



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.	1222150000-B/0-B
日期 Date	2023.08.08

客 户 Customer	
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品 名 Product	1206 Size Chip Fuse
系 列 Series	122 series

料号 Part No.	规格描述 Specification	备注 Remark
贝特电子 Betterfuse	1206 Low BC, Time-Lag current fuse	
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	2019.11.04	Draft		A/0	YaLan Wang	Fei Gao
2	2020.07.12	Update temperature derating chart	7	A/1	YaLan Wang	Fei Gao
3	2020.07.30	Update time of 10In	6	A/2	Wenshan Chen	Fei Gao
4	2021.09.13	Update figure	5	A/3	Wenshan Chen	Fei Gao
5	2022.03.07	Modified braid tolerance	9	A/4	Hongkun Huang	Fei Gao
6	2022.12.26	Add rated voltage of 48V	3,4,7	A/5	Hongkun Huang	Fei Gao
7	2023.08.08	Add rated voltage of 36V	4,7	B/0	Hongkun Huang	Yongcong Jin

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1. SCOPE AND DESCRIPTION



Following electronic product specifications apply to chip fuses of the 122 series. The 122 series is a time-lag type chip fuse for over-current protection.

With their small size and layer type, 122 chip fuses are ideal for industrial products. They are widely used in cellphones, DVD players, battery packs, hard disk drives and digital cameras.

2. GENERAL INFORMATION

General Description

The 122 chip fuses stand out due to their ultra-small size and excellent electrical performance, reliability and quality. The solder-free design provides outstanding on-off and temperature cycling characteristics during operation and also makes our chip fuses more heat and shock tolerant than typical subminiature fuses.

Detailed Features

- High inrush current withstanding capability;
- AEC-Q200 Automotive Grade Certified
- Compatible with reflow and wave soldering
- Ceramic and glass construction
- Excellent environmental integrity
- One time positive disconnect
- Lead-free, Halogen-free, RoHS compliant
- Designed to UL 248-14

3. AGENCY APPROVALS

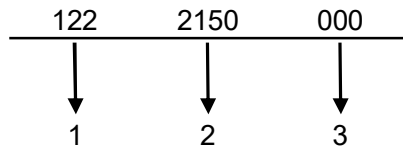
Agency	Agency File Number	Voltage / Ampere Range	
	E300003	32VDC:4.5A~40A 36VDC:25A~40A 48VDC:100mA~30A	63VDC:4.5A~7A 72VDC:4.5A~7A



4. PART NUMBERING SYSTEM

4.1 Part Number

Example: 1222150000



- | | |
|-----------------------------|---------------------------|
| 1 .Product Series | 122(1206 size) |
| 2 .Current Rating | 15A (see table 4.2 below) |
| 3 .Supplementary Code | see table 4.3 below |

