



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.	BTU2103A00-A/2-B
日期 Date	2019.09.27

客 户 Customer	
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品 名 Product	Multi-Protector
系 列 Series	BTU 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

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Document Record

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1. SCOPE



Following electronic product specifications apply to fuses of the BTU series. The BTU series provide both over temperature and over current protection. Its main applications are for electronics that not only can be damaged by high temperature but also fault current, such as smart phone adapter.

2. GENERAL INFORMATION

2.1 Description:

The BTU series provides protection of over current, over temperature, and anti-surge, which can be applied in power source like as charger, adapter and so on.

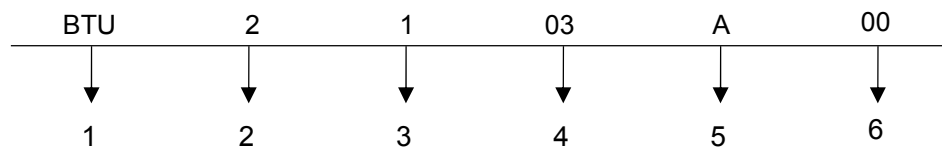
2.2 Detailed Features

- Small, axial and leaded design.
- Polymer coated unit and covered shrinkable tube outside.
- 0.65 ± 0.05 mm lead wires made of tin plated copper.
- Protection against harmful over-currents and over temperature in primary and secondary applications.
- Lead- and Halogen-free, RoHS compliant

3. PART NUMBERING SYSTEM

4.1 Part Number

Example: BTU2103A00



1	Product Series.....	BTU
2	Rated Power.....	2 W (See table 4.4)
3	Thermal Fuse Rating.....	1 A/250V, 222+0/-10°C
4	Product Resistance.....	3.3 Ω (See table 4.3)
5	Resistance Tolerance.....	+5/-5% (See table 4.2)
6	Supplementary Code.....	00 :Normal



4.2 Tolerance Code Table

CODE	TOLERANCE
A	±5%
B	+2/-3%

4.4 Rated Power Table

CODE	DESCRIPTION
H	0.5W
1	1W
2	2W

4.3 Resistor Rating Table

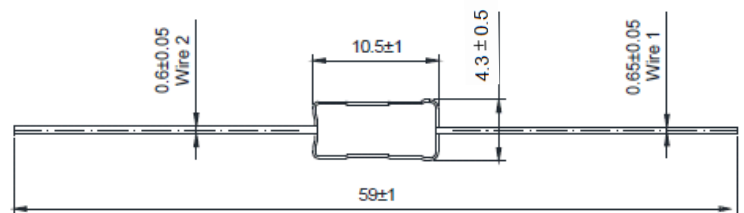
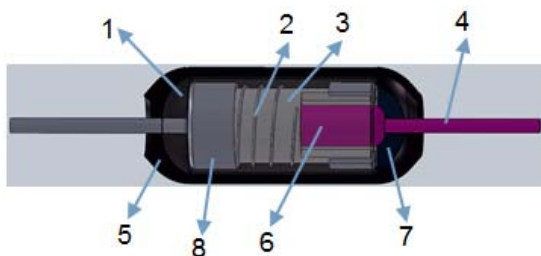
RESISTOR CODE	RESISTOR RATING
02	2.0Ω
B2	2.2Ω
D2	2.7Ω
C2	2.8 Ω
03	3.3Ω
04	4.7Ω
05	5.1Ω
06	6.0Ω
10	10.0Ω
12	12.0Ω

4. AGENCY APPROVALS

Model	Rated power	Rated resistance (Ω)	Resistance tolerance	Thermal-links		Certificate		
				Rated function temp.Tf(°C)	Rated current(A)	CQC	UL	TUV
BTU	0.5W	0.1~300	±5%	222+0, -10	1	CQC17001175022	E495212	T 5044698701
BTU	1W	0.1~300	±5%	222+0, -10	1	CQC17001175021		
BTU	2W	0.1~300	±5%	222+0, -10	1	CQC17001175020		

