

Application Instructions of Battery Fuses “SEFUSE® D6SA Series”

The followings are application instructions of battery fuses D6SA series for the customers of such devices. The following items are recommended to maintain the operation performance of battery fuses and equipment which use it.

1. Ratings

Table 1. Fuse specifications

Product Name	Rated Current (A)	Rated Voltage (Vdc)	Breaking Capacity (A)	Fuse Resistance (mΩ)
D6SAy-12 (D6SA2-12, D6SA3-12, D6SA4-12)	12	36	50	2.0±1.0
D6SAy-15 (D6SA3-15, D6SA4-15, D6SA5-15)	15			1.5±1.0

Table 2. Heater specifications

Product Name	Applicable Series Cell Number	Applicable Voltage Range (V)	Heater Resistance (Ω)	Applicable Wattage Range (W) ^{Note 1}
D6SA2-12	1 and 2	4.0~9.0	2.15±20%	6.2~47.1
D6SA3-12	3	7.4~13.8	7.3±20%	6.3~32.6
D6SA3-15			6.9±20%	6.6~34.6
D6SA4-12	4	10.5~19.6	14.7±20%	6.3~32.7
D6SA4-15			14.0±20%	6.5~34.3
D6SA5-15	5	14.4~23.5	21.6±20%	8.0~31.9

Note 1. Reference

2. Application Instructions

2.1 Design Caution

- 2.1.1 The customer should judge the propriety of mounting location and mounting method for each application. The body temperature of the battery fuses becomes higher as current passes through, and might rise higher than the ambient atmosphere temperature. Therefore, after mounting the battery fuses under the same conditions you would use for the actual operation, please run the final product and confirm whether the battery fuses operate normally. Please confirm and test whether battery fuses does not cause problem repeatedly, under normal conditions as well as under predicted maximum abnormal conditions.
- 2.1.2 Do not use this device in aerospace equipment, aeronautical equipment, nuclear reactor control systems, life support equipment or systems, transportation machinery engine control or safety-related equipment. This device is designed for use in household electric appliance, office automation equipment, audio and video equipment, computer communications equipment, test and measurement equipment, personal electronic equipment and transportation equipment (excluding engine control).
- 2.1.3 Do not contact the battery fuses and resin-mold. The resin might infiltrate into the product, and it doesn't meet the specification when the resin-mold is done to this product. These products after resin-mold will not be guaranteed.
- 2.1.4 Do not use the battery fuses in the liquid as water or organic solvents, in the atmosphere as sulfurous acid gas, nitrogen oxide gas, or high humidity. And, ultrasonic-cleaning or immersion-cleaning and so on must not be done to the battery fuses before and after mounted. When cleaning is done, flux on element would flow, and it would not be satisfied its specifications. Moreover, a similar influence happens when the product comes in contact with cleaning-solution. These products after cleaning will not be guaranteed.
- 2.1.5 Make sure that the terminals of this product are connected property on the land of circuit board, and the value falls in the rated heater resistance between Terminal「1」-「4」 and 「3」-「4」. Terminal「2」 is the dummy electrode having no electrical functions, but it is recommended to be connected to the circuit board.
- 2.1.6 Please do not re-use of the battery fuses removed by solder correction.
- 2.1.7 If it is expected that the general consumers who are not aware of the usage cautions for the battery fuses handle it, please warn not to mount, remove or replace the battery fuses through the user's manual and other related material.

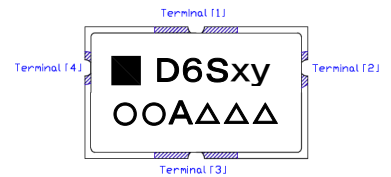


Fig.1 Terminal position

2.2 Disposal Considerations

- 2.2.1 The battery fuses corresponds to industrial waste, so dispose it according to the government, provincial regulations, or entrust the licensed disposal contractor.

3. Examination for damage

Since battery fuses may be damaged by the mechanical force or the thermal force in the installation process of battery fuse to equipment. The following checks are also recommended often installing.

- (1) Appearance check for outside of battery fuses.
- (2) Conductivity check.
- (3) X-ray check for inside of battery fuses.
- (4) Operation check by sampling.

4. For reasons of safety

The battery fuses is a non-repairable item and, in case of replacement, an equivalent battery fuses from the same manufacturer and having the same catalogue reference should be used, mounted in exactly the same way. If applicable, it is recommended to warn general consumers, who are not aware of the usage cautions for the battery fuses, remove or replace the battery fuses through a note to this effect in the user's manual and other related material.

三端保险丝“SEFUSE® D6SA (12A,15A)系列”的使用说明

以下是针对此类设备的客户的D6SA(12A,15A)系列三端保险丝的应用说明。为了保持三端保险丝和使用它的设备的工作性能，建议采取以下措施。

1. 额定值

表1 保险丝规格

产品型号	额定电流 (A)	额定电压 (Vdc)	最大过电流 (A)	保险丝内阻 (mΩ)
D6SAy-12 (D6SA2-12, D6SA3-12, D6SA4-12)	12	36	50	2.0±1.0
D6SAy-15 (D6SA3-15, D6SA4-15, D6SA5-15)	15			1.5±1.0

表2 加热器规格

产品型号	适用电芯数	动作电压范围 (V)	加热器电阻 (Ω)	适用功率范围 (W) 注1
D6SA2-12	1 和 2	4.0~9.0	2.15±20%	6.2~47.1
D6SA3-12			7.3±20%	6.3~32.6
D6SA3-15	3	7.4~13.8	6.9±20%	6.6~34.6
D6SA4-12			14.7±20%	6.3~32.7
D6SA4-15	4	10.5~19.6	14.0±20%	6.5~34.3
D6SA5-15			21.6±20%	8.0~31.9

注1 参考

2. 应用说明

2.1 设计注意事项

- 2.1.1 客户应判断每种应用的安装位置和安装方法是否合适。当电流通过时，三端保险丝的本体温度会升高，并且可能会高于环境温度。因此，在以与实际操作相同的条件安装三端保险丝后，请运行最终产品并确认三端保险丝是否正常工作。请确认并测试三端保险丝在正常情况下以及在预计的最大异常情况下是否不会引起问题。
- 2.1.2 请勿在航空航天设备，航空设备，核反应堆控制系统，生命支持设备或系统，运输机械发动机控制或安全相关设备中使用此设备。该设备设计用于家用电器，办公自动化设备，音频和视频设备，计算机通信设备，测试和测量设备，个人电子设备和运输设备（不包括引擎控制）。
- 2.1.3 不要把树脂中使用三端保险丝，树脂可能会渗入保险丝内部从而导致产品不符合规格。此类产品将不会在产品质量保证范围之内。
- 2.1.4 不要在液体（水或有机溶剂）或异常大气（二氧化硫、氧化氮或高湿度）中使用三端保险丝。三端保险丝安装前后不得进行超声波清洗或浸洗。这种类型的清洗可能导致可熔合金上的助溶剂流动从而导致产品无法达到规格要求。此外，产品与清洗剂接触后也会产生相同影响。此类产品将不会在产品质量保证范围之内。
- 2.1.5 确保本产品的端子在电路板上为连接属性，使其值处于端子「1」-「4」和「3」-「4」之间的额定加热器电阻内。端子「2」是没有电气功能的假电极，但建议连接到电路板上。
- 2.1.6 请不要重复使用通过焊料校正拆下的三端保险丝。
- 2.1.7 如果预计一般消费者不了解三端保险丝的使用注意事项，请通过用户手册和其他相关资料提醒不要安装，拆卸或更换三端保险丝。

