Engineering Product Specifications

(产品承认书)

Customer Name (客户): _____

Customer NO. (客户料号): _____

Model No. (产品型号): _____

Product Description (品名): **Time-Lag SMD Fuse**

Part NO. (产品编号): **245 Series**

Remark: _____

Document Release		Date(日期)
Prepared by (制表)		
Checked by (审核)		
Approved by (批准)		

Customer Approval		Date(日期)
Signed by (承认)		
Checked by (审核)		
Approved by (批准)		

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Bettel
Circuit protection components manufacturer & Brand operator

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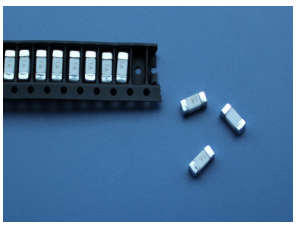
3						
4						
5						
6						
7						
8						
9						
10						
11						

TABLE OF CONTENTS

1. SCOPE AND DESCRIPTION



Following electronic product specifications apply to fuses of the 245 series. The 245 series is a time-lag type subminiature fuse for over-current protection.
As the time-lag characteristics these fuses can resist inrush current. And widely used in 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

245 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 subminiature 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 248-14

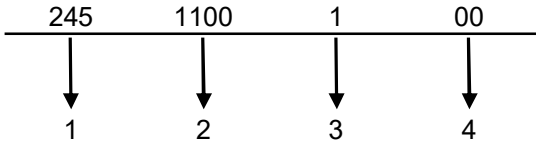
3. AGENCY APPROVALS

Agency	Agency File Number	Voltage / Ampere Rating
c UL us	E300003	DC 125V: 250mA~7A

4. PART NUMBERING SYSTEM

4.1 Part Number

Example: 2451100100



1 ……Product Series…… 245
2 ……Ampere Rating…… 1A (see table 4.3 below)
3 ……Voltage Rating…… 1: 125V
4 ……Supplementary Code…… (See table 4.2 below)

