承　　认　　书
APPROVAL　SHEET

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

客　　户 Customer	

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

TABLE OF CONTENTS

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 siler plated copper terminal
- Excellent environmental integrity
- One time positive disconnect
- Lead-free, Halogen-free, RoHS compliant
- Designed to UL 248-1

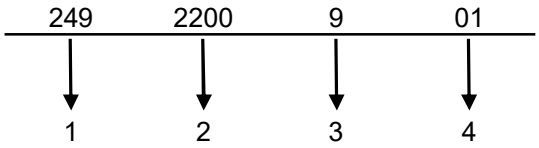
3. AGENCY APPROVALS

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

4. PART NUMBERING SYSTEM

4.1 Part Number

Example: 2492200901

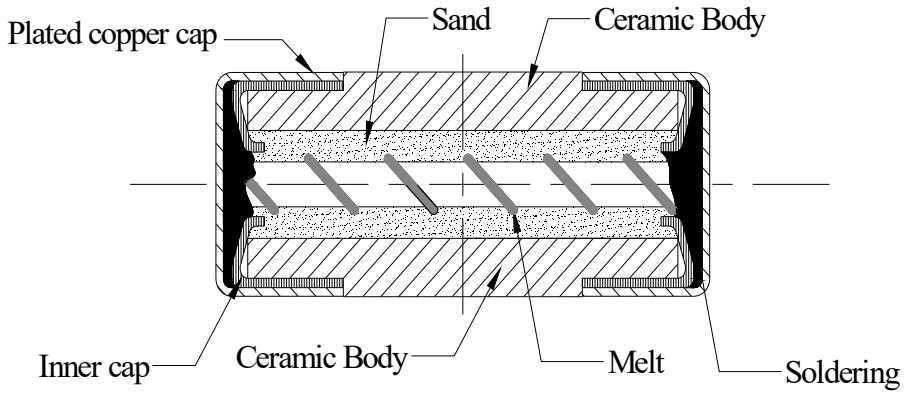


1.Product Series……..... 249
2.Ampere Rating……..... 20A (see table 4.2 below)
3.Max. Voltage Rating…… 9: 72V DC
4.Supplementary Code…… Complement code

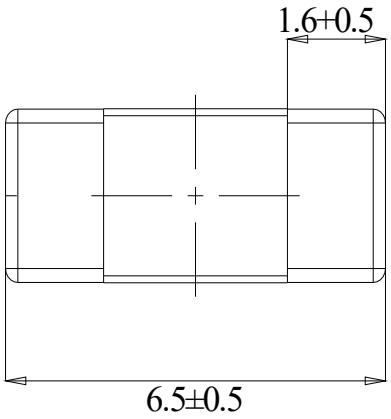
4.2. Ampere/ Voltage Rating Table

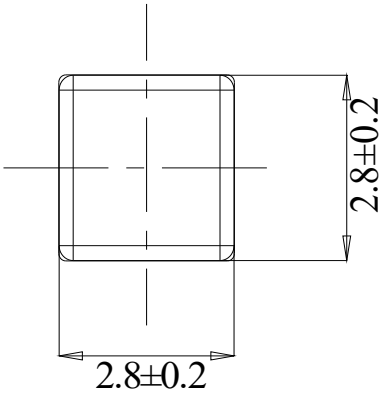
AMP CODE	AAMPERE RATING	VOLTAGE RATING
2200	20A	72V DC
2250	25A	72V DC
2300	30A	72V DC

5. MECHANICAL SPECIFICATIONS

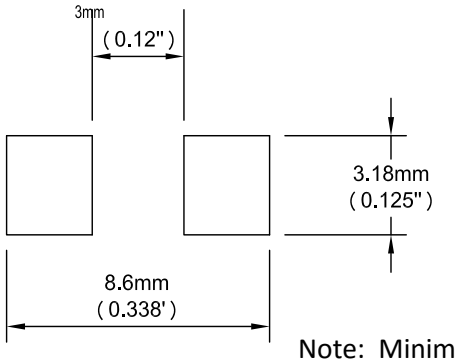


Dimensions (units: mm/inch)





Recommended Pad Layout



Operating Temperature:

-55°C to +125°C

Storage Conditions:

-55℃ to +125℃

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

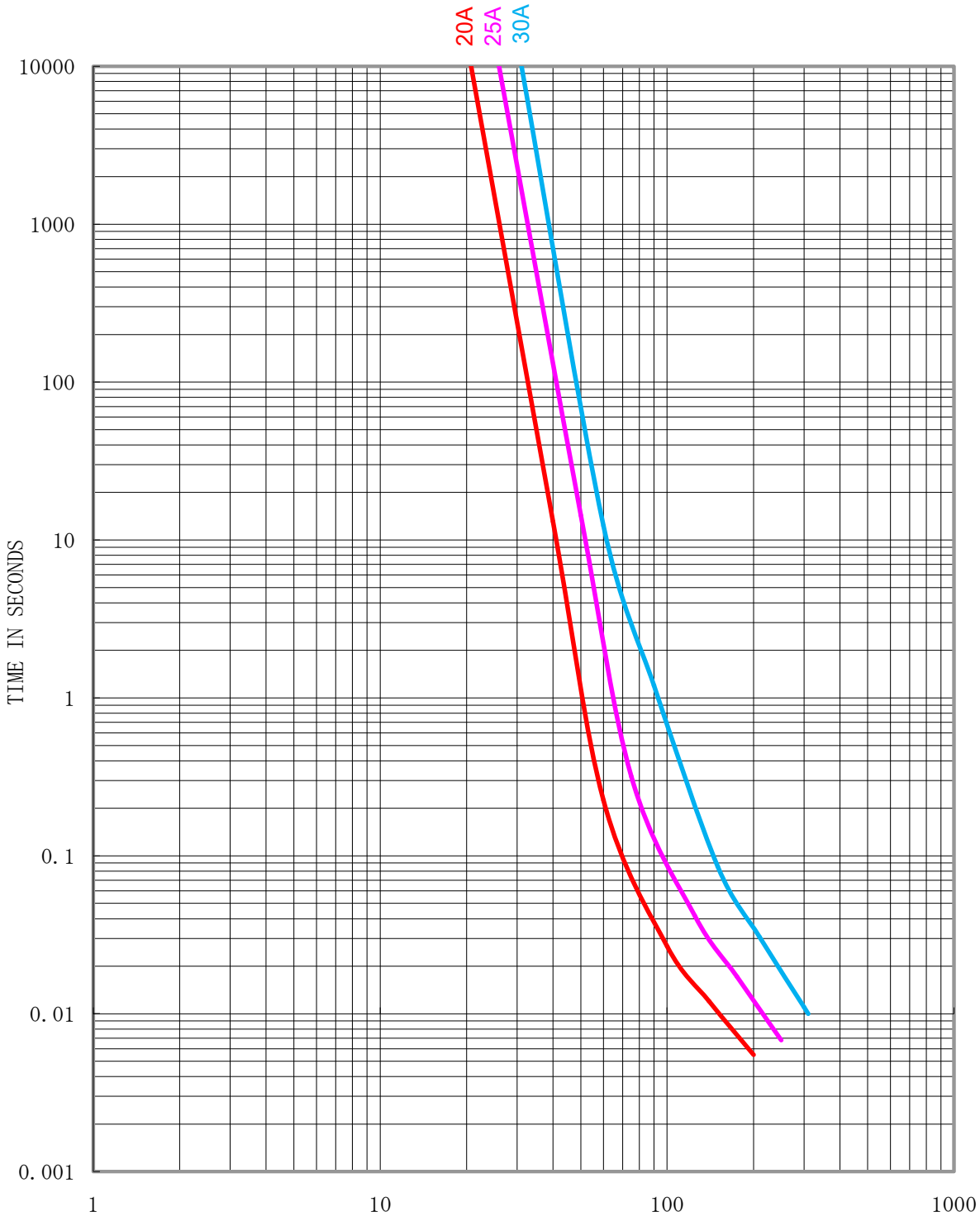
Note: Minimum copper layer thickness = 100um.