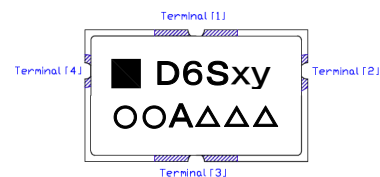


Fig.1 Terminal position

2.2 处置注意事项

- 2.2.1 三端保险丝与工业废料相对应，因此请按照政府，省级法规进行处理，或委托给有资质的第三方处置。

3. 使用时的检测

因为在三端保险丝安装到设备上的过程中，可能会受到机械力或热力的损坏，建议经常实施以下检测。

- (1) 三端保险丝外部外观检测
- (2) 导电性检测
- (3) 三端保险丝内部的X光检测
- (4) 动作试验（抽样）

4. 出于安全考虑

三端保险丝是不可修复的部件，如果要更换，应使用来自同一制造商且具有相同目录参考的等效三端保险丝，并以完全相同的方式安装。如果适用，建议提醒不了解三端保险丝使用注意事项的一般消费者，参考用户使用手册和其他相关材料中的注释来移除或更换三端保险丝。

Application Instructions of Battery Fuses “SEFUSE® D6SA Series (30A)”

The followings are application instructions of battery fuses D6SA series (30A) for the customers of such devices. The following items are recommended to maintain the operation performance of battery fuses and equipment which use it.

1. Ratings

Table 1. Fuse specifications

Product Name	Rated Current (A)	Rated Voltage (Vdc)	Breaking Capacity (A)	Fuse Resistance (mΩ)
D6SAy-30 (D6SA02-30, D6SA03-30, D6SA04-30, D6SA05-30, D6SA06-30, D6SA07-30, D6SA09-30, D6SA10-30, D6SA14-30)	30	62	80	0.6±0.5

Table 2. Heater specifications

Product Name	Applicable Series Cell Number	Applicable Voltage Range (V)	Heater Resistance (Ω)	Applicable Wattage Range (W) ^{Note 1}
D6SA02-30	2	7.8~9.4	3.20±20%	15.8~34.6
D6SA03-30	3	9.9~13.5	6.05±20%	13.5~37.6
D6SA04-30	4	13.4~18.4	11.05±20%	13.5~38.3
D6SA05-30	5	17.1~23.5	18.0±20%	13.5~38.4
D6SA06-30	6	20.0~27.5	24.7±20%	13.5~38.3
D6SA07-30	7	23.0~31.5	32.6±20%	13.5~38.1
D6SA09-30	9~10	28.0~45.0	60.0±15%	11.3~39.8
D6SA10-30	9~10	34.2~46.9	75.0±15%	13.5~34.5
D6SA14-30	13~14	49.0~62.0	154.0±15%	13.5~30.4

Note 1. Reference

2. Application Instructions

2.1 Design Caution

- 2.1.1 The customer should judge the propriety of mounting location and mounting method for each application. The body temperature of the battery fuses becomes higher as current passes through, and might rise higher than the ambient atmosphere temperature. Therefore, after mounting the battery fuses under the same conditions you would use for the actual operation, please run the final product and confirm whether the battery fuses operate normally. Please confirm and test whether battery fuses does not cause problem repeatedly, under normal conditions as well as under predicted maximum abnormal conditions.
- 2.1.2 Do not use this device in aerospace equipment, aeronautical equipment, nuclear reactor control systems, life support equipment or systems, transportation machinery engine control or safety-related equipment. This device is designed for use in household electric appliance, office automation equipment, audio and video equipment, computer communications equipment, test and measurement equipment, personal electronic equipment and transportation equipment (excluding engine control).
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- 2.1.4 Do not use the battery fuses in the liquid as water or organic solvents, in the atmosphere as sulfurous acid gas, nitrogen oxide gas, or high humidity. And, ultrasonic-cleaning or immersion-cleaning and so on must not be done to the battery fuses before and after mounted. When cleaning is done, flux on element would flow, and it would not be satisfied its specifications. Moreover, a similar influence happens when the product comes in contact with cleaning-solution. These products after cleaning will not be guaranteed.
- 2.1.5 Make sure that the terminals of this product are connected property on the land of circuit board, and the value falls in the rated heater resistance between Terminal 「1」 - 「4」 and 「3」 - 「4」. Terminal 「2」 is the dummy electrode having no electrical functions, but it is recommended to be connected to the circuit board.
- 2.1.6 Please do not re-use of the battery fuses removed by solder correction.
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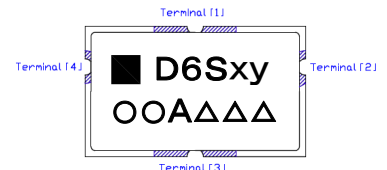


Fig.1 Terminal position

2.2 Disposal Considerations

- 2.2.1 The battery fuses corresponds to industrial waste, so dispose it according to the government, provincial regulations, or entrust the licensed disposal contractor.

3. Examination for damage

Since battery fuses may be damaged by the mechanical force or the thermal force in the installation process of battery fuse to equipment. The following checks are also recommended often installing.

- (1) Appearance check for outside of battery fuses.
- (2) Conductivity check.
- (3) X-ray check for inside of battery fuses.
- (4) Operation check by sampling.

4. For reasons of safety

The battery fuses is a non-repairable item and, in case of replacement, an equivalent battery fuses from the same manufacturer and having the same catalogue reference should be used, mounted in exactly the same way. If applicable, it is recommended to warn general consumers, who are not aware of the usage cautions for the battery fuses, remove or replace the battery fuses through a note to this effect in the user's manual and other related material.

三端保险丝“SEFUSE® D6SA (30A)系列”的使用说明

以下是针对此类设备的客户的D6SA(30A)系列三端保险丝的应用说明。为了保持三端保险丝和使用它的设备的工作性能，建议采取以下措施。

1. 额定值

表1 保险丝规格

产品型号	额定电流 (A)	额定电压 (Vdc)	最大过电流 (A)	保险丝内阻 (mΩ)
D6SAy-30 (D6SA02-30, D6SA03-30, D6SA04-30, D6SA05-30, D6SA06-30, D6SA07-30, D6SA09-30, D6SA10-30, D6SA14-30)	30	62	80	0.6±0.5

表2 加热器规格

产品型号	适用电芯数	动作电压范围 (V)	加热器电阻 (Ω)	适用功率范围 (W) 注1
D6SA02-30	2	7.8~9.4	3.20±20%	15.8~34.6
D6SA03-30	3	9.9~13.5	6.05±20%	13.5~37.6
D6SA04-30	4	13.4~18.4	11.05±20%	13.5~38.3
D6SA05-30	5	17.1~23.5	18.0±20%	13.5~38.4
D6SA06-30	6	20.0~27.5	24.7±20%	13.5~38.3
D6SA07-30	7	23.0~31.5	32.6±20%	13.5~38.1
D6SA09-30	9~10	28.0~45.0	60.0±15%	11.3~39.8
D6SA10-30	9~10	34.2~46.9	75.0±15%	13.5~34.5
D6SA14-30	13~14	49.0~62.0	154.0±15%	13.5~30.4

