

承 认 书

APPROVAL SHEET

编 号 No.	BTU2103A00-A/1-B
日期 Date	2018.11.29

客 户 Customer	
-----------------	--

品 名 Product	Multi-Protector
系 列 Series	BTU Series

料号 Part No.	规格描述 Specification	备注 Remark
客 户 Customer		

环保特别提示 Special instructions for environmental protection

本产品:

供应商 Supplier	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至我司，谢谢！

Document Record						
No.	Date	Modified Content	Page	Edition	Prepared/modified by	Checked by
1	2018.11.09	Draft	-	A/0	Xiang Xiong	Shawn Xiang
2	2018.11.29	Update Taping	9	A/1	Xiang Xiong	Shawn Xiang

TABLE OF CONTENTS

TABLE OF CONTENTS..... 2

1. SCOPE.....3

2. GENERAL INFORMATION..... 3

3. PART NUMBERING SYSTEM..... 3

4. AGENCY APPROVALS..... 4

5. CONSTRUCTION AND MECHANICAL CHARACTERISTICS..... 4

6. ELECTRICAL SPECIFICATIONS..... 5

7. AVERAGE TIME CURRENT..... 5

8. PRODUCT PERFORMANCE.....6

9. SOLDERING FOR PRODUCTS..... 7

10. ORDERING INFORMATION..... 7

11. PACKING INFORMATION.....8

BTU / Multi-Protector

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.

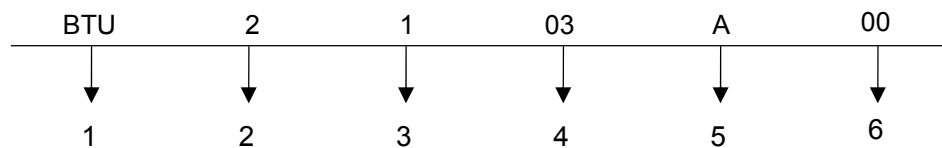
2.2 Detailed Features

- 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

BTU / Multi-Protector

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

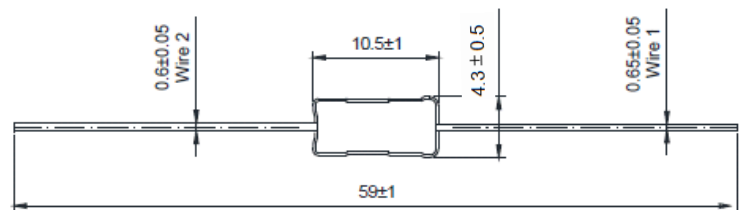
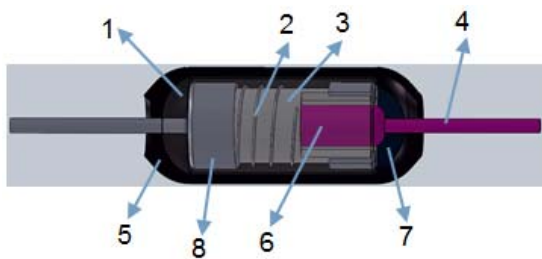
RESISTOR CODE	RESISTOR RATING
02	2.0Ω
B2	2.2Ω
D2	2.7Ω
C2	2.8 Ω
03	3.3Ω
04	4.7Ω
05	5.1Ω
06	6.0Ω
10	10.0Ω
12	12.0Ω

4. AGENCY APPROVALS

Model	Rated power	Rated resistance (Ω)	Resistance tolerance	Thermal-links		Certificate	
				Rated function temp. TF(°C)	Rated current Ir(A)	CQC	UL
BTU	0.5W	0.1-300	±5%	222+0,-10	1	CQC17001175022	E495212
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