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

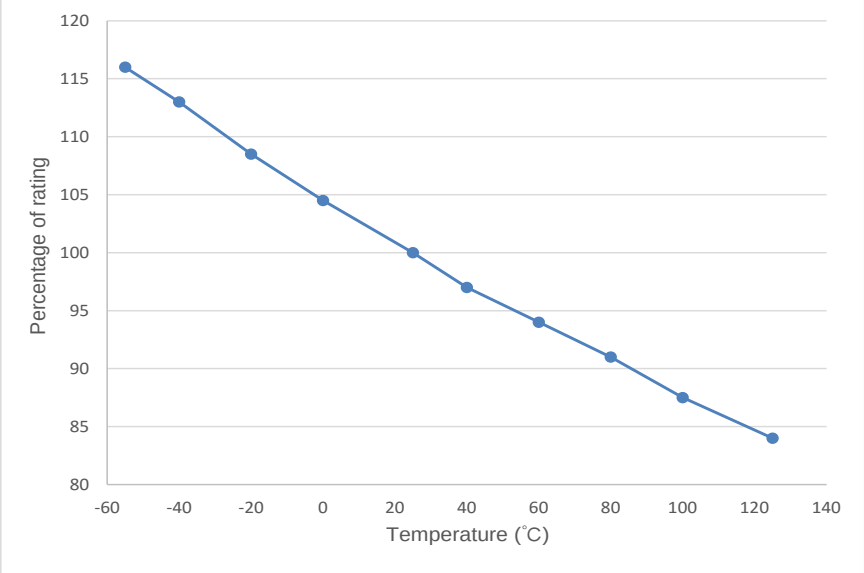


Electrical characteristics

Electrical Characteristics							
Amp Code	Rated Current	Max. Voltage	Typical Voltage Drop (mV)	Breaking Capacity	Typical Melting I²t (A²sec)	Typical Cold Resistance(mΩ)	Approvals cURus
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%	•

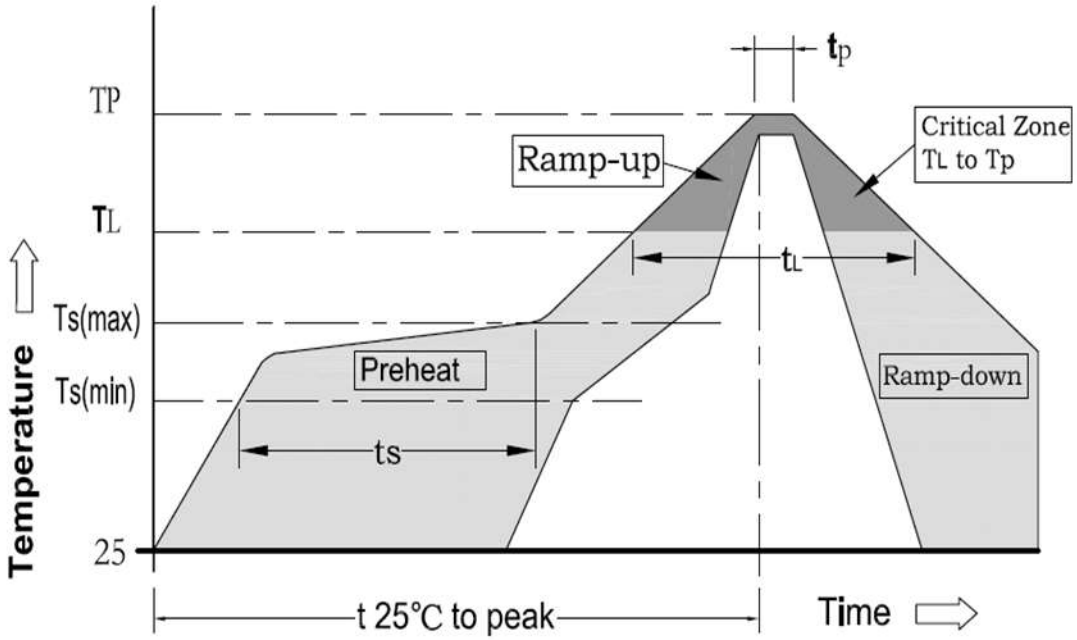
Note: (1) Permissible continuous operating current is ≤100% at ambient temperature of 23°C (73.4°F)
(2) Typical pre-arcing I2t are measured at 10In current.