注1 参考

2. 应用说明

2.1 设计注意事项

- 2.1.1 客户应判断每种应用的安装位置和安装方法是否合适。当电流通过时，三端保险丝的本体温度会升高，并且可能会高于环境温度。因此，在以与实际操作相同的条件安装三端保险丝后，请运行最终产品并确认三端保险丝是否正常工作。请确认并测试三端保险丝在正常情况下以及在预计的最大异常情况下是否不会引起问题。
- 2.1.2 请勿在航空航天设备，航空设备，核反应堆控制系统，生命支持设备或系统，运输机械发动机控制或安全相关设备中使用此设备。该设备设计用于家用电器，办公自动化设备，音频和视频设备，计算机通信设备，测试和测量设备，个人电子设备和运输设备（不包括引擎控制）。
- 2.1.3 不要把树脂中使用三端保险丝，树脂可能会渗入保险丝内部从而导致产品不符合规格。此类产品将不会在产品质量保证范围之内。
- 2.1.4 不要在液体（水或有机溶剂）或异常大气（二氧化硫、氧化氮或高湿度）中使用三端保险丝。三端保险丝安装前后不得进行超声波清洗或浸洗。这种类型的清洗可能导致可熔合金上的助溶剂流动从而导致产品无法达到规格要求。此外，产品与清洗剂接触后也会产生相同影响。此类产品将不会在产品质量保证范围之内。
- 2.1.5 确保本产品的端子在电路板上为连接属性，使其值处于端子「1」-「4」和「3」-「4」之间的额定加热器电阻内。端子「2」是没有电气功能的假电极，但建议连接到电路板上。
- 2.1.6 请不要重复使用通过焊料校正拆下的三端保险丝。
- 2.1.7 如果预计一般消费者不了解三端保险丝的使用注意事项，请通过用户手册和其他相关资料提醒不要安装，拆卸或更换三端保险丝。



Fig.1 Terminal position

2.2 处置注意事项

- 2.2.1 三端保险丝与工业废料相对应，因此请按照政府，省级法规进行处理，或委托给有资质的第三方处置。

3. 使用时的检测

因为在三端保险丝安装到设备上的过程中，可能会受到机械力或热力的损坏，建议经常实施以下检测。

- | | |
|------------------|--------------|
| (1) 三端保险丝外部外观检测 | (2) 导电性检测 |
| (3) 三端保险丝内部的X光检测 | (4) 动作试验（抽样） |

4. 出于安全考虑

三端保险丝是不可修复的部件，如果要更换，应使用来自同一制造商且具有相同目录参考的等效三端保险丝，并以完全相同的方式安装。如果适用，建议提醒不了解三端保险丝使用注意事项的一般消费者，参考用户使用手册和其他相关材料中的注释来移除或更换三端保险丝。

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The followings are application instructions of battery fuses D6SC series for the customers of such devices. The following items are recommended to maintain the operation performance of battery fuses and equipment which use it.

1. Ratings

Table 1. Fuse specifications

Product Name	Rated Current (A)	Rated Voltage (Vdc)	Breaking Capacity (A)	Fuse Resistance (mΩ)
D6SC1-12, D6SC2-12, D6SC3-12, D6SC4-12	12	36	50	2.0±1.0
D6SC1-15, D6SC2-15, D6SC3-15 D6SC4-15, D6SC5-15, D6SC6-15	15			1.5±1.0

Table 2. Heater specifications

Product Name	Applicable Series Cell Number	Applicable Voltage Range (V)	Heater Resistance (Ω)	Applicable Wattage Range (W) ^{Note 1}
D6SC1-12	1	3.0~5.0	1.35±25%	5.3~24.7
D6SC1-15			1.25±20%	6.0~25.0
D6SC2-12	2	4.0~9.0	2.50±20%	5.3~40.5
D6SC2-15			3.20±20%	6.5~31.7
D6SC3-12	3	7.4~13.8	8.30±20%	5.5~28.7
D6SC3-15			6.95±20%	6.5~34.3
D6SC4-12	4	10.5~19.6	16.70±20%	5.5~28.8
D6SC4-15			13.10±20%	7.0~36.7
D6SC5-15	5	14.4~23.5	23.5±20%	7.3~29.4
D6SC6-15	6	16.8~28.0	36.2±20%	6.5~27.1

Note 1. Reference

2. Application Instructions

2.1 Design Caution

- 2.1.1 The customer should judge the propriety of mounting location and mounting method for each application. The body temperature of the battery fuses becomes higher as current passes through, and might rise higher than the ambient atmosphere temperature. Therefore, after mounting the battery fuses under the same conditions you would use for the actual operation, please run the final product and confirm whether the battery fuses operate normally. Please confirm and test whether battery fuses does not cause problem repeatedly, under normal conditions as well as under predicted maximum abnormal conditions.
- 2.1.2 Do not use this device in aerospace equipment, aeronautical equipment, nuclear reactor control systems, life support equipment or systems, transportation machinery engine control or safety-related equipment. This device is designed for use in household electric appliance, office automation equipment, audio and video equipment, computer communications equipment, test and measurement equipment, personal electronic equipment and transportation equipment (excluding engine control).
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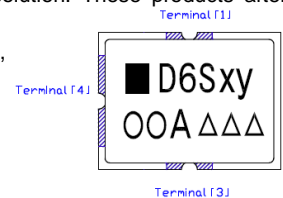


Fig.1 Terminal position

2.2 Disposal Considerations

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3. Examination for damage

Since battery fuses may be damaged by the mechanical force or the thermal force in the installation process of battery fuses to equipment. The following checks are also recommended often installing.

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4. For reasons of safety

The battery fuses is a non-repairable item and, in case of replacement, an equivalent battery fuses from the same manufacturer and having the same catalogue reference should be used, mounted in exactly the same way. If applicable, it is recommended to warn general consumers, who are not aware of the usage cautions for the battery fuses, remove or replace the battery fuses through a note to this effect in the user's manual and other related material.

三端保险丝“SEFUSE® D6SC (12A,15A)系列”的使用说明

以下是针对此类设备的客户的D6SC(12A,15A)系列三端保险丝的应用说明。为了保持三端保险丝和使用它的设备的工作性能，建议采取以下措施。

1. 额定值

表1 保险丝规格

产品型号	额定电流 (A)	额定电压 (Vdc)	最大过电流 (A)	保险丝内阻 (mΩ)
D6SC1-12, D6SC2-12, D6SC3-12, D6SC4-12	12	36	50	2.0±1.0
D6SC1-15, D6SC2-15, D6SC3-15 D6SC4-15, D6SC5-15, D6SC6-15	15			1.5±1.0

表2 加热器规格

产品型号	适用电芯数	动作电压范围 (V)	加热器电阻 (Ω)	适用功率范围 (W) 注1
D6SC1-12	1	3.0~5.0	1.35±25%	5.3~24.7
D6SC1-15			1.25±20%	6.0~25.0
D6SC2-12	2	4.0~9.0	2.50±20%	5.3~40.5
D6SC2-15			3.20±20%	6.5~31.7
D6SC3-12	3	7.4~13.8	8.30±20%	5.5~28.7
D6SC3-15			6.95±20%	6.5~34.3
D6SC4-12	4	10.5~19.6	16.70±20%	5.5~28.8
D6SC4-15			13.10±20%	7.0~36.7
D6SC5-15	5	14.4~23.5	23.5±20%	7.3~29.4
D6SC6-15	6	16.8~28.0	36.2±20%	6.5~27.1

