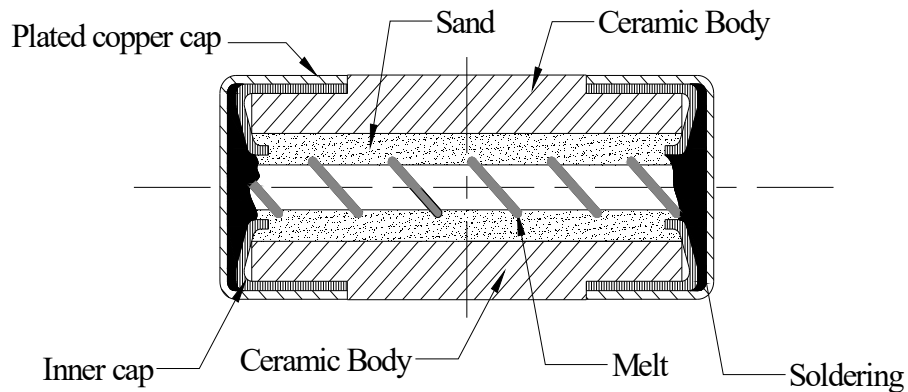
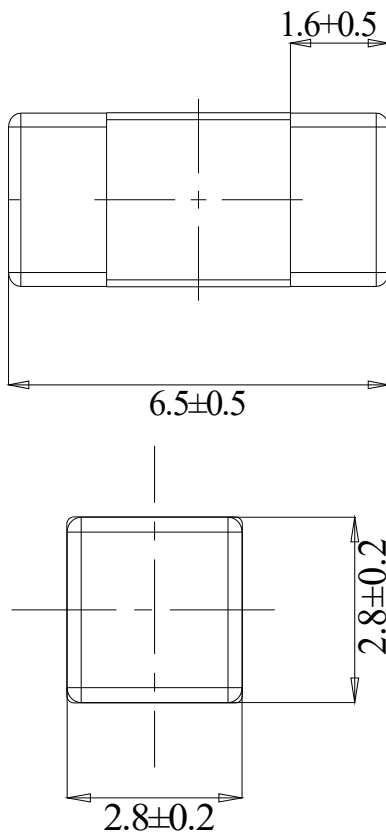
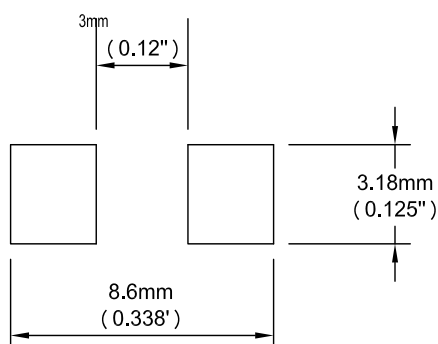
Example: 2492200901



- | | |
|----------------------------|---------------------------|
| 1.Product Series..... | 249 |
| 2.Ampere Rating..... | 20A (see table 4.2 below) |
| 3.Max. Voltage Rating..... | 9: 72V DC |
| 4.Supplementary Code..... | Complement code |

4.2. Ampere/ Voltage Rating Table

AMP CODE	AAMPERE RATING	VOLTAGE RATING
2200	20A	72V DC
2250	25A	72V DC
2300	30A	72V DC

**5. MECHANICAL SPECIFICATIONS****Dimensions** (units: mm/inch)**Recommended Pad Layout**

Note: Minimum copper layer thickness = 100um.

Operating Temperature:

-55°C to +125°C

Storage Conditions:

-55°C to +125°C

Relative humidity: ≤ 75% yearly average
without dew, maximum 30 days at 95%**Vibration Resistance:**

24 cycles at 15 min. each (60068-6)