5. CONSTRUCTION AND MECHANICAL CHARACTERISTICS

5.1 Construction



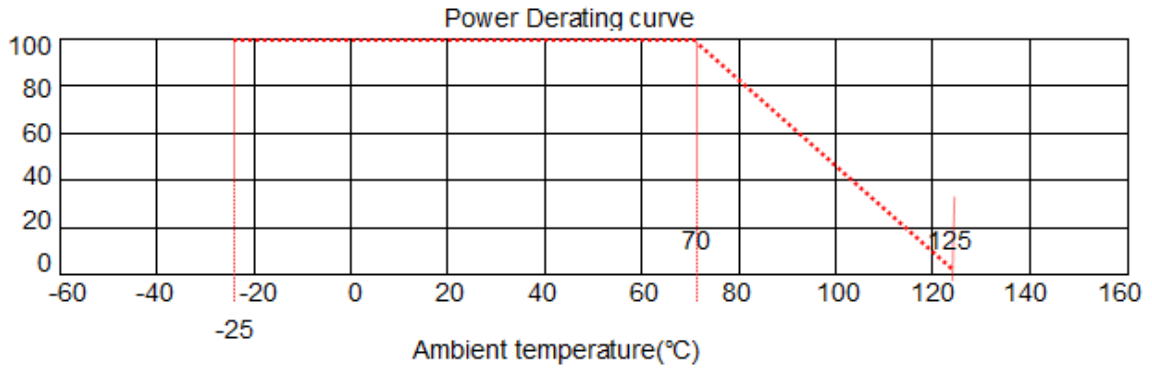
No.	1	2	3	4	5	6	7	8
Item	Coating	Body wire	Tube	Lead wire	Cover	Fuse	Sealing	Cap
Material	Resin	Resistance wire	Ceramic	Copper	Shrinkable tube	Thermal Fuse	Resin	Nickel plating



6. ELECTRICAL SPECIFICATIONS

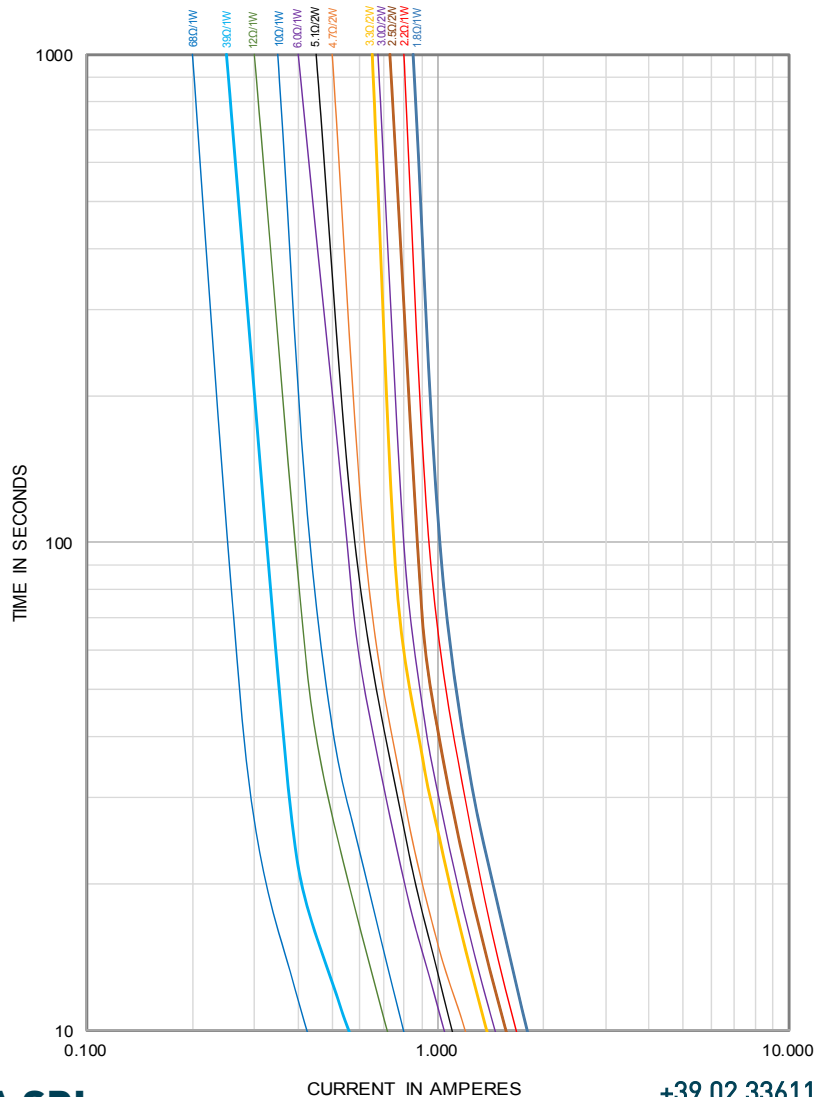
6.1 Rated power

The rated power for continuous operation or test at ambient temperature of more than 25°C shall de-rating by multiplying value of load.