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℃
Time: 5sec Max.
Recommend reflow profile

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

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

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

8.ORDERING INFORMATION

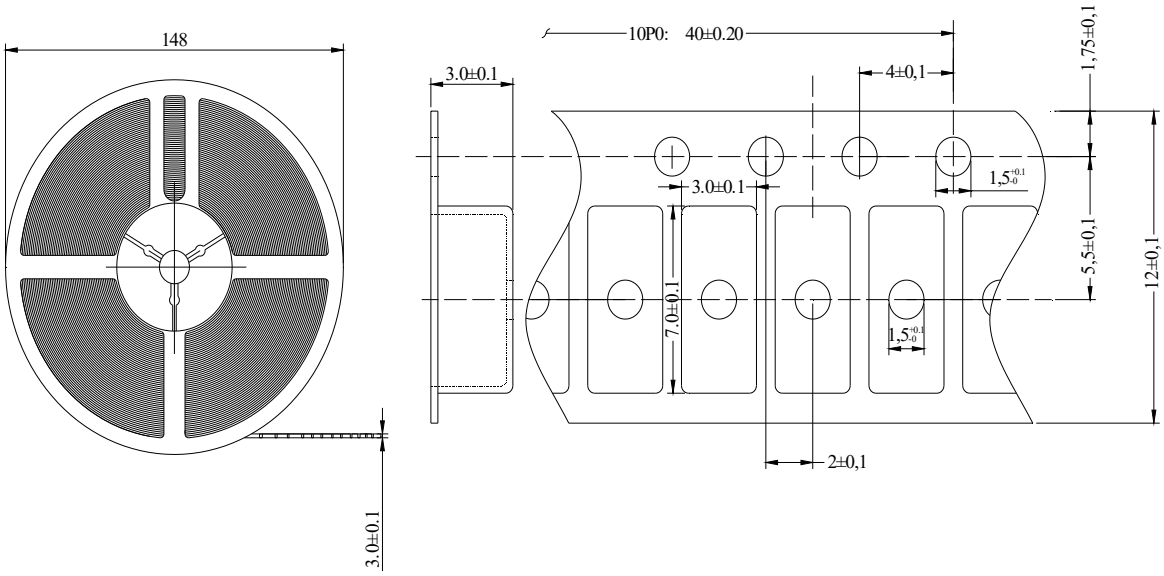
The following information are necessary in order to place your order with us correctly:

Series	Amp Code	Supplementary Code	Qty
249			

9.PACKING INFORMATION

Taping detail

Unit:(mm)



Quantity per reel	1000pcs	Weight per reel	

东莞市贝特电子科技股份有限公司
Room 601 of 16 Block, Xinzhuyuan, No.4，Xinzhu Road, Songshanlake 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.com** Email: 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 E300003
RM 601 OF 16 BLK
XINZHUYUAN NO 4 XINZHU RD
SONGSHANLAKE HIGHTECH INDUSTRIAL DEVELOPMENT ZONE
DONGGUAN, GUANGDONG 523808 CHINA

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Surface Mount Fuses ***category:***

Click to view products by Better ***manufacturer:***

Other Similar products are found below :

FHC20402ADTP NFVC6125S0R50TRF SFT-125MA TF16SN2.00TTD FCC16501ABTP FCC16102ABTP FHC16322ADTP 0308.250UR 0308.375UR 0308.750UR 0308001.UR 030801.5UR F0603G0R03FNTR SKY87604-12 SKY87604-11 SKY87604-13 R451003.L R451.500L R451001.L 3-103-119 3-103-123 ABB-A 25A 500V SGB401 SGB075 0154002.DRL 0154008.DRL 0154.500DRL 189140.1,25 189140.0,8 189140.0,4 189140.0,63 189140.0,25 0402FA-R200 0402SFF150F/24-2 0435.250KRHFS 0468003.WR 0494001.NRHF 0494002.NRHF 0494003.NRHF 049402.5NRHF 049403.5NRHF 0494.250NRHF 0494.375NRHF 0494.500NRHF CF06V3T1R60 CF06V3T2R50 06H1300D JFC0603-1200FS CP06V3T2R0 06F-0200L1