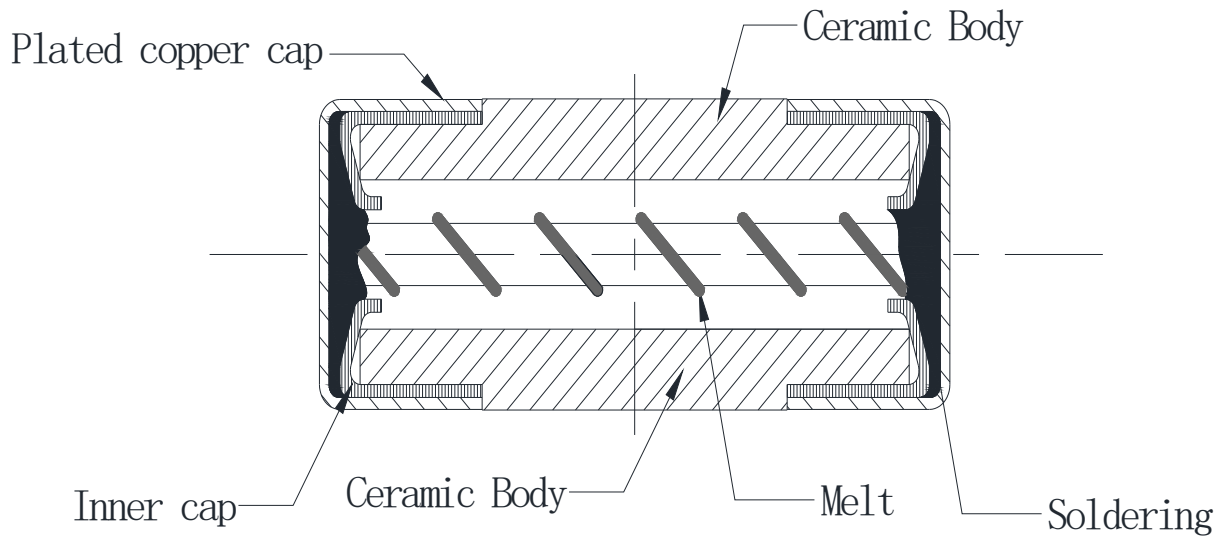
4.2 Supplementary Code Table

CODE	DESIGNATION
00	Tape-and-reel

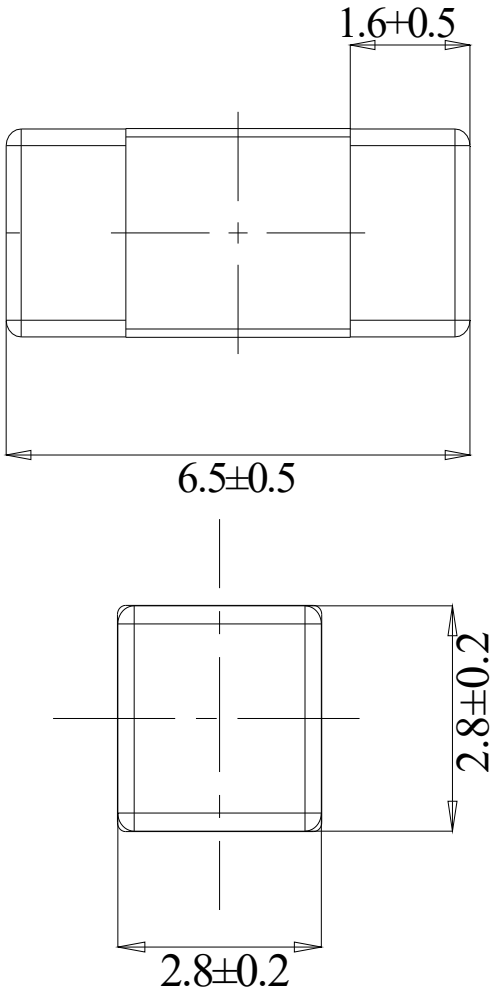
4.3. Ampere / Voltage Rating Table

AMP CODE	AMPERE RATING	VOLTAGE RATING
0250	250mA	125V DC
0315	315mA	125V DC
0400	400mA	125V DC
0500	500mA	125V DC
0630	630mA	125V DC
0800	800mA	125V DC
1100	1.00A	125V DC
1125	1.25A	125V DC
1160	1.60A	125V DC
1200	2.00A	125V DC
1250	2.50A	125V DC
1300	3.00A	125V DC
1315	3.15A	125V DC
1400	4.00A	125V DC
1500	5.00A	125V DC
1700	7.00A	125V DC

5. MECHANICAL SPECIFICATIONS



Dimensions (units: mm/inch)



Operating Temperature:

-55°C to +125°C

Storage Conditions:

+10℃ to +60℃

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

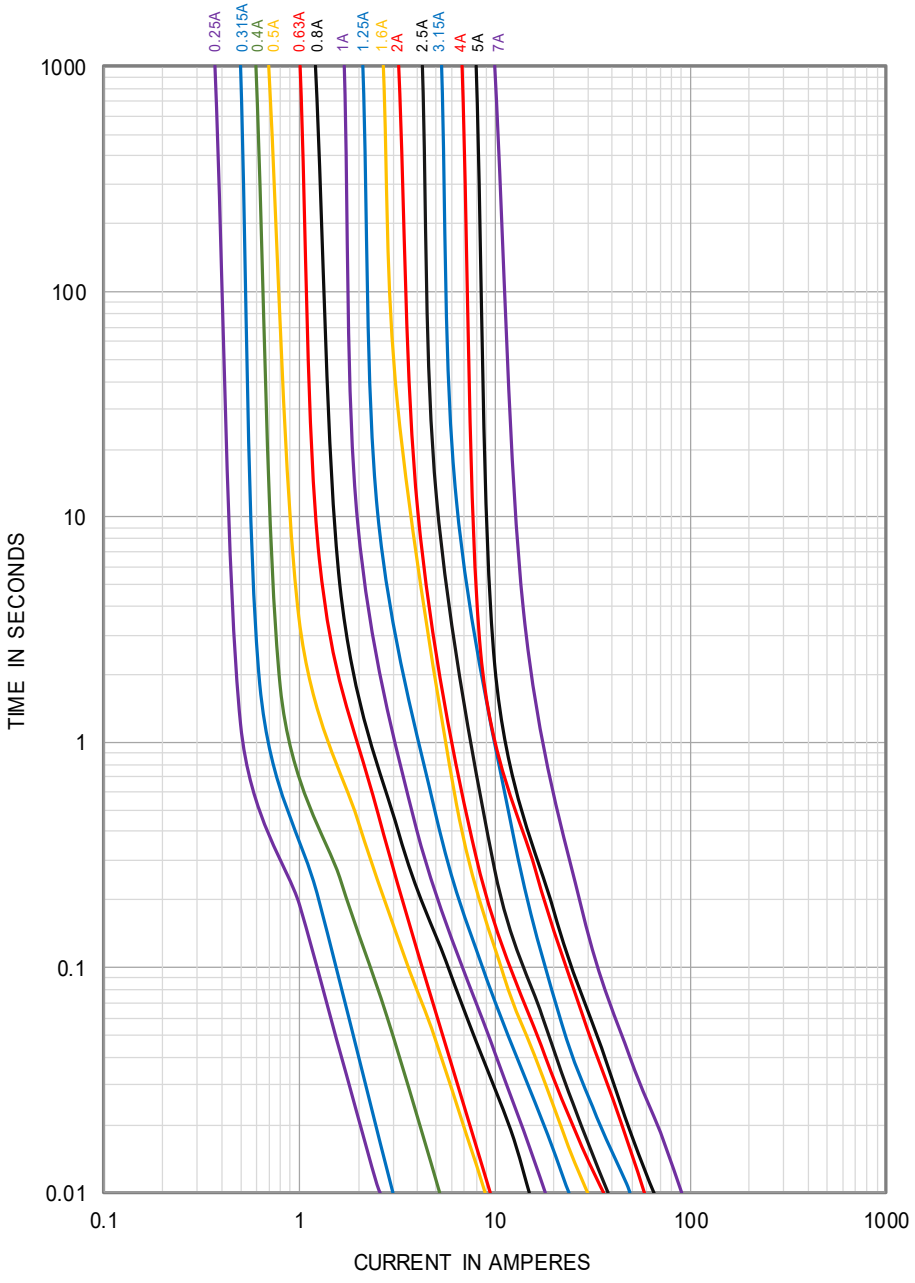
6. ELECTRICAL SPECIFICATIONS

Time vs Current Characteristics Table

(measured with constant current power supply)

Time vs Current Characteristics: UL-248-14		
Rated Current	100%	200%
250mA~7A	>4h	<120s