7. Average Time Current

Average Current Curve(I-T Curve)



**8. Product Performance**

No.	Item	Requirement	Condition
1	Appearance	Clear label content .Package without any crack.	General check
2	Resistance	AT room temperature,check the resistance between two leads,and ensure resistance meet to the standard.	Within the regulated tolerance at room temperature 25°C.
3	TCR(Temperature Coefficient of Resistance)	$\pm 4000\text{ppm}/^\circ\text{C}$	$\text{TCR} = (R2 - R1) / (R1 \cdot (T2 - T1))$ R1:Resistance at 25°C R2:Resistance at 125°C T1:25°C T2:125°C
4	Temperature Cycle	After temperayure cycle, NO deterioration of protective coating and marking. ΔR is within $\pm(5\% + 0.05\Omega)$	1)Low temp test: $-44 \pm 3^\circ\text{C}$ 2)High temperature test: $85 \pm 2^\circ\text{C}$ Test cycle: 1.Low Temp:30min 2.Room Temp:15~20min 3.High Temp:30min 4.Room Temp:15~20min 4)Cycle Times: 5 (10) Cycle
5	Soldering Ability	During the soldering ability test, soldering area should meet 95% of IEC 60115	1)Soldering bath temperature: $260 \pm 5^\circ\text{C}$ 2)Dipping time: Less than $5 \pm 0.5\text{sec}$ 3)Dipping length: $1.5 \pm 0.5\text{mm}$ FLUX: Rosin Ethanol solution (25wt%)
6	Terminal Strength	Strength test: During the strength test, samples with no snap and loose wire	1. Wire diameter d (mm) followed $0.35 < d < 0.5$ Strength is 5N (0.51kg.f) 2. Wire diameter d (mm) followed $0.5 < d < 0.8$ Strength is 10N (1.02kg.f)
		Twist Test	Left 90° and right 90° 2 Times After these steps,no snap and loose wire
7	Function temperature confirm	$222 + 0 / - 10^\circ\text{C}$	According to IEC60691 in silicon oil bath.



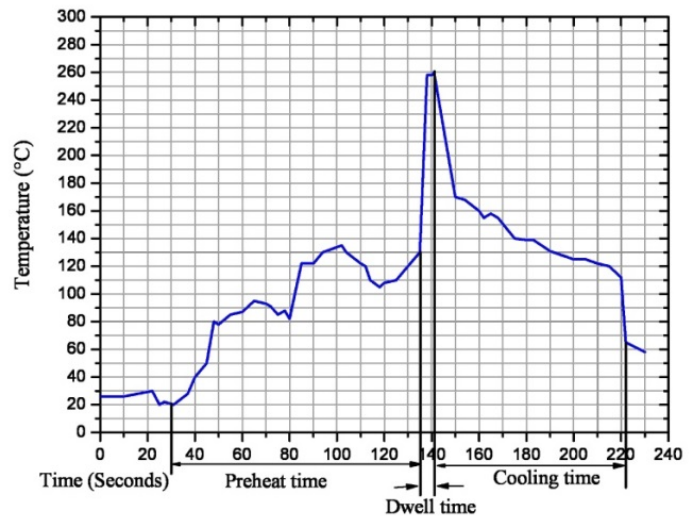
8	Insulation Resistance	Insulation resistance should be more than 0.1Mohm between lead wire and main body	DC 500V
9	Dielectric Withstanding Voltage	NO broken happened in resistor. Leakage current should be less than 2mA.	At 900V AC between lead wire and main body for 1 minute
10	Anti-Surge Test	Combined waveform 1.2/50 μ s (8/20 μ s) \pm 5 times, interval time 20s. For unit >2.0KV(R>2.0 Ω) >1.0KV(R \leq 2.0 Ω)	Test temperature: Room temperature. Refer to IEC-61000-4-5.
11	Short test	During the test, with no boom, light, explosion on unit.	Load the voltage of 240Vac between two leads of resistor.
12	Fusing Characters	Fuse time < 120s No over-heating happen in testing	Test current: different have different current

9. SOLDERING FOR PRODUCTS

260°C. \leq 5 sec (Wave Soldering)

350°C. \leq 3 sec (Hand Soldering)

260°C. \leq 6 sec (Reflow soldering)



Method of use:

(1). Vertical molding: Please bend from the glue point, the temperature fuse end is the long foot end.