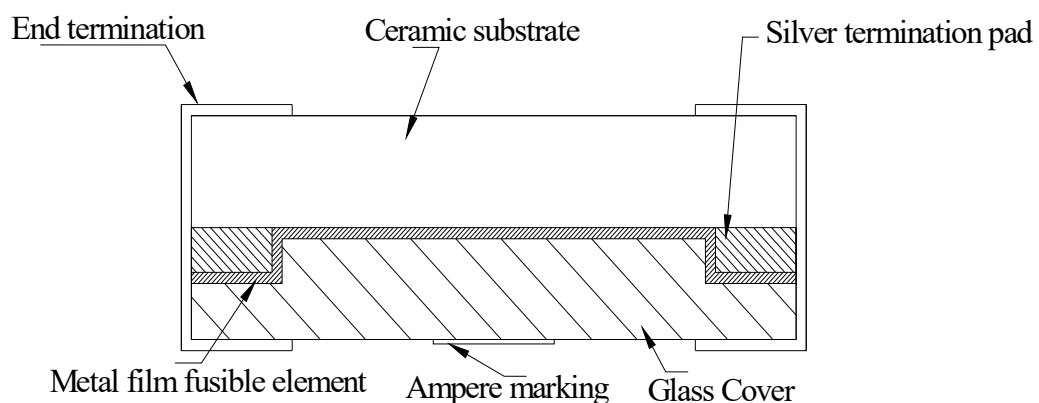
4.2. Current / Voltage Rating Table

AMP CODE	CURRENT RATING	VOLTAGE RATING
1450	4.5A	32/36/48/63 / 72V DC
1500	5.0A	32/36/48/63 / 72V DC
1600	6.0A	32/36/48/63 / 72V DC
1700	7.0A	32/36/48/63 / 72V DC
1800	8.0A	32 / 36 / 48V DC
2100	10.0A	32 / 36 / 48V DC
2120	12.0A	32 / 36 / 48V DC
2150	15.0A	32 / 36 / 48V DC
2200	20.0A	32 / 36 / 48V DC
2250	25.0A	32 / 36 / 48V DC
2300	30.0A	32 / 36 / 48V DC
2400	40.0A	32 / 36 / 36V DC

4.3 Supplementary Code Table

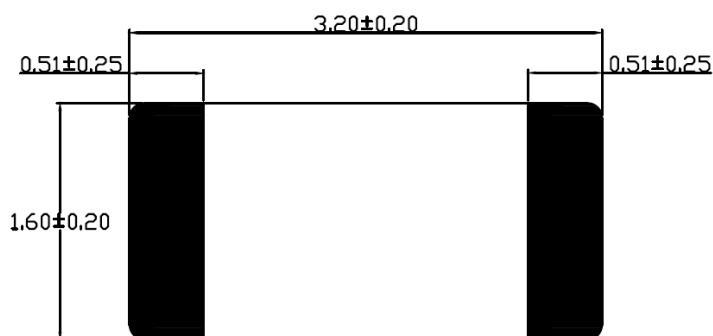
CODE	DESIGNATION
000	Tape-and-reel

5. MECHANICAL SPECIFICATIONS



**Dimensions** (unit: mm)

Top view

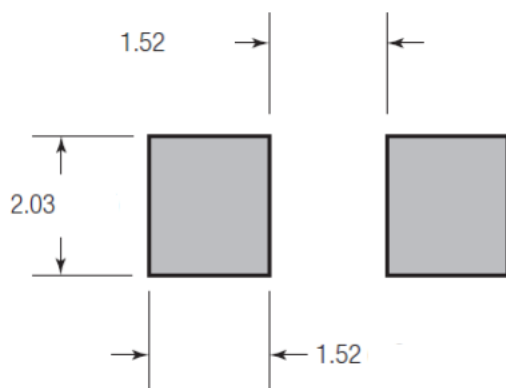


Side view

4.5A-30A



40A

**Recommended land pattern****Operating Temperature:** -55°C to $+150^{\circ}\text{C}$ **Storage Conditions:** $+10^{\circ}\text{C}$ to $+60^{\circ}\text{C}$ Relative humidity: $\leq 75\%$ yearly average
without dew, maximum 30 days at 95%**Vibration Resistance:**