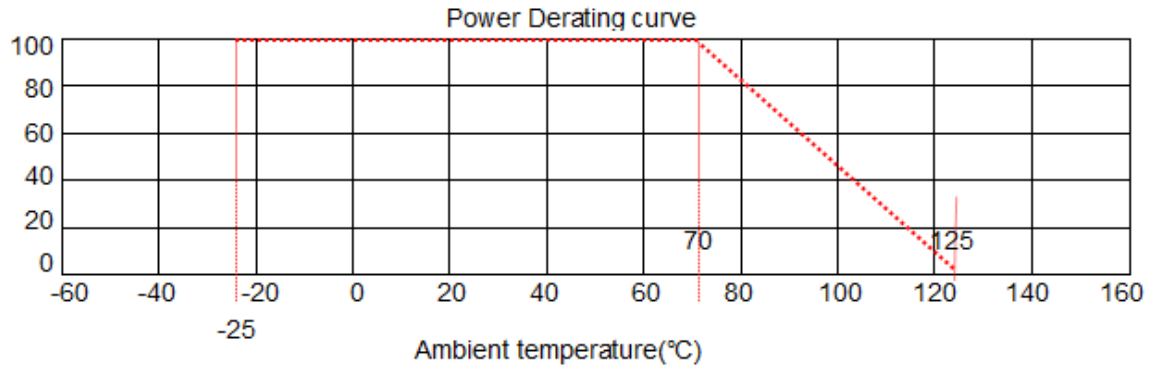
No.	1	2	3	4	5	6	7	8
Item	Coating	Body wire	Tube	Lead wire	Cover	Fuse	Sealing	Cap
Material	Resin	Resistance wire	Ceramic	Copper	Shrinkable tube	Thermal Fuse	Resin	Nickel plating

BTU / Multi-Protector

6. ELECTRICAL SPECIFICATIONS

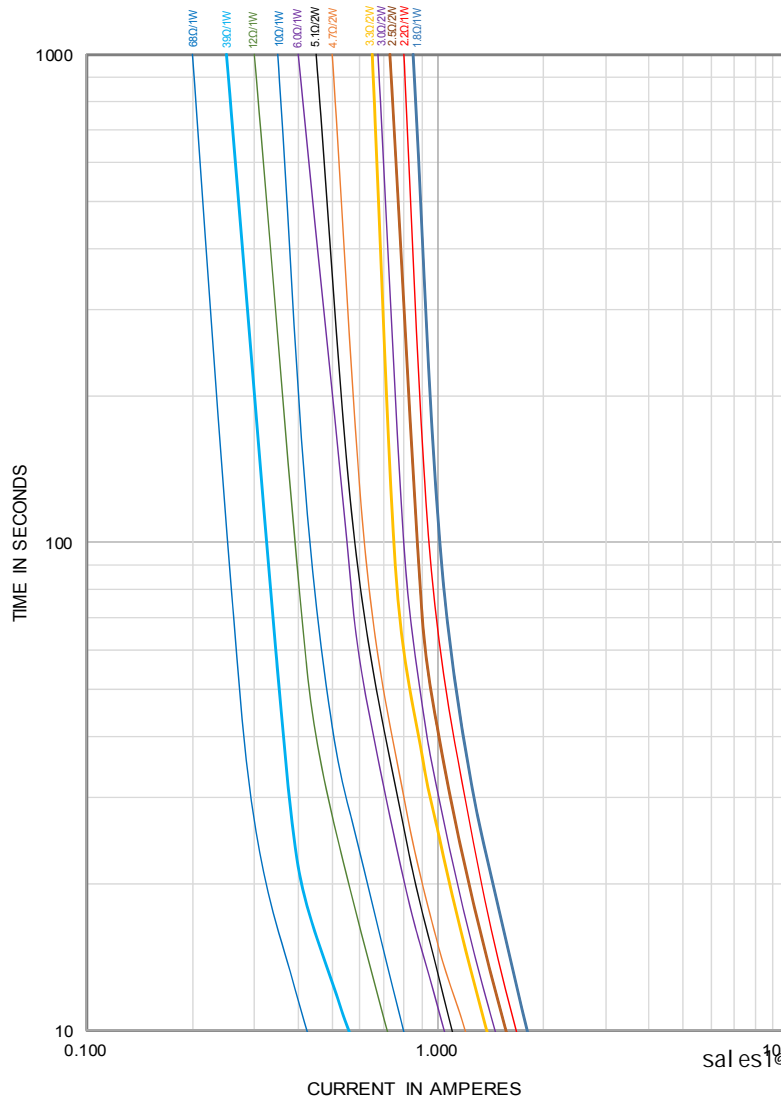
6.1 Rated power

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)



BTU / Multi-Protector

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)	$\pm 4000\text{ppm}/^{\circ}\text{C}$	TCR= (R2-R1) / (R1·(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	$222 \pm 0/-10^{\circ}\text{C}$	According to IEC60691 in silicon oil bath.