(2). Horizontal molding: There is no requirement.

10. ORDERING INFORMATION

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

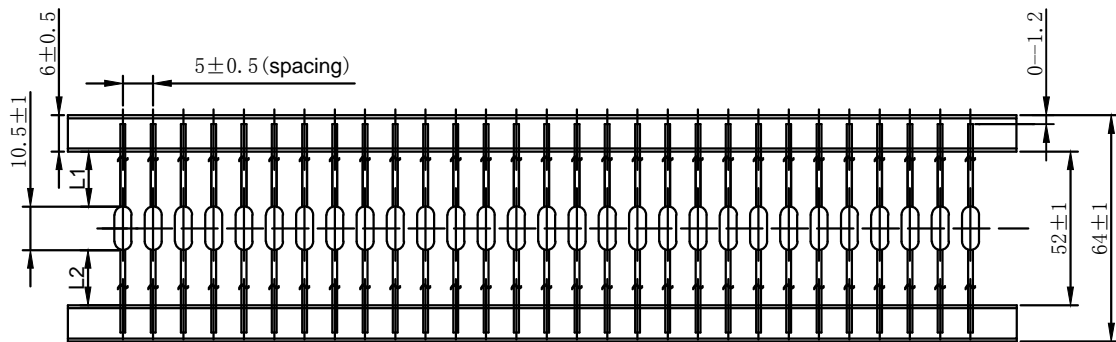
Series	Resistor Code	Supplementary Code	Qty
BTU			



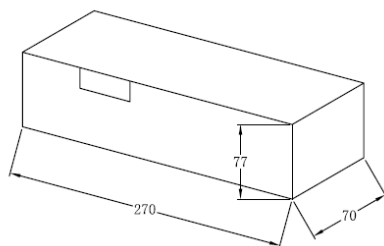
11. PACKING INFORMATION

Detail Information Dimensions(Unit in mm)

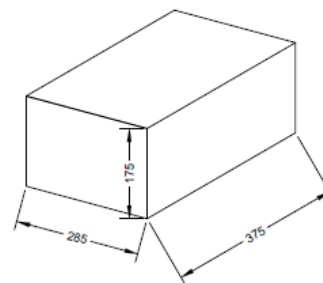
Tapping



Inner box



Out box



Qty per box

1500 pcs

Qty per carton

15000 pcs



FPEW2. E495212

Fusing Resistors and Temperature-limited Resistors - Component

If you notice a change to your FPEW2 Listing Card, click [here](#) to learn more.

[Page Bottom](#)

Fusing Resistors and Temperature-limited Resistors - Component

[See General Information for Fusing Resistors and Temperature-limited Resistors - Component](#)

DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD

E495212

Rm 601 Of 16 Blk

Xinzhu Yuan No 4 Xinzhu Rd

Songshanlake Hightech Industrial Development Zone

Dongguan, Guangdong 523808 CHINA

Fusing Resistors, Type BTU-0.5W, BTU-1W, BTU-2W

Marking: Company name and model designation.

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产品认证证书

证书编号：CQC17001175022

申请人名称及地址

东莞市贝特电子科技股份有限公司
东莞市松山湖高新技术产业开发区新竹路4号新竹苑16座办公601

制造商名称及地址

东莞市贝特电子科技股份有限公司
东莞市松山湖高新技术产业开发区新竹路4号新竹苑16座办公601

生产企业名称及地址

东莞市贝特电子科技股份有限公司(V003591)
东莞市寮步镇横坑南门村第二工业区C座、B座

产品名称和系列、规格、型号

电阻式熔断器（线绕熔断电阻器）

BTU-0.5W(0.1Ω~300Ω)，额定功率为0.5W，电阻值范围为0.1Ω~300Ω，电阻值允许偏差为±5%

产品标准和技术要求

SJ2865-1988

认证模式

产品型式试验+获证后监督

上述产品符合 CQC11-471211-2015 认证规则的要求，特发此证。

发证日期：2017年08月17日

本证书的有效性依据发证机构的定期监督获得保持。

主任：_____



中国质量认证中心

中国·北京·南四环西路188号9区100070

<http://www.cqc.com.cn>

C 0102219



PRODUCT CERTIFICATE

CERTIFICATE NO.: CQC17001175022

NAME AND ADDRESS OF THE APPLICANT

Dongguan Better Electronics Technology Co., Ltd.
Room 601 of 16 Block, Xinzhu Yuan, No 4, Xinzhu Road, Songshanlake Hightech Industrial Development
Zone, Dongguan City