120 cycles in 1 direction at 1 min. each

10-55Hz, 3 directions(X, Y, Z) in total

According to MIL-STD-202 Method 201A



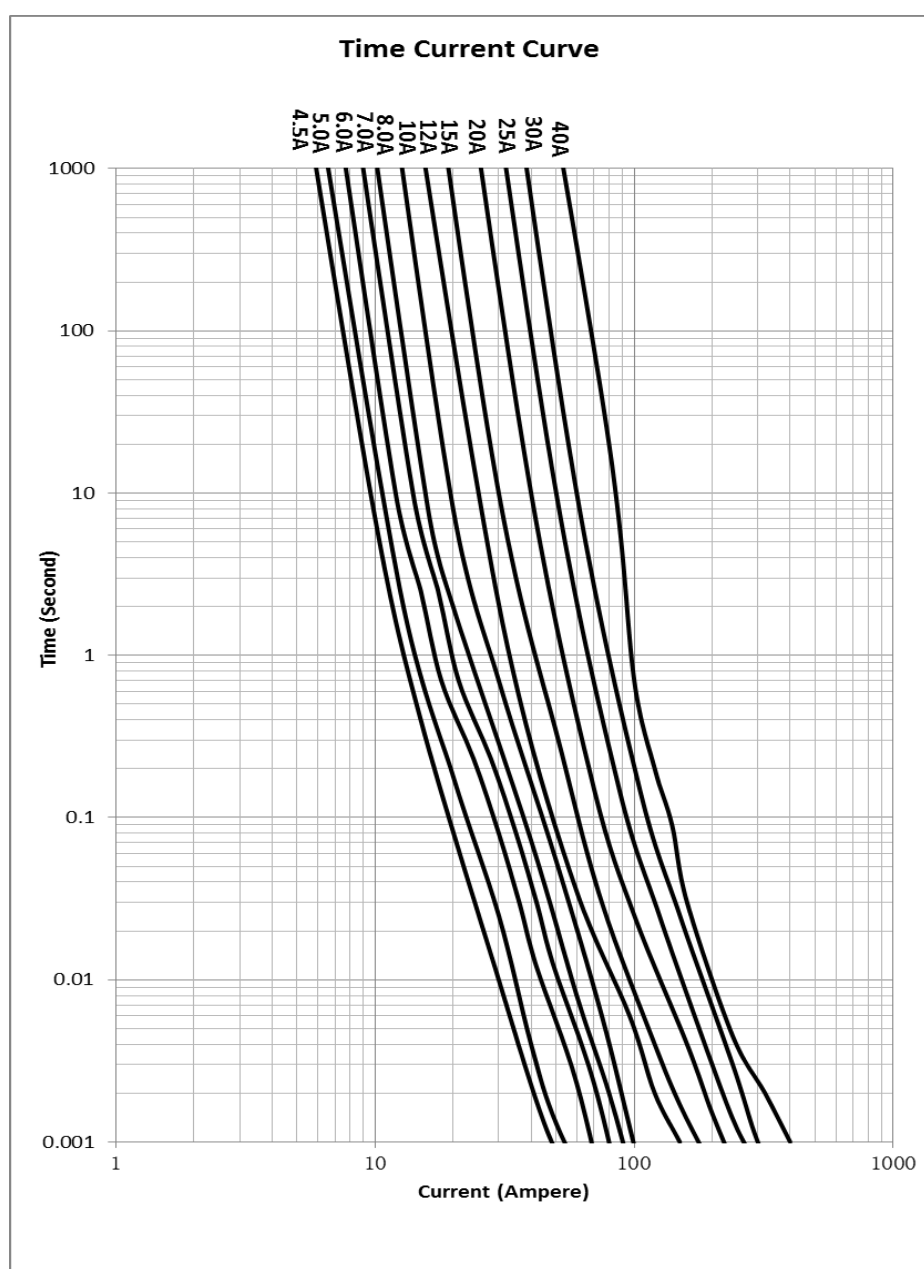
6. ELECTRICAL SPECIFICATIONS

Time vs Current Characteristics Table

(measured with constant current power supply)

Time vs Current Characteristics:UL248-14					
Rated Current	100%	250%	300%	350%	1000%
4.5A~5A	>4h	<5s	0.1s~3s	-	0.2ms~20ms
6A~40A	>4h	-	-	<5s	0.2ms~20ms