注1 参考

2. 应用说明

2.1 设计注意事项

- 2.1.1 客户应判断每种应用的安装位置和安装方法是否合适。当电流通过时，三端保险丝的本体温度会升高，并且可能会高于环境温度。因此，在与实际操作相同的条件安装三端保险丝后，请运行最终产品并确认三端保险丝是否正常工作。请确认并测试三端保险丝在正常情况下以及在预计的最大异常情况下是否不会引起问题。
- 2.1.2 请勿在航空航天设备，航空设备，核反应堆控制系统，生命支持设备或系统，运输机械发动机控制或安全相关设备中使用此设备。该设备设计用于家用电器，办公自动化设备，音频和视频设备，计算机通信设备，测试和测量设备，个人电子设备和运输设备（不包括引擎控制）。
- 2.1.3 不要把树脂中使用三端保险丝，树脂可能会渗入保险丝内部从而导致产品不符合规格。此类产品将不会在产品质量保证范围之内。
- 2.1.4 不要在液体（水或有机溶剂）或异常大气（二氧化硫、氧化氮或高湿度）中使用三端保险丝。三端保险丝安装前后不得进行超声波清洗或浸洗。这种类型的清洗可能导致可熔合金上的助溶剂流动从而导致产品无法达到规格要求。此外，产品与清洗剂接触后也会产生相同影响。此类产品将不会在产品质量保证范围之内。
- 2.1.5 确保本产品的端子在电路板上为连接属性，使其值处于端子「1」-「4」和「3」-「4」之间的额定加热器电阻内。
- 2.1.6 请不要重复使用通过焊料校正拆下的三端保险丝。
- 2.1.7 如果预计一般消费者不了解三端保险丝的使用注意事项，请通过用户手册和其他相关资料提醒不要安装，拆卸或更换三端保险丝。

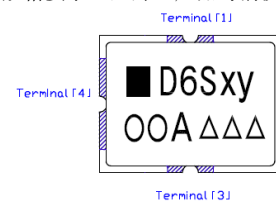


Fig.1 Terminal position

2.2 处置注意事项

- 2.2.1 三端保险丝与工业废料相对应，因此请按照政府，省级法规进行处理，或委托给有资质的第三方处置。

3. 使用时的检测

因为在三端保险丝安装到设备上的过程中，可能会受到机械力或热力的损坏，建议经常实施以下检测。

- (1) 三端保险丝外部外观检测
- (2) 导电性检测
- (3) 三端保险丝内部的X光检测
- (4) 动作试验（抽样）

4. 出于安全考虑

三端保险丝是不可修复的部件，如果要更换，应使用来自同一制造商且具有相同目录参考的等效三端保险丝，并以完全相同的方式安装。如果适用，建议提醒不了解三端保险丝使用注意事项的一般消费者，参考用户使用手册和其他相关材料中的注释来移除或更换三端保险丝。

Application Instructions of Battery Fuses “SEFUSE® D6SC Series (22A)”

The followings are application instructions of battery fuses D6SC series (22A) for the customers of such devices. The following items are recommended to maintain the operation performance of battery fuses and equipment which use it.

1. Ratings

Table 1. Fuse specifications

Product Name	Rated Current (A)	Rated Voltage (Vdc)	Breaking Capacity (A)	Fuse Resistance (mΩ)
D6SC1-22, D6SC2-22, D6SC3-22 D6SC4-22, D6SC5-22	22	62	80	0.7±0.5

Table 2. Heater specifications

Product Name	Applicable Series Cell Number	Applicable Voltage Range (V)	Heater Resistance (Ω)	Applicable Wattage Range (W) ^{Note 1}
D6SC1-22	1	3.5~4.7	0.85±20%	12.0~32.5
D6SC2-22	2	6.0~9.4	3.00±15%	10.4~34.7
D6SC3-22	3	9.0~14.1	7.00±15%	10.0~33.5
D6SC4-22	4	12.0~18.8	12.4±15%	10.1~33.6
D6SC5-22	5	15.9~23.5	20.6±15%	10.6~31.6

Note 1. Reference

2. Application Instructions

2.1 Design Caution

- 2.1.1 The customer should judge the propriety of mounting location and mounting method for each application. The body temperature of the battery fuses becomes higher as current passes through, and might rise higher than the ambient atmosphere temperature. Therefore, after mounting the battery fuses under the same conditions you would use for the actual operation, please run the final product and confirm whether the battery fuses operate normally. Please confirm and test whether battery fuses does not cause problem repeatedly, under normal conditions as well as under predicted maximum abnormal conditions.
- 2.1.2 Do not use this device in aerospace equipment, aeronautical equipment, nuclear reactor control systems, life support equipment or systems, transportation machinery engine control or safety-related equipment. This device is designed for use in household electric appliance, office automation equipment, audio and video equipment, computer communications equipment, test and measurement equipment, personal electronic equipment and transportation equipment (excluding engine control).
- 2.1.3 Do not contact the battery fuses and resin-mold. The resin might infiltrate into the product, and it doesn't meet the specification when the resin-mold is done to this product. These products after resin-mold will not be guaranteed.
- 2.1.4 Do not use the battery fuses in the liquid as water or organic solvents, in the atmosphere as sulfurous acid gas, nitrogen oxide gas, or high humidity. And, ultrasonic-cleaning or immersion-cleaning and so on must not be done to the battery fuses before and after mounted. When cleaning is done, flux on element would flow, and it would not be satisfied its specifications. Moreover, a similar influence happens when the product comes in contact with cleaning-solution. These products after cleaning will not be guaranteed.
- 2.1.5 Make sure that the terminals of this product are connected property on the land of circuit board, and the value falls in the rated heater resistance between Terminal「1」-「4」 and 「3」-「4」.
- 2.1.6 Please do not re-use of the battery fuses removed by solder correction.
- 2.1.7 If it is expected that the general consumers who are not aware of the usage cautions for the battery fuses handle it, please warn not to mount, remove or replace the battery fuses through the user's manual and other related material.

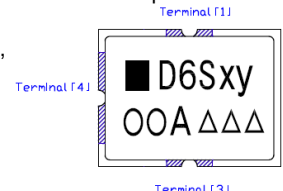


Fig.1 Terminal position

2.2 Disposal Considerations

- 2.2.1 The battery fuses corresponds to industrial waste, so dispose it according to the government, provincial regulations, or entrust the licensed disposal contractor.

3. Examination for damage

Since battery fuses may be damaged by the mechanical force or the thermal force in the installation process of battery fuses to equipment. The following checks are also recommended often installing.

- (1) Appearance check for outside of battery fuses.
- (2) Conductivity check.
- (3) X-ray check for inside of battery fuses.
- (4) Operation check by sampling.

4. For reasons of safety

The battery fuses is a non-repairable item and, in case of replacement, an equivalent battery fuses from the same manufacturer and having the same catalogue reference should be used, mounted in exactly the same way. If applicable, it is recommended to warn general consumers, who are not aware of the usage cautions for the battery fuses, remove or replace the battery fuses through a note to this effect in the user's manual and other related material.

三端保险丝“SEFUSE® D6SC (22A)系列”的使用说明

以下是针对此类设备的客户的D6SC(22A)系列三端保险丝的应用说明。为了保持三端保险丝和使用它的设备的工作性能，建议采取以下措施。

1. 额定值

表1 保险丝规格

产品型号	额定电流 (A)	额定电压 (Vdc)	最大过电流 (A)	保险丝内阻 (mΩ)
D6SC1-22, D6SC2-22, D6SC3-22 D6SC4-22, D6SC5-22	22	62	80	0.7±0.5

表2 加热器规格

产品型号	适用电芯数	动作电压范围 (V)	加热器电阻 (Ω)	适用功率范围 (W) 注1
D6SC1-22	1	3.5~4.7	0.85±20%	12.0~32.5
D6SC2-22	2	6.0~9.4	3.00±15%	10.4~34.7
D6SC3-22	3	9.0~14.1	7.00±15%	10.0~33.5
D6SC4-22	4	12.0~18.8	12.4±15%	10.1~33.6
D6SC5-22	5	15.9~23.5	20.6±15%	10.6~31.6