NAME AND ADDRESS OF THE MANUFACTURER

Dongguan Better Electronics Technology Co., Ltd.
Room 601 of 16 Block, Xinzhu Yuan, No 4, Xinzhu Road, Songshanlake Hightech Industrial Development
Zone, Dongguan City

NAME AND ADDRESS OF THE FACTORY

Dongguan Better Electronics Technology Co., Ltd. (V003591)
NanMen Village, HengKeng Administrative Zone LiaoBu Town, Dongguan

PRODUCT NAME, MODEL AND SPECIFICATION

Resist Surge Wirewound Resistors
BTU-0.5W(0.1Ω~300Ω), 额定功率为 0.5W, 电阻值范围为 0.1Ω~300Ω, 电阻值允许偏差为±5%

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS

SJ2865-1988

TYPE OF CERTIFICATION SCHEMES

Type Testing of Product + Follow up Factory Inspection

This is to certify that the above mentioned product(s) complies with the requirements of certification
rules of CQC11-471211-2015 .

Valid from: Aug.17,2017

The validity of the certificate is subject to positive result of the regular follow up inspection by issuing
certification body.

President: _____

Wang Kejiao



CHINA QUALITY CERTIFICATION CENTRE

Section 9, No.188, Nansihuan Xilu, Beijing 100070 P.R.China
<http://www.cqc.com.cn>

C 0102219



产品认证证书

证书编号：CQC17001175021

申请人名称及地址

东莞市贝特电子科技股份有限公司
东莞市松山湖高新技术产业开发区新竹路4号新竹苑16座办公601

制造商名称及地址

东莞市贝特电子科技股份有限公司
东莞市松山湖高新技术产业开发区新竹路4号新竹苑16座办公601

生产企业名称及地址

东莞市贝特电子科技股份有限公司 (V003591)
东莞市寮步镇横坑南门村第二工业区C座、B座

产品名称和系列、规格、型号

电阻式熔断器 (线绕熔断电阻器)

BTU-1W(0.1Ω~300Ω), 额定功率为1W, 电阻值范围为0.1Ω~300Ω, 电阻值允许偏差为±5%

产品标准和技术要求

SJ2865-1988

认证模式

产品型式试验+获证后监督

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发证日期: 2017年08月17日

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<http://www.cqc.com.cn>

C 0102218



PRODUCT CERTIFICATE

CERTIFICATE NO.: CQC17001175021

NAME AND ADDRESS OF THE APPLICANT

Dongguan Better Electronics Technology Co., Ltd.
Room 601 of 16 Block, Xinzhu Yuan, No 4, Xinzhu Road, Songshanlake Hightech Industrial Development
Zone, Dongguan City

NAME AND ADDRESS OF THE MANUFACTURER

Dongguan Better Electronics Technology Co., Ltd.
Room 601 of 16 Block, Xinzhu Yuan, No 4, Xinzhu Road, Songshanlake Hightech Industrial Development
Zone, Dongguan City

NAME AND ADDRESS OF THE FACTORY

Dongguan Better Electronics Technology Co., Ltd. (V003591)
NanMen Village, HengKeng Administrative Zone LiaoBu Town, Dongguan

PRODUCT NAME, MODEL AND SPECIFICATION

Resist Surge Wirewound Resistors
BTU-1W(0.1Ω~300Ω), 额定功率为 1W, 电阻值范围为 0.1Ω~300Ω, 电阻值允许偏差为±5%

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS

SJ2865-1988

TYPE OF CERTIFICATION SCHEMES

Type Testing of Product + Follow up Factory Inspection

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The validity of the certificate is subject to positive result of the regular follow up inspection by issuing
certification body.