Average Time Current (I-T) Curves





Electrical characteristics

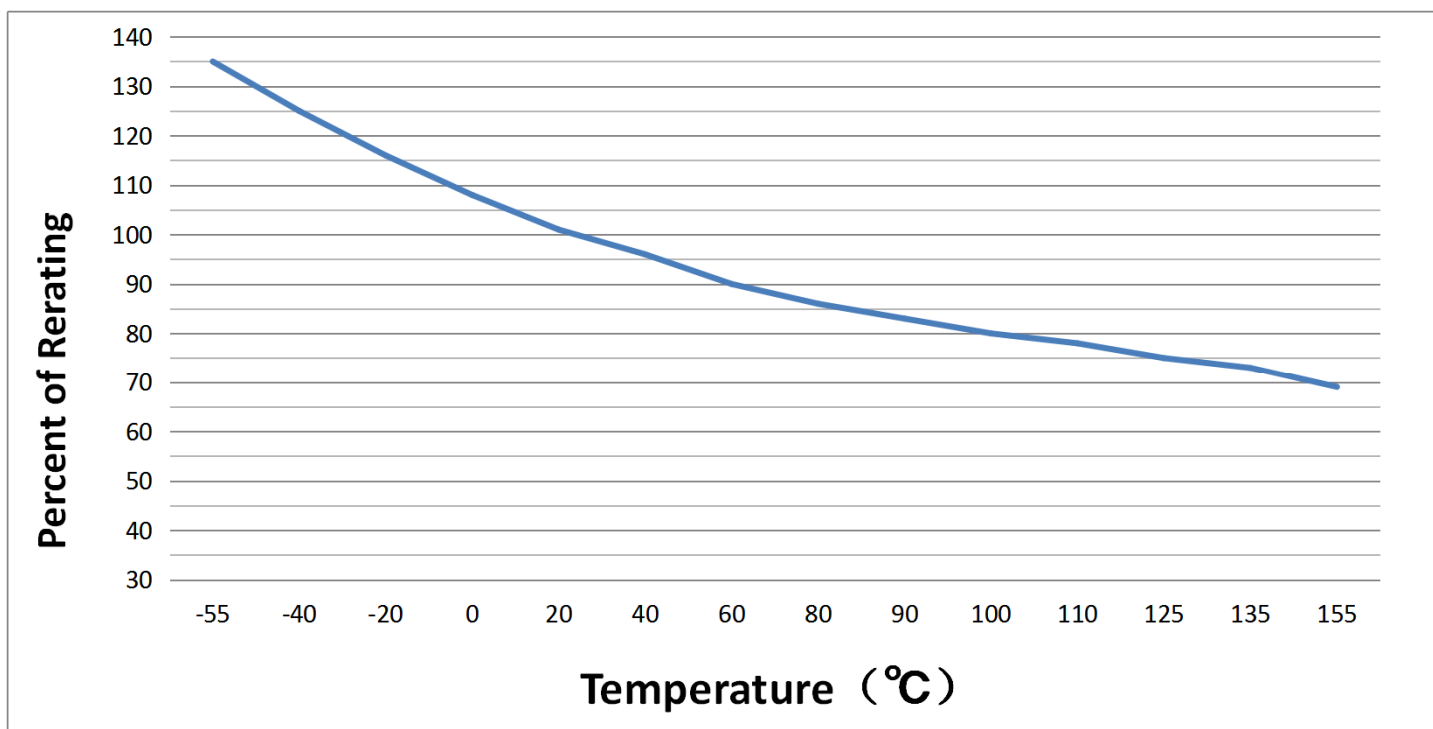
Electrical Characteristics at 25°C								
Amp Code	Rated Current	Rated Voltage	Typical Voltage Drop (mV)	Breaking Capacity	Typical Melting I ² T (A ² s)	Typical Cold Resistance (mΩ)	Alpha Mark	Approvals
								cURus
1450	4.50A	32V DC 36V DC 48V DC 63V DC 72V DC	163	50A @ 32V DC 150A @ 36V DC 200A @ 48V DC 50A @ 63V DC 50A @ 72V DC	2.68	26.5	X	•
1500	5.00A		143		4.11	21.5	T	•
1600	6.00A		139		12.8	14.25	F	•
1700	7.00A		128		14.5	10.4	7	•
1800	8.00A	32V DC 36V DC 48V DC	121	150A @ 32V DC 150A @ 36V DC 200A @ 48V DC	16.9	7.15	V	•
2100	10.00A		108		22.8	5.1	U	•
2120	12.00A		78		40.6	4.2	W	•
2150	15.00A		83		45.8	3.4	Y	•
2200	20.00A		78		51.2	2.25	Q	•
2250	25.00A	32V DC 36V DC 48V DC	91	200A @ 32V DC 200A @ 36V DC 200A @ 48V DC	59.3	1.545	L	•
2300	30.00A		91		96.2	1.31	Z	•
2400	40.00A	32V DC 36V DC	96	200A @ 32V DC 200A @ 36V DC	240	0.85	XL	•