注1 参考

2. 应用说明

2.1 设计注意事项

- 2.1.1 客户应判断每种应用的安装位置和安装方法是否合适。当电流通过时，三端保险丝的本体温度会升高，并且可能会高于环境温度。因此，在以与实际操作相同的条件安装三端保险丝后，请运行最终产品并确认三端保险丝是否正常工作。请确认并测试三端保险丝在正常情况下以及在预计的最大异常情况下是否不会引起问题。
- 2.1.2 请勿在航空航天设备，航空设备，核反应堆控制系统，生命支持设备或系统，运输机械发动机控制或安全相关设备中使用此设备。该设备设计用于家用电器，办公自动化设备，音频和视频设备，计算机通信设备，测试和测量设备，个人电子设备和运输设备（不包括引擎控制）。
- 2.1.3 不要把树脂中使用三端保险丝，树脂可能会渗入保险丝内部从而导致产品不符合规格。此类产品将不会在产品质量保证范围之内。
- 2.1.4 不要在液体（水或有机溶剂）或异常大气（二氧化硫、氧化氮或高湿度）中使用三端保险丝。三端保险丝安装前后不得进行超声波清洗或浸洗。这种类型的清洗可能导致可熔合金上的助溶剂流动从而导致产品无法达到规格要求。此外，产品与清洗剂接触后也会产生相同影响。此类产品将不会在产品质量保证范围之内。
- 2.1.5 确保本产品的端子在电路板上为连接属性，使其值处于端子「1」-「4」和「3」-「4」之间的额定加热器电阻内。
- 2.1.6 请不要重复使用通过焊料校正拆下的三端保险丝。
- 2.1.7 如果预计一般消费者不了解三端保险丝的使用注意事项，请通过用户手册和其他相关资料提醒不要安装，拆卸或更换三端保险丝。

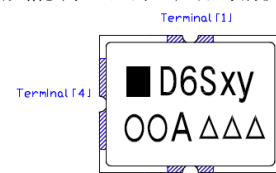


Fig.1 Terminal position

2.2 处置注意事项

- 2.2.1 三端保险丝与工业废料相对应，因此请按照政府，省级法规进行处理，或委托给有资质的第三方处置。

3. 使用时的检测

因为在三端保险丝安装到设备上的过程中，可能会受到机械力或热力的损坏，建议经常实施以下检测。

- (1) 三端保险丝外部外观检测
- (2) 导电性检测
- (3) 三端保险丝内部的X光检测
- (4) 动作试验（抽样）

4. 出于安全考虑

三端保险丝是不可修复的部件，如果要更换，应使用来自同一制造商且具有相同目录参考的等效三端保险丝，并以完全相同的方式安装。如果适用，建议提醒不了解三端保险丝使用注意事项的一般消费者，参考用户使用手册和其他相关材料中的注释来移除或更换三端保险丝。

Application Instructions of Battery Fuses “SEFUSE® D6SC Series (22A)”

The followings are application instructions of battery fuses D6SC series (22A) for the customers of such devices. The following items are recommended to maintain the operation performance of battery fuses and equipment which use it.

1. Ratings

Table 1. Fuse specifications

Product Name	Rated Current (A)	Rated Voltage (Vdc)	Breaking Capacity (A)	Fuse Resistance (mΩ)
D6SC1-22E, D6SC2-22E, D6SC3-22E, D6SC4-22E, D6SC5-22E	22	62	80	0.7±0.5

Table 2. Heater specifications

Product Name	Applicable Series Cell Number	Applicable Voltage Range (V)	Heater Resistance (Ω)	Applicable Wattage Range (W) <small>Note 1</small>
D6SC1-22E	1	3.7~5.0	0.80±20.0%	14.2~39.1
D6SC2-22E	2	6.4~10.0	2.80±15.0%	12.7~42.1
D6SC3-22E	3	9.0~14.1	6.40±15.0%	11.0~36.6
D6SC4-22E	4	12.0~18.8	11.2±15.0%	11.1~37.2
D6SC5-22E	5	15.9~23.5	19.8±15.0%	11.1~32.9

Note 1. Reference

2. Application Instructions

2.1 Design Caution

- 2.1.1 The customer should judge the propriety of mounting location and mounting method for each application. The body temperature of the battery fuses becomes higher as current passes through, and might rise higher than the ambient atmosphere temperature. Therefore, after mounting the battery fuses under the same conditions you would use for the actual operation, please run the final product and confirm whether the battery fuses operate normally. Please confirm and test whether battery fuses does not cause problem repeatedly, under normal conditions as well as under predicted maximum abnormal conditions.
- 2.1.2 Do not use this device in aerospace equipment, aeronautical equipment, nuclear reactor control systems, life support equipment or systems, transportation machinery engine control or safety-related equipment. This device is designed for use in household electric appliance, office automation equipment, audio and video equipment, computer communications equipment, test and measurement equipment, personal electronic equipment and transportation equipment (excluding engine control).
- 2.1.3 Do not contact the battery fuses and resin-mold. The resin might infiltrate into the product, and it doesn't meet the specification when the resin-mold is done to this product. These products after resin-mold will not be guaranteed.
- 2.1.4 Do not use the battery fuses in the liquid as water or organic solvents, in the atmosphere as sulfurous acid gas, nitrogen oxide gas, or high humidity. And, ultrasonic-cleaning or immersion-cleaning and so on must not be done to the battery fuses before and after mounted. When cleaning is done, flux on element would flow, and it would not be satisfied its specifications. Moreover, a similar influence happens when the product comes in contact with cleaning-solution. These products after cleaning will not be guaranteed.
- 2.1.5 Make sure that the terminals of this product are connected property on the land of circuit board, and the value falls in the rated heater resistance between Terminal「1」-「4」 and 「3」-「4」.
- 2.1.6 Please do not re-use of the battery fuses removed by solder correction.
- 2.1.7 If it is expected that the general consumers who are not aware of the usage cautions for the battery fuses handle it, please warn not to mount, remove or replace the battery fuses through the user's manual and other related material.

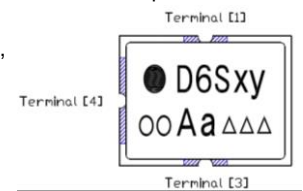


Fig.1 Terminal position

2.2 Disposal Considerations

- 2.2.1 The battery fuses corresponds to industrial waste, so dispose it according to the government, provincial regulations, or entrust the licensed disposal contractor.

3. Examination for damage

Since battery fuses may be damaged by the mechanical force or the thermal force in the installation process of battery fuses to equipment. The following checks are also recommended often installing.

- (1) Appearance check for outside of battery fuses.
- (2) Conductivity check.
- (3) X-ray check for inside of battery fuses.
- (4) Operation check by sampling.

4. For reasons of safety

The battery fuses is a non-repairable item and, in case of replacement, an equivalent battery fuses from the same manufacturer and having the same catalogue reference should be used, mounted in exactly the same way. If applicable, it is recommended to warn general consumers, who are not aware of the usage cautions for the battery fuses, remove or replace the battery fuses through a note to this effect in the user's manual and other related material.