President: _____

Wang Kejiao



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东莞市寮步镇横坑南门村第二工业区C座、B座

产品名称和系列、规格、型号

电阻式熔断器(线绕熔断电阻器)

BTU-2W(0.1Ω~300Ω), 额定功率为2W, 电阻值范围为0.1Ω~300Ω, 电阻值允许偏差为±5%

产品标准和技术要求

SJ2865-1988

认证模式

产品型式试验+获证后监督

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发证日期: 2017年08月17日

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PRODUCT CERTIFICATE

CERTIFICATE NO.: CQC17001175020

NAME AND ADDRESS OF THE APPLICANT

Dongguan Better Electronics Technology Co., Ltd.
Room 601 of 16 Block, Xinzhu Yuan, No 4, Xinzhu Road, Songshanlake Hightech Industrial Development
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NAME AND ADDRESS OF THE MANUFACTURER

Dongguan Better Electronics Technology Co., Ltd.
Room 601 of 16 Block, Xinzhu Yuan, No 4, Xinzhu Road, Songshanlake Hightech Industrial Development
Zone, Dongguan City

NAME AND ADDRESS OF THE FACTORY

Dongguan Better Electronics Technology Co., Ltd. (V003591)
NanMen Village, HengKeng Administrative Zone LiaoBu Town, Dongguan

PRODUCT NAME, MODEL AND SPECIFICATION

Resist Surge Wirewound Resistors
BTU-2W(0.1Ω~300Ω), 额定功率为 2W, 电阻值范围为 0.1Ω~300Ω, 电阻值允许偏差为±5%

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS

SJ2865-1988

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President: _____

Wang Kejiao



CHINA QUALITY CERTIFICATION CENTRE

Section 9, No.188, Nansihuan Xilu, Beijing 100070 P.R.China
<http://www.cqc.com.cn>

C 0102217

Certificate



Certificate no.

T 50446987 01

License Holder:

Dongguan Better Electronics
Technology Co., Ltd.
Room 601 of 16 Block, Xinzhu Yuan
No 4, Xinzhu Road, Songshanlake
Hightech Ind. Development Zone
Dongguan City, Guangdong Province
P. R. China

Manufacturing Plant:

Dongguan Better Electronics
Technology Co., Ltd. ,
Second Branch Factory
No.7, Sanhe Road, Hengkeng
Administrative Zone, Liaobu Town,
Dongguan City, Guangdong Province
P. R. China

Test report no.: YFC 50228074 001

Client Reference:

Tested to: UL 1412:1999 R4.12

Certified Product: (Fusing resistors)

License Fee - Units

Type Designation	: 1) BTU-0.5W 2) BTU-1W 3) BTU-2W	9
Trademark	: Better (logo)	
Rated Resistance	: 0.1Ω-300Ω (see appendix 1)	
Rated Voltage	: AC 250V	
Rated Dissipation	: 1) 0.5W 2) 1W 3) 2W	
Maximum opening time	: See appendix 1	

Remark: More information refer to appendix 1.

9

Appendix: 1

Licensed Test mark:



TÜV Rheinland (China) Ltd.



Date of Issue

(day/mo/yr)
23/09/2019

TÜV Rheinland (China) Ltd

No. 01/03B-08, Floor 7 and No. 01/04B-08, Floor 11, AVIC Building, No.10B, Central Road, East 3rd Ring Road,
Chaoyang District, Beijing, P.R. China

HUAXUN
detection

CERTIFICATE OF CONFORMITY

No. : HX1907019787

Applicant : Dongguan Better Electronics Technology Co., Ltd.

Address : Room 601 Of 16 Block, Xinzhu Yuan, No 4, Xinzhu Road,
Songshanlake Hightech Industrial Development Zone, Dongguan City

Manufacturer : Dongguan Better Electronics Technology Co., Ltd.

Address : No.7, Sanhe Road, Hengkeng Administrative Zone, Liaobu Town,
Dongguan City, Guangdong Province, P.R.C.

Product : Fuse resistors with particular overcurrent protection

Models : BTU-2W(0.1Ω ~ 300Ω), BTU-1W(0.1Ω ~ 300Ω)

Trademark : N/A

Test Standard(s) : IEC/EN 60127-8: 2018

The EUT described above has been tested in accordance with the relevant listed standard. This certificate is awarded following tests carried out on samples of the product referred to standard as above.

The certificate applies to the tested sample above mentioned only and shall not imply an assessment of the whole production. It is only valid in connection with the test report number: HX1907019788.



Jul. 31, 2019

Shenzhen HX Detect Certification Co., Ltd.

5/F, Building B15, Zongtai Cultural and Creative Industrial Park, Yintian Creative Park, Xixiang
Town, Bao'an District, Shenzhen

HOTLINE: 0755-29116082 Email: huaxunprc@163.com Http://www.hx-lab.com