- Note:** (1) DC interrupting rating (measured at rated voltage, time constant of less than 50 microseconds, battery source)
(2) DC cold Resistance are measured at <10% of rated current in ambient temperature of 25°C
(3) Typical Pre-arcing I²t are measured at 10In Current

Temperature Derating Curve

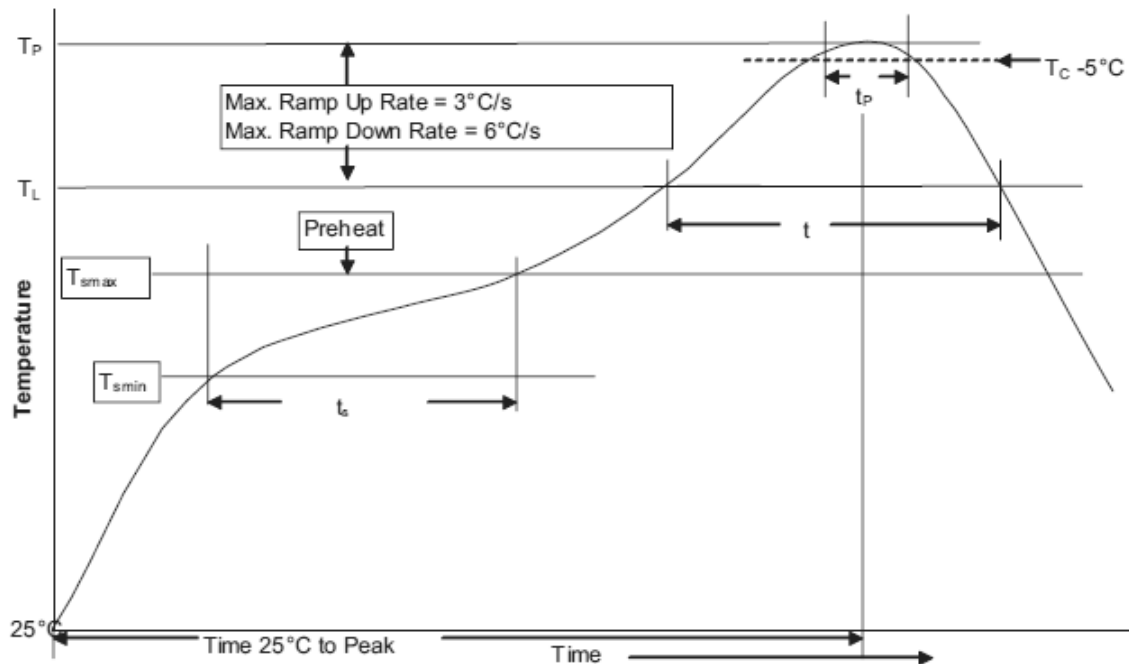
Normal ambient temperature: 23+/-3°C

Operating temperature: -55 ~ 150°C, with proper correction factor applied





7.SOLDERING PARAMETERS



1.Infrared Reflow:

Temperature:260°C

Time:30sec Max.

Recommend reflow profile

2.Wave Soldering

Reservoir

Temperature:260°C

Time in Reservoir:10sec Max.