Average Time Current (I-T) Curves

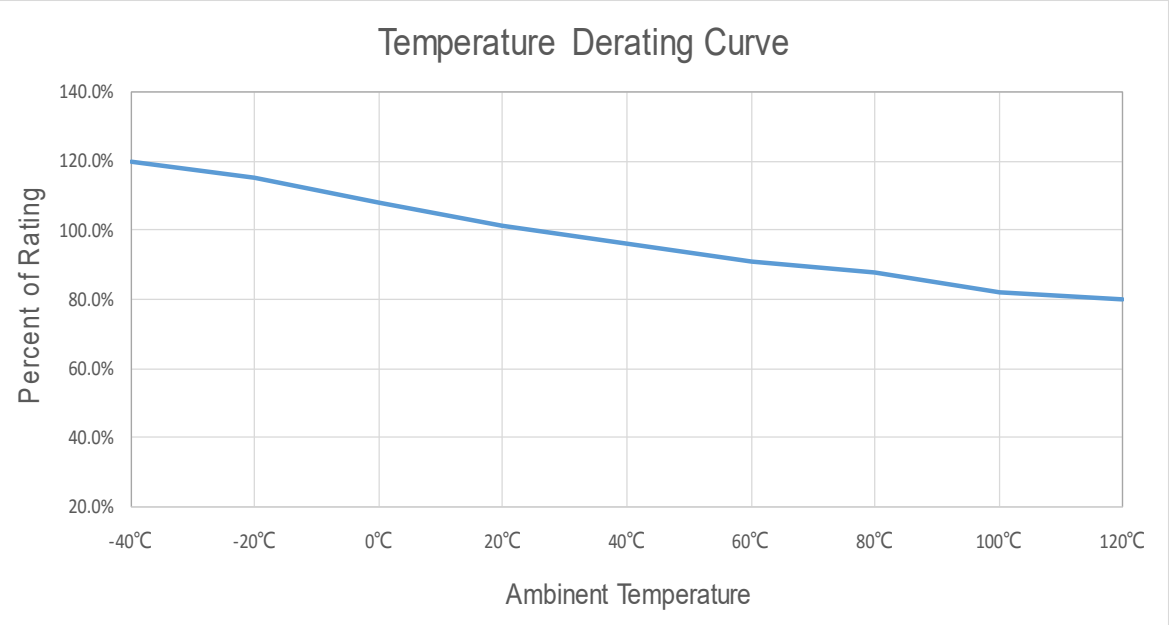


Electrical characteristics

Electrical Characteristics							
Amp Code	Rated Current	Max. Voltage	Typical Voltage Drop (mV)	Breaking Capacity	Typical Melting I²t (A²sec)	Typical Cold Resistance (ohms)	Approvals cURus
0250	250mA	125V DC	400	50A@125V DC	0.06	0.773	●
0315	315mA		400		0.12	0.663	●
0400	400mA		300		0.27	0.478	●
0500	500mA		200		0.81	0.277	●
0630	630mA		200		0.85	0.191	●
0800	800mA		200		2.25	0.154	●
1100	1.00A		200		3.24	0.096	●
1125	1.25A		180		5.76	0.054	●
1160	1.60A		180		9.00	0.045	●
1200	2.00A		180		13.00	0.041	●
1250	2.50A		180		20.25	0.038	●
1300	3.00A		130		17.64	0.024	●
1315	3.15A		100		24.01	0.022	●
1400	4.00A		100		33.64	0.017	●
1500	5.00A		100		42.25	0.011	●
1700	7.00A		100		81	0.007	●

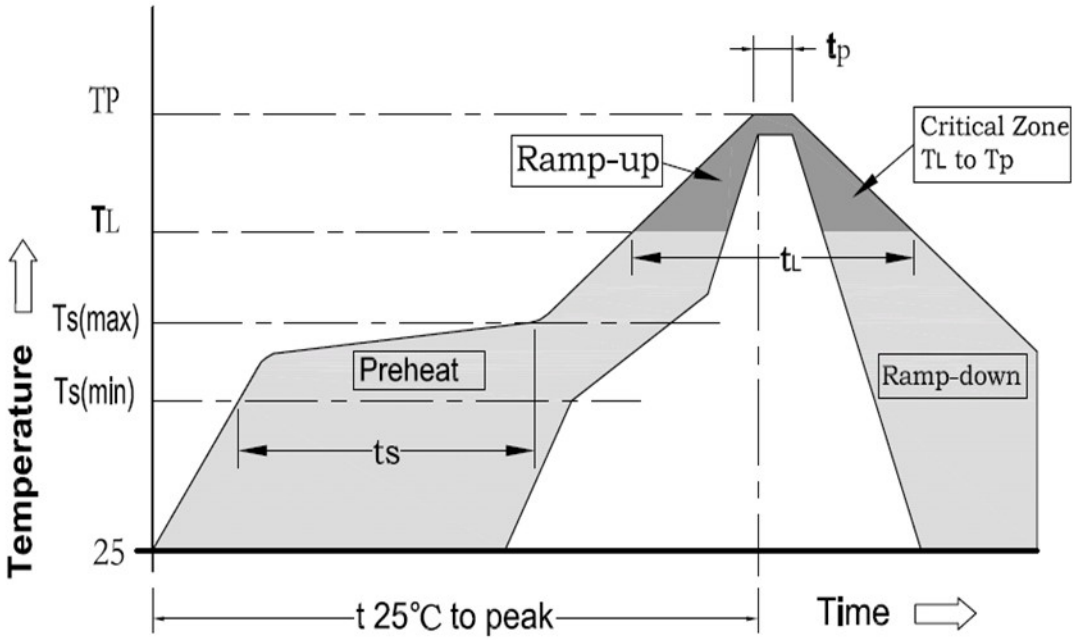
Note: (1) Permissible continuous operating current is ≤100% at ambient temperature of 23°C (73.4°F)
(2) The current values used for calculating I2T should be within the standard range of 8ms ~ 10ms.