BTU / Multi-Protector

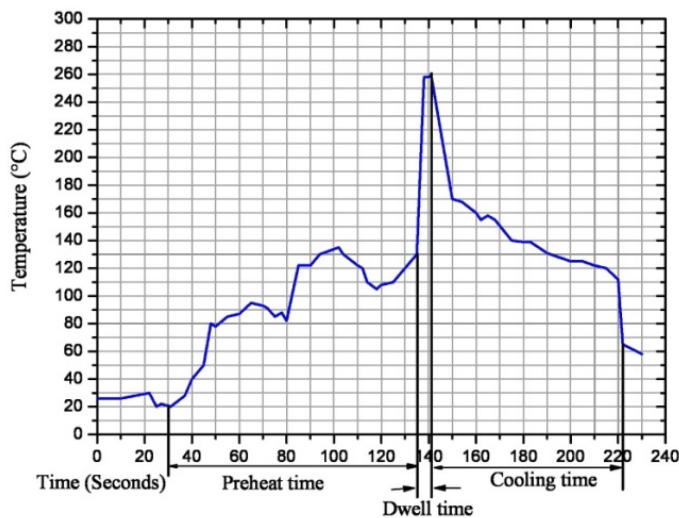
8	Insulation Resistance	Insulation resistance should be more than 0.1Mohm between lead wire and main body	DC 500V
9	Dielectric Withstanding Voltage	NO broken happened in resistor. Leakage current should be less than 2mA.	At 900V AC between lead wire and main body for 1 minute
10	Anti-Surge Test	Combined 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:

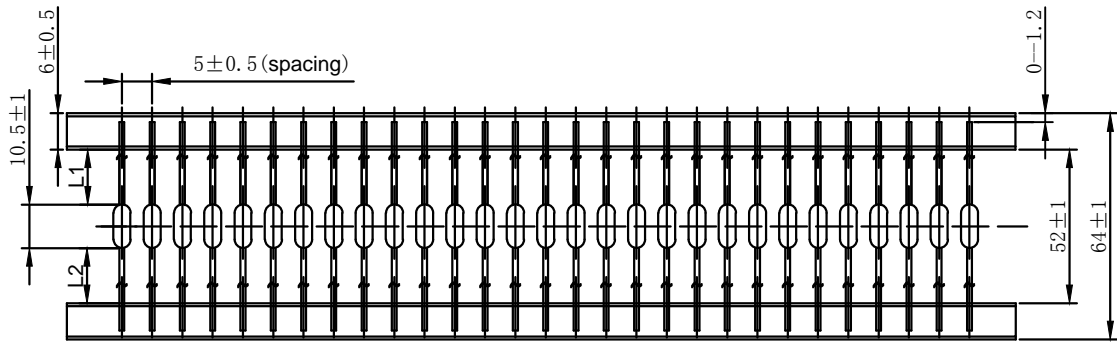
Series	Resistor Code	Supplementary Code	Qty
BTU			

BTU / Multi-Protector

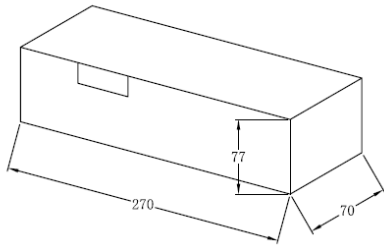
11. PACKING INFORMATION

Detail Information Dimensions(Unit in mm)

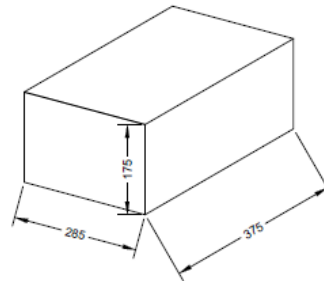
Tapping



Inner box



Out box



Qty per box	1500 pcs	Qty per carton	15000 pcs
-------------	----------	----------------	-----------