Profile Feature		Lead (Pb)free solder
Average Ramp-UP Rate (Tsmax to Tp)		3°C/s Max.
Preheat and soak	Temperature min.(Tsmmin)	150°C
	Temperature max.(Tsmmax)	200°C
	Time (Tsmmin to Tsmmax)(ts)	60~120s
Liquidous temperature(TL)		217°C
Time at liquidous(tL)		60~150s
Peak package body temperature(Tp)		260°C
Time (tp) within 5°C of the specified classification temperature (Tc)		30s
Average ramp-down rate (Tp to Tsmmax)		6°C/s Max.
Time (25°C to Peak Temperature)		8 Minutes Max.

8.ORDERING INFORMATION

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

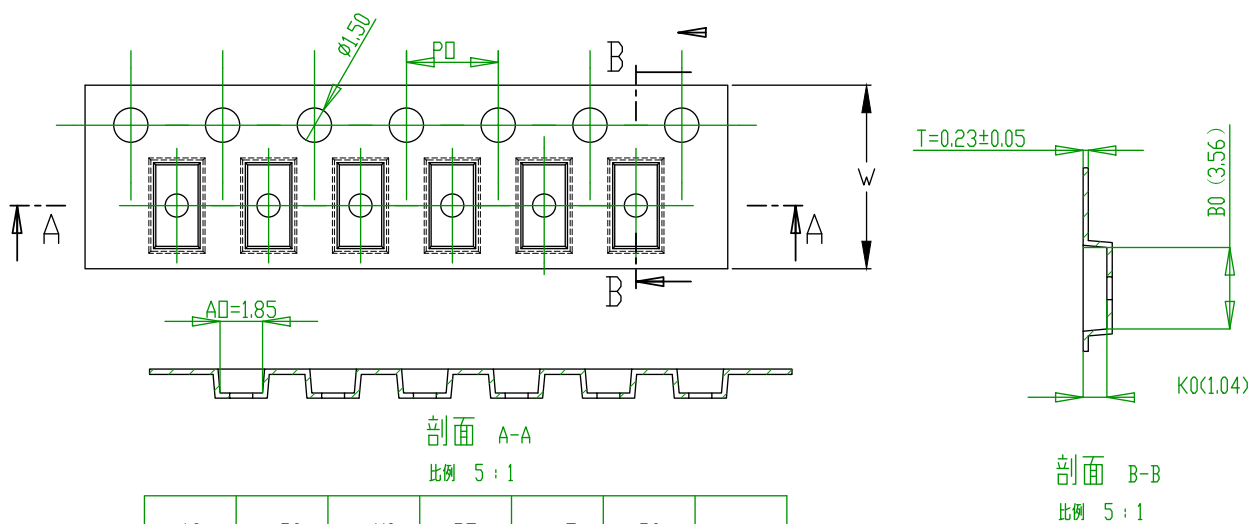
Series	Amp Code	Supplementary Code	Qty
122			



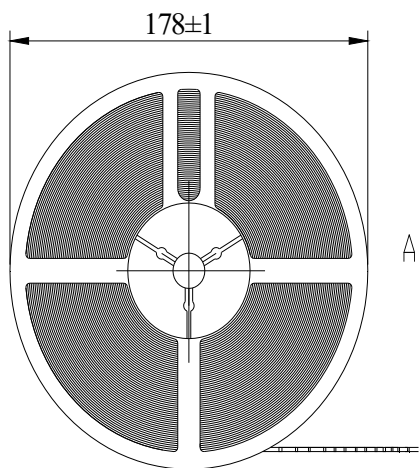
9. PACKING INFORMATION

Taping details

Packing
Unit:mm



*A0	*B0	*K0	P0	*T	D0	W
1.85±0.10	3.56±0.10	1.04±0.10	4.00±0.05	0.23±0.05	1.50+0.1-0	8.00±0.2



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