三端保险丝“SEFUSE® D6SC (22A)系列”的使用说明

以下是针对此类设备的客户的D6SC(22A)系列三端保险丝的应用说明。为了保持三端保险丝和使用它的设备的工作性能，建议采取以下措施。

1. 额定值

表1 保险丝规格

产品型号	额定电流 (A)	额定电压 (Vdc)	最大过电流 (A)	保险丝内阻 (mΩ)
D6SC1-22E, D6SC2-22E, D6SC3-22E, D6SC4-22E, D6SC5-22E	22	62	80	0.7±0.5

表2 加热器规格

产品型号	适用电芯数	动作电压范围 (V)	加热器电阻 (Ω)	适用功率范围 (W) 注1
D6SC1-22E	1	3.7~5.0	0.80±20.0%	14.2~39.1
D6SC2-22E	2	6.4~10.0	2.80±15.0%	12.7~42.1
D6SC3-22E	3	9.0~14.1	6.40±15.0%	11.0~36.6
D6SC4-22E	4	12.0~18.8	11.2±15.0%	11.1~37.2
D6SC5-22E	5	15.9~23.5	19.8±15.0%	11.1~32.9

注1 参考

2. 应用说明

2.1 设计注意事项

- 2.1.1 客户应判断每种应用的安装位置和安装方法是否合适。当电流通过时，三端保险丝的本体温度会升高，并且可能会高于环境温度。因此，在以与实际操作相同的条件安装三端保险丝后，请运行最终产品并确认三端保险丝是否正常工作。请确认并测试三端保险丝在正常情况下以及在预计的最大异常情况下是否不会引起问题。
- 2.1.2 请勿在航空航天设备，航空设备，核反应堆控制系统，生命支持设备或系统，运输机械发动机控制或安全相关设备中使用此设备。该设备设计用于家用电器，办公自动化设备，音频和视频设备，计算机通信设备，测试和测量设备，个人电子设备和运输设备（不包括引擎控制）。
- 2.1.3 不要把树脂中使用三端保险丝，树脂可能会渗入保险丝内部从而导致产品不符合规格。此类产品将不会在产品质量保证范围之内。
- 2.1.4 不要在液体（水或有机溶剂）或异常大气（二氧化硫、氧化氮或高湿度）中使用三端保险丝。三端保险丝安装前后不得进行超声波清洗或浸洗。这种类型的清洗可能导致可熔合金上的助溶剂流动从而导致产品无法达到规格要求。此外，产品与清洗剂接触后也会产生相同影响。此类产品将不会在产品质量保证范围之内。
- 2.1.5 确保本产品的端子在电路板上为连接属性，使其值处于端子「1」-「4」和「3」-「4」之间的额定加热器电阻内。
- 2.1.6 请不要重复使用通过焊料校正拆下的三端保险丝。
- 2.1.7 如果预计一般消费者不了解三端保险丝的使用注意事项，请通过用户手册和其他相关资料提醒不要安装，拆卸或更换三端保险丝。

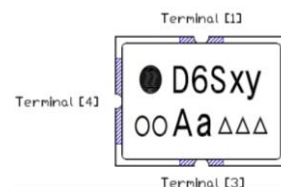


Fig.1 Terminal position

2.2 处置注意事项

- 2.2.1 三端保险丝与工业废料相对应，因此请按照政府，省级法规进行处理，或委托给有资质的第三方处置。

3. 使用时的检测

因为在三端保险丝安装到设备上的过程中，可能会受到机械力或热力的损坏，建议经常实施以下检测。

- (1) 三端保险丝外部外观检测
- (2) 导电性检测
- (3) 三端保险丝内部的X光检测
- (4) 动作试验（抽样）

4. 出于安全考虑

三端保险丝是不可修复的部件，如果要更换，应使用来自同一制造商且具有相同目录参考的等效三端保险丝，并以完全相同的方式安装。如果适用，建议提醒不了解三端保险丝使用注意事项的一般消费者，参考用户使用手册和其他相关材料中的注释来移除或更换三端保险丝。

Application Instructions of Battery Fuses “SEFUSE® D6SE Series (30A)”

The followings are application instructions of battery fuses D6SE series (30A) for the customers of such devices. The following items are recommended to maintain the operation performance of battery fuses and equipment which use it.

1. Ratings

Table 1. Fuse specifications

Product Name	Rated Current (A)	Rated Voltage (Vdc)	Breaking Capacity (A)	Fuse Resistance (mΩ)
D6SEy-30 (D6SE02-30, D6SE03-30, D6SE05-30, D6SE09-30, D6SE14-30)	30	80	80	1.5±0.5

Table 2. Heater specifications

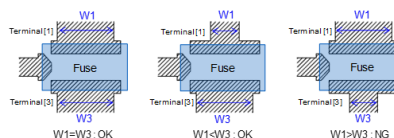
Product Name	Applicable Series Cell Number	Applicable Voltage Range (V)	Heater Resistance (Ω)	Applicable Wattage Range (W) ^{Note 1}
D6SE02-30	1~2	4.0~9.6	1.10±15%	12.6~98.6
D6SE03-30	3	8.4~19.1	4.50±20%	13.0~101.4
D6SE05-30	4~5	10.5~23.5	6.85±20%	13.4~100.8
D6SE09-30	6~9	20.2~46.3	26.0±20%	13.0~103.1
D6SE14-30	10~14	28.0~62.0	50.0±20%	13.0~96.1

Note 1. Reference

2. Application Instructions

2.1 Design Caution

2.1.1 Do not design electrode on your PCB so that Terminal 「1」 radiate heat more than Terminal 「3」.



2.1.2 The customer should judge the propriety of mounting location and mounting method for each application. The body temperature of the battery fuses becomes higher as current passes through, and might rise higher than the ambient atmosphere temperature. Therefore, after mounting the battery fuses under the same conditions you would use for the actual operation, please run the final product and confirm whether the battery fuses operate normally. Please confirm and test whether battery fuses does not cause problem repeatedly, under normal conditions as well as under predicted maximum abnormal conditions.

2.1.3 Do not use this device in aerospace equipment, aeronautical equipment, nuclear reactor control systems, life support equipment or systems, transportation machinery engine control or safety-related equipment. This device is designed for use in household electric appliance, office automation equipment, audio and video equipment, computer communications equipment, test and measurement equipment, personal electronic equipment and transportation equipment (excluding engine control).

2.1.4 Do not contact the battery fuses and resin-mold. The resin might infiltrate into the product, and it doesn't meet the specification when the resin-mold is done to this product. These products after resin-mold will not be guaranteed.

2.1.5 Do not use the battery fuse in the liquid as water or organic solvents, in the atmosphere as sulfurous acid gas, nitrogen oxide gas, or high humidity. And, ultrasonic-cleaning or immersion-cleaning and so on must not be done to the battery fuse before and after mounted. When cleaning is done, flux on element would flow, and it would not be satisfied its specifications. Moreover, a similar influence happens when the product comes in contact with cleaning-solution. These products after cleaning will not be guaranteed.

2.1.6 Make sure that the terminals of this product are connected property on the land of circuit board, and the value falls in the rated heater resistance between Terminal 「1」-「4」 and 「3」-「4」.

2.1.7 Please do not re-use of the battery fuses removed by solder correction.

2.1.8 If it is expected that the general consumers who are not aware of the usage cautions for the battery fuses handle it, please warn not to mount, remove or replace the battery fuses through the user's manual and other related material.



Fig.1 Terminal position

2.2 Disposal Considerations

2.2.1 The battery fuses corresponds to industrial waste, so dispose it according to the government, provincial regulations, or entrust the licensed disposal contractor.

3. Examination for damage

Since battery fuses may be damaged by the mechanical force or the thermal force in the installation process of battery fuses to equipment. The following checks are also recommended often installing.

- (1) Appearance check for outside of battery fuses.
- (2) Conductivity check.
- (3) X-ray check for inside of battery fuses.
- (4) Operation check by sampling.

4. For reasons of safety

The battery fuses is a non-repairable item and, in case of replacement, an equivalent battery fuses from the same manufacturer and having the same catalogue reference should be used, mounted in exactly the same way. If applicable, it is recommended to warn general consumers, who are not aware of the usage cautions for the battery fuses, remove or replace the battery fuses through a note to this effect in the user's manual and other related material.