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: 300℃
Time: 2sec 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

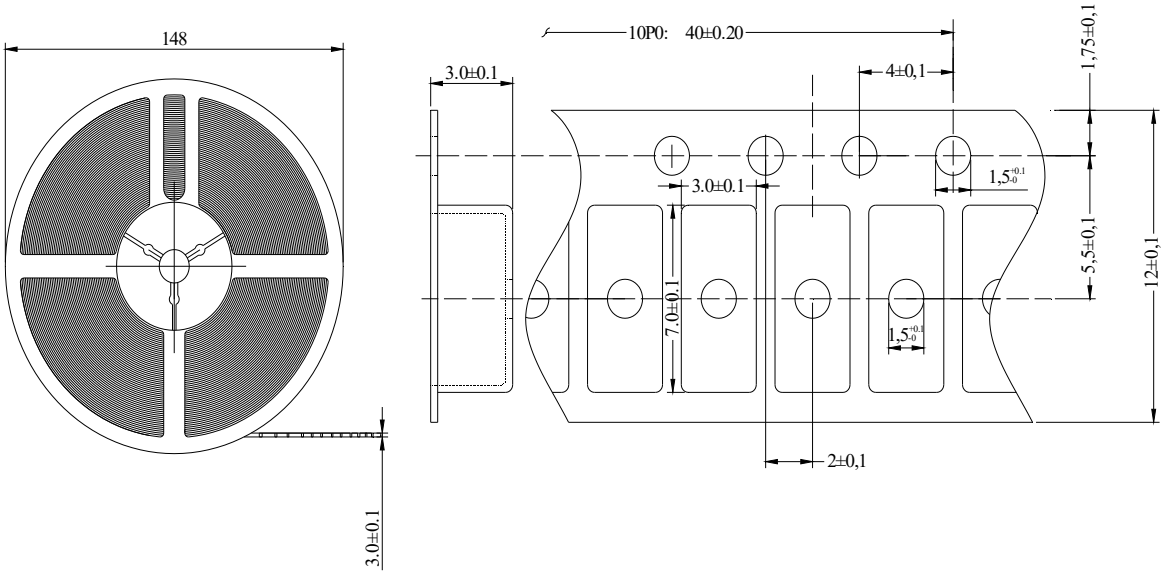
The following information are necessary in order to place your order with us correctly:

Series	Amp Code	Supplementary Code	Qty
245			

9. PACKING INFORMATION

Taping detail

Packing



Quantity per reel	1000pcs	Weight per reel	

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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

Supplemental micro fuses

Cat. No.	Size mm(in)	Amps (A)	Volts (V)	Interrupting Rating (A)
061	1.6 x 0.81 x 0.48 (0.06 x 0.03 x 0.02)	0.25 - 1	32Vdc	50
		1.25 - 5	32Vdc	35
244, 245, 246 and 247				
	6.5 x 2.8 x 2.8 (0.26 x 0.11 x 0.11)	0.25 - 7	125Vac	100
		0.25 - 7	250Vac	100
		0.25 - 7	350Vac	50
		0.25 - 7	125Vdc	50

Marking: Company name and model designation.
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