10-60Hz at 0.75mm amplitude

60-2000Hz at 10g acceleration



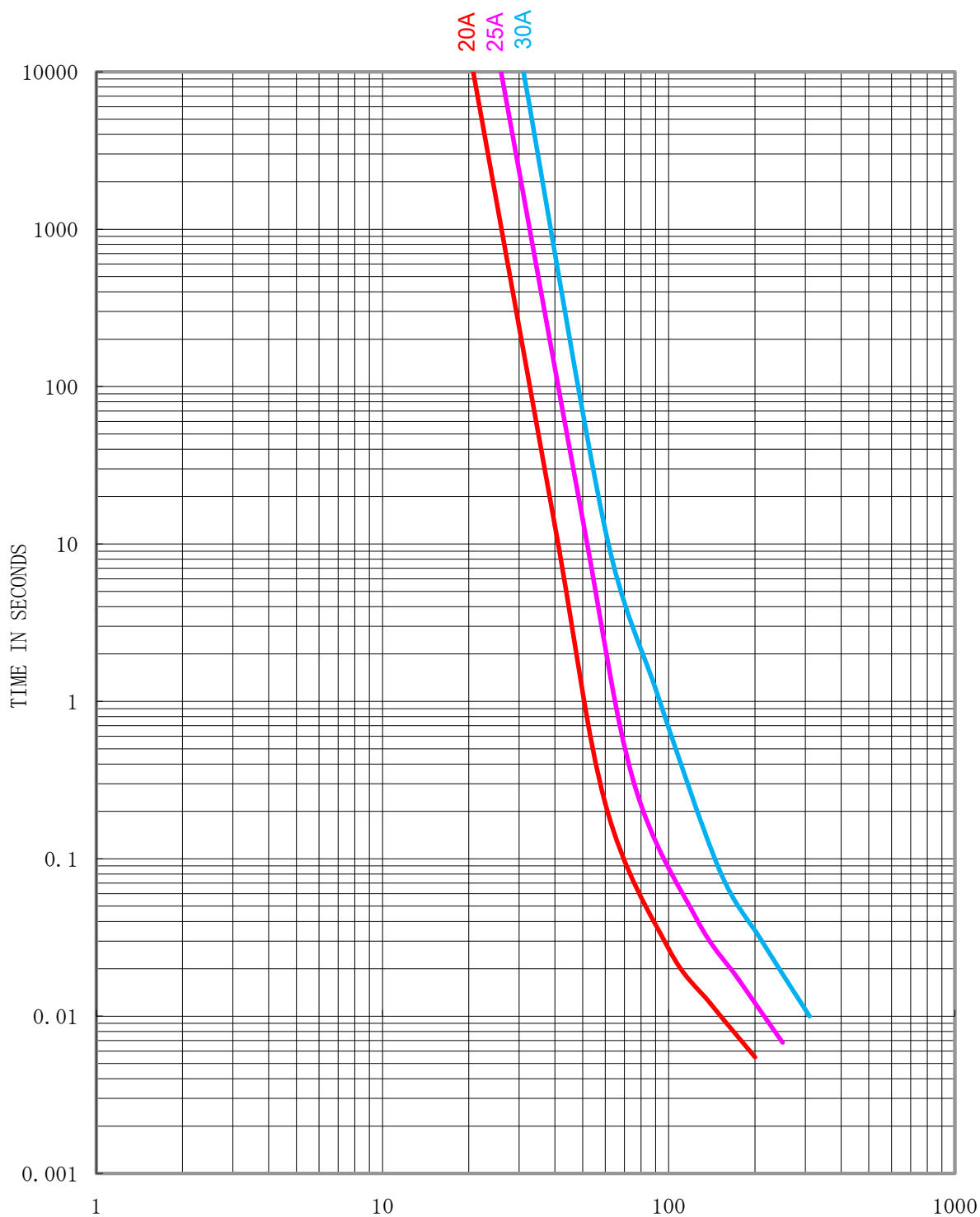
6. ELECTRICAL SPECIFICATIONS

Time vs Current Characteristics Table

(measured with constant current power supply)