三端保险丝“SEFUSE® D6SE (30A)系列”的使用说明

以下是针对此类设备的客户的D6SE(30A)系列三端保险丝的应用说明。为了保持三端保险丝和使用它的设备的工作性能，建议采取以下措施

1. 额定值

表1 保险丝规格

产品型号	额定电流 (A)	额定电压 (Vdc)	最大过电流 (A)	保险丝内阻 (mΩ)
D6SEy-30 (D6SE02-30, D6SE03-30, D6SE05-30, D6SE09-30, D6SE14-30)	30	80	80	1.5±0.5

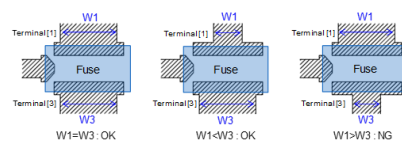
表2 加热器规格

产品型号	适用电芯数	动作电压范围 (V)	加热器电阻 (Ω)	适用功率范围 (W) 注1
D6SE02-30	1~2	4.0~9.6	1.10±15%	12.6~98.6
D6SE03-30	3	8.4~19.1	4.50±20%	13.0~101.4
D6SE05-30	4~5	10.5~23.5	6.85±20%	13.4~100.8
D6SE09-30	6~9	20.2~46.3	26.0±20%	13.0~103.1
D6SE14-30	10~14	28.0~62.0	50.0±20%	13.0~96.1

注1 参考

2. 应用说明

2.1 设计注意事项



2.1.1 请勿在PCB上设计电极，以使端子「1」的散热量大于端子「3」的散热量。

2.1.2 客户应判断每种应用的安装位置和安装方法是否合适。当电流通过时，三端保险丝的本体温度会升高，并且可能会高于环境温度。因此，在以与实际操作相同的条件安装三端保险丝后，请运行最终产品并确认三端保险丝是否正常工作。请确认并测试三端保险丝在正常情况下以及在预计的最大异常情况下是否不会引起问题。

2.1.3 请勿在航空航天设备，航空设备，核反应堆控制系统，生命支持设备或系统，运输机械发动机控制或安全相关设备中使用此设备。该设备设计用于家用电器，办公自动化设备，音频和视频设备，计算机通信设备，测试和测量设备，个人电子设备和运输设备（不包括引擎控制）。

2.1.4 不要把树脂中使用三端保险丝，树脂可能会渗入保险丝内部从而导致产品不符合规格。此类产品将不会在产品质量保证范围之内。

2.1.5 不要在液体（水或有机溶剂）或异常大气（二氧化硫、氧化氮或高湿度）中使用三端保险丝。三端保险丝安装前后不得进行超声波清洗或浸洗。这种类型的清洗可能导致可熔合金上的助溶剂流动从而导致产品无法达到规格要求。此外，产品与清洗剂接触后也会产生相同影响。此类产品将不会在产品质量保证范围之内。

2.1.6 确保本产品的端子在电路板上为连接属性，使其值处于端子「1」-「4」和「3」-「4」之间的额定加热器电阻内。

2.1.7 请不要重复使用通过焊料校正拆下的三端保险丝。

2.1.8 如果预计一般消费者不了解三端保险丝的使用注意事项，请通过用户手册和其他相关资料提醒不要安装，拆卸或更换三端保险丝。

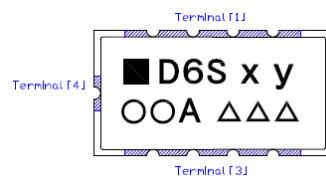


Fig.1 Terminal position

2.2 处置注意事项

2.2.1 三端保险丝与工业废料相对应，因此请按照政府，省级法规进行处理，或委托给有资质的第三方处置。

3. 使用时的检测

因为在三端保险丝安装到设备上的过程中，可能会受到机械力或热力的损坏，建议经常实施以下检测。

- | | |
|------------------|--------------|
| (1) 三端保险丝外部外观检测 | (2) 导电性检测 |
| (3) 三端保险丝内部的X光检测 | (4) 动作试验（抽样） |

4. 出于安全考虑

三端保险丝是不可修复的部件，如果要更换，应使用来自同一制造商且具有相同目录参考的等效三端保险丝，并以完全相同的方式安装。如果适用，建议提醒不了解三端保险丝使用注意事项的一般消费者，参考用户使用手册和其他相关材料中的注释来移除或更换三端保险丝。

Application Instructions of Battery Fuses “SEFUSE® D6SE Series (45A)”

The followings are application instructions of battery fuses D6SE series (45A) for the customers of such devices. The following items are recommended to maintain the operation performance of battery fuses and equipment which use it.

1. Ratings

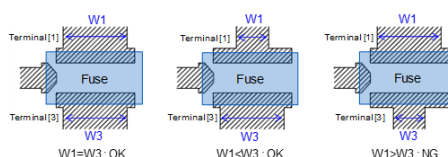
Table 1. Fuse specifications

Product Name	Rated Current (A)	Rated Voltage (Vdc)	Breaking Capacity (A)	Fuse Resistance (mΩ)
D6SEy-45 (D6SE02-45, D6SE03-45, D6SE04-45, D6SE05-45, D6SE07-45, D6SE10-45, D6SE14-45)	45	80	120	1.4±0.4

Table 2. Heater specifications

Product Name	Applicable Series Cell Number	Applicable Voltage Range (V)	Heater Resistance (Ω)	Applicable Wattage Range (W) ^{Note 1}
D6SE02-45	2	6.0~9.0	1.00±15%	31.3~95.3
D6SE03-45	3	9.8~13.5	2.65±20%	30.2~86.0
D6SE04-45	4	13.0~18.4	4.65±20%	30.2~91.1
D6SE05-45	5	16.7~23.5	7.70±20%	30.1~89.7
D6SE07-45	6~7	22.3~31.5	14.4±15%	30.0~81.1
D6SE10-45	9~10	33.0~46.9	31.4±15%	30.1~82.5
D6SE14-45	12~14	43.7~62.0	55.2±15%	30.0~82.0

Note 1. Reference



2. Application Instructions

2.1 Design Caution

2.1.1 Do not design electrode on your PCB so that Terminal 「1」 radiate heat more than Terminal 「3」.

2.1.2 The customer should judge the propriety of mounting location and mounting method for each application. The body temperature of the battery fuses becomes higher as current passes through, and might rise higher than the ambient atmosphere temperature. Therefore, after mounting the battery fuses under the same conditions you would use for the actual operation, please run the final product and confirm whether the battery fuses operate normally. Please confirm and test whether battery fuses does not cause problem repeatedly, under normal conditions as well as under predicted maximum abnormal conditions.

2.1.3 Do not use this device in aerospace equipment, aeronautical equipment, nuclear reactor control systems, life support equipment or systems, transportation machinery engine control or safety-related equipment. This device is designed for use in household electric appliance, office automation equipment, audio and video equipment, computer communications equipment, test and measurement equipment, personal electronic equipment and transportation equipment (excluding engine control).

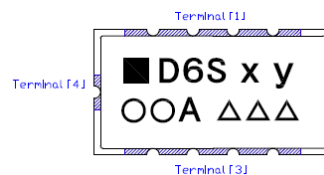
2.1.4 Do not contact the battery fuses and resin-mold. The resin might infiltrate into the product, and it doesn't meet the specification when the resin-mold is done to this product. These products after resin-mold will not be guaranteed.

2.1.5 Do not use the battery fuses in the liquid as water or organic solvents, in the atmosphere as sulfurous acid gas, nitrogen oxide gas, or high humidity. And, ultrasonic-cleaning or immersion-cleaning and so on must not be done to the battery fuses before and after mounted. When cleaning is done, flux on element would flow, and it would not be satisfied its specifications. Moreover, a similar influence happens when the product comes in contact with cleaning-solution. These products after cleaning will not be guaranteed.