Time vs Current Characteristics: UL 248-1

Rated Current	100%	200%
20-30A	>4h	<60s





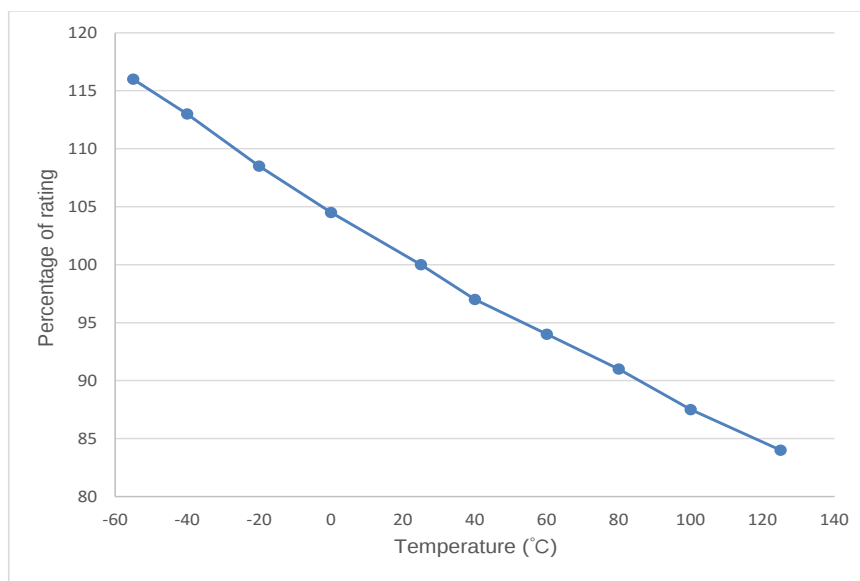
Electrical characteristics

Electrical Characteristics							
Amp Code	Rated Current	Max. Voltage	Typical Voltage Drop (mV)	Breaking Capacity	Typical Melting I ² t (A ² sec)	Typical Cold Resistance(mΩ)	Approvals
2200	20A	72V DC	100	500A@72VDC	220	1.98±20%	●
2250	25A		70		420	1.53±20%	●
2300	30A		60		990	1.04±20%	●

Note: (1) Permissible continuous operating current is ≤100% at ambient temperature of 23°C (73.4°F)

(2) Typical pre-arcing I²t are measured at 10I_n current.

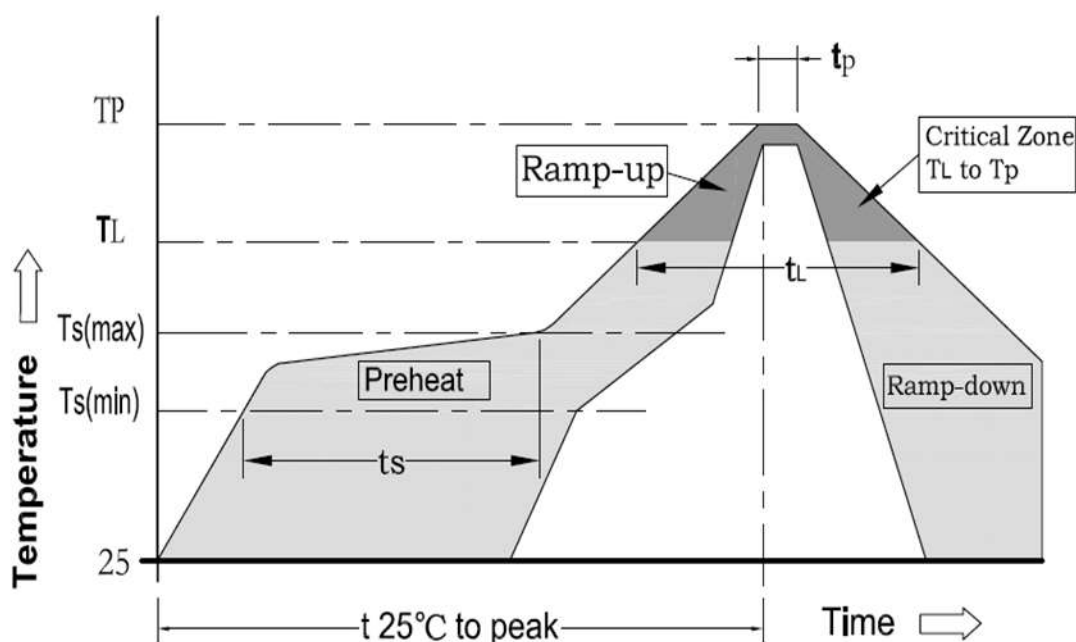
Temperature Derating Curve



$$\text{Calculation for ideal fuse selection} = \frac{\text{Operating Current (A)}}{\text{Rating (\%} \times 0.75)}$$



7.SOLDERING PARAMETERS



1. Infrared Reflow:
Temperature: 260°C
Time: 5sec Max.
Recommend reflow profile

2. Wave Soldering
Reservoir Temperature: 260°C
Time in Reservoir: 10sec Max.

3. Hand Soldering
Temperature: 350°C
Time: 3sec Max.
Soldering iron avoid touch
Brass Cap.

Profile Feature		Pb-Free Assembly
Average Ramp-UP Rate(Tsmax to Tp)		3°C/s Max.
Preheat	Temperature Min(Ts min)	150°C
	Temperature Max(Ts max)	200°C
	Time(Tsmin to Ts max)	60sec~120sec
Peak Temperature(TP)		260°C
Time within 5°C of actual Peak Temperature(TP)		5sec
Melting tin time(TL)		20sec~40sec
Ramp-Down Rate		6°C/s Max.
Time 25°C to Peak Temperature(TP)		8 minutes Max.

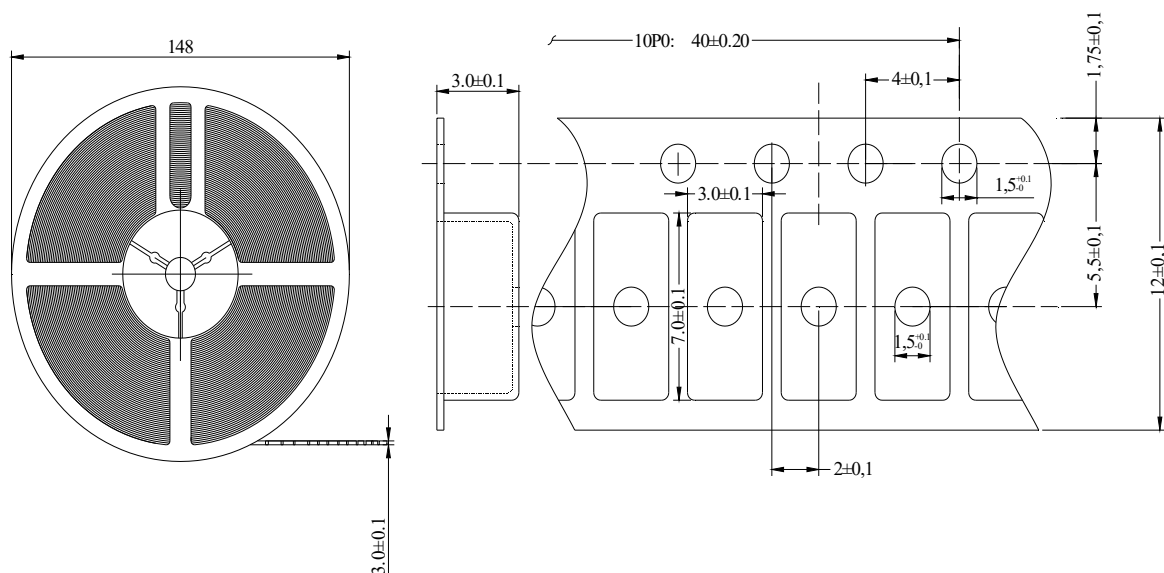
8.ORDERING INFORMATION

The following information are necessary in order to place your order with us correctly:

Series	Amp Code	Supplementary Code	Qty
249			

**9. PACKING INFORMATION****Taping detail**

Unit:(mm)



Quantity per reel

1000pcs

Weight per reel

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东莞市贝特电子科技股份有限公司

Room 601 of 16 Block, Xinzhu Yuan, No.4, Xinzhu Road, Songshan Lake Hightech Industrial Development Zone, Dongguan City, Guangdong P.R.C
中国广东省东莞市松山湖国家高新技术产业开发区新竹路4号新竹苑16座办公601

Tel: +86 769-2307 8212 Fax: +86 769-8352 1857

Web: www.betterfuse.comEmail: info@betterfuse.com



10.APPENDIX



ONLINE CERTIFICATIONS DIRECTORY

JDYX2.E300003
Fuses, Supplemental - Component[Page Bottom](#)**Fuses, Supplemental - Component**[See General Information for Fuses, Supplemental - Component](#)

DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD
RM 601 OF 16 BLK
XINZHUYUAN NO 4 XINZHU RD
SONGSHANLAKE HIGHECH INDUSTRIAL DEVELOPMENT ZONE
DONGGUAN, GUANGDONG 523808 CHINA

E300003

Cat. No.	Size mm(in)	Amps (A)	Volts (V)	Interrupting Rating (A)
230, 249, 231, 232, 233, 234				
	6.1 x 2.6 x 2.6 (0.24 x 0.10 x 0.10)	0.2 - 2	250Vac	100
		0.2 - 15	125Vac	50
		0.2 - 15	125Vdc	50
		0.2 - 15	72Vdc	50
		0.2 - 30	72Vdc	500

Marking: Company name and model designation.

Last Updated on 2016-08-08

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