2.1.6 Make sure that the terminals of this product are connected property on the land of circuit board, and the value falls in the rated heater resistance between Terminal 「1」-「4」 and 「3」-「4」.

2.1.7 Please do not re-use of the battery fuses removed by solder correction.

2.1.8 If it is expected that the general consumers who are not aware of the usage cautions for the battery fuses handle it, please warn not to mount, remove or replace the battery fuses through the user's manual and other related material.



2.2 Disposal Considerations

2.2.1 The battery fuses corresponds to industrial waste, so dispose it according to the government, provincial regulations, or entrust the licensed disposal contractor.

3. Examination for damage

Since battery fuses may be damaged by the mechanical force or the thermal force in the installation process of battery fuses to equipment. The following checks are also recommended often installing.

- (1) Appearance check for outside of battery fuses.
- (2) Conductivity check.
- (3) X-ray check for inside of battery fuses.
- (4) Operation check by sampling.

4. For reasons of safety

The battery fuses is a non-repairable item and, in case of replacement, an equivalent battery fuses from the same manufacturer and having the same catalogue reference should be used, mounted in exactly the same way. If applicable, it is recommended to warn general consumers, who are not aware of the usage cautions for the battery fuses, remove or replace the battery fuses through a note to this effect in the user's manual and other related material.

三端保险丝“SEFUSE® D6SE (45A)系列”的使用说明

以下是针对此类设备的客户的D6SE(45A)系列三端保险丝的应用说明。为了保持三端保险丝和使用它的设备的工作性能，建议采取以下措施

1. 额定值

表1 保险丝规格

产品型号	额定电流 (A)	额定电压 (Vdc)	最大过电流 (A)	保险丝内阻 (mΩ)
D6SEy-45 (D6SE02-45, D6SE03-45, D6SE04-45, D6SE05-45, D6SE07-45, D6SE10-45, D6SE14-45)	45	80	120	1.4±0.4

表2 加热器规格

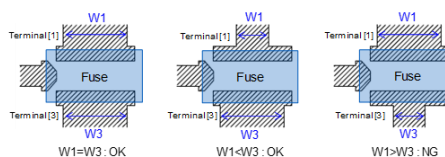
产品型号	适用电芯数	动作电压范围 (V)	加热器电阻 (Ω)	适用功率范围 (W) 注1
D6SE02-45	2	6.0~9.0	1.00±15%	31.3~95.3
D6SE03-45	3	9.8~13.5	2.65±20%	30.2~86.0
D6SE04-45	4	13.0~18.4	4.65±20%	30.2~91.1
D6SE05-45	5	16.7~23.5	7.70±20%	30.1~89.7
D6SE07-45	6~7	22.3~31.5	14.4±15%	30.0~81.1
D6SE10-45	9~10	33.0~46.9	31.4±15%	30.1~82.5
D6SE14-45	12~14	43.7~62.0	55.2±15%	30.0~82.0

注1 参考

2. 应用说明

2.1 设计注意事项

2.1.1 请勿在PCB上设计电极，以使端子「1」的散热量大于端子「3」的散热量。



2.1.2 客户应判断每种应用的安装位置和安装方法是否合适。当电流通过时，三端保险丝的本体温度会升高，并且可能会高于环境温度。因此，在以与实际操作相同的条件安装三端保险丝后，请运行最终产品并确认三端保险丝是否正常工作。请确认并测试三端保险丝在正常情况下以及在预计的最大异常情况下是否不会引起问题。

2.1.3 请勿在航空航天设备，航空设备，核反应堆控制系统，生命支持设备或系统，运输机械发动机控制或安全相关设备中使用此设备。该设备设计用于家用电器，办公自动化设备，音频和视频设备，计算机通信设备，测试和测量设备，个人电子设备和运输设备（不包括引擎控制）。

2.1.4 不要把树脂中使用三端保险丝，树脂可能会渗入保险丝内部从而导致产品不符合规格。此类产品将不会在产品质量保证范围之内。

2.1.5 不要在液体（水或有机溶剂）或异常大气（二氧化硫、氧化氮或高湿度）中使用三端保险丝。三端保险丝安装前后不得进行超声波清洗或浸洗。这种类型的清洗可能导致可熔合金上的助溶剂流动从而导致产品无法达到规格要求。此外，产品与清洗剂接触后也会产生相同影响。此类产品将不会在产品质量保证范围之内。

2.1.6 确保本产品的端子在电路板上为连接属性，使其值处于端子「1」-「4」和「3」-「4」之间的额定加热器电阻内。

2.1.7 请不要重复使用通过焊料校正拆下的三端保险丝。

2.1.8 如果预计一般消费者不了解三端保险丝的使用注意事项，请通过用户手册和其他相关资料提醒不要安装，拆卸或更换三端保险丝。



Fig.1 Terminal position

2.2 处置注意事项

2.2.1 三端保险丝与工业废料相对应，因此请按照政府，省级法规进行处理，或委托给有资质的第三方处置。

3. 使用时的检测

因为在三端保险丝安装到设备上的过程中，可能会受到机械力或热力的损坏，建议经常实施以下检测。

- | | |
|------------------|--------------|
| (1) 三端保险丝外部外观检测 | (2) 导电性检测 |
| (3) 三端保险丝内部的X光检测 | (4) 动作试验（抽样） |

4. 出于安全考虑

三端保险丝是不可修复的部件，如果要更换，应使用来自同一制造商且具有相同目录参考的等效三端保险丝，并以完全相同的方式安装。如果适用，建议提醒不了解三端保险丝使用注意事项的一般消费者，参考用户使用手册和其他相关材料中的注释来移除或更换三端保险丝。

Application Instructions of Battery Fuses “SEFUSE® D6SE Series (60A)”

The followings are application instructions of battery fuses D6SE series (60A) for the customers of such devices. The following items are recommended to maintain the operation performance of battery fuses and equipment which use it.

1. Ratings

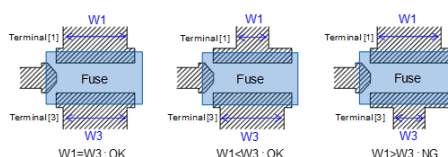
Table 1. Fuse specifications

Product Name	Rated Current (A)	Rated Voltage (Vdc)	Breaking Capacity (A)	Fuse Resistance (mΩ)
D6SEy-60 (D6SE02-60, D6SE03-60, D6SE04-60, D6SE05-60, D6SE07-60, D6SE10-60, D6SE14-60)	60	80	160	1.0±0.3

Table 2. Heater specifications

Product Name	Applicable Series Cell Number	Applicable Voltage Range (V)	Heater Resistance (Ω)	Applicable Wattage Range (W) ^{Note 1}
D6SE02-60	2	6.0~9.0	1.20±15%	26.0~79.5
D6SE03-60	3	9.6~13.5	2.40±20%	32.0~95.0
D6SE04-60	4	13.0~18.4	4.40±20%	32.0~96.2
D6SE05-60	5	16.7~23.5	7.20±20%	32.2~95.9
D6SE07-60	6~7	22.3~31.5	13.4±15%	32.2~87.2
D6SE10-60	9~10	33.0~46.9	29.4±15%	32.2~88.1
D6SE14-60	12~14	43.7~62.0	51.8±15%	32.0~87.4

Note 1. Reference



2. Application Instructions

2.1 Design Caution

2.1.1 Do not design electrode on your PCB so that Terminal 「1」 radiate heat more than Terminal 「3」.

2.1.2 The customer should judge the propriety of mounting location and mounting method for each application. The body temperature of the battery fuses becomes higher as current passes through, and might rise higher than the ambient atmosphere temperature. Therefore, after mounting the battery fuses under the same conditions you would use for the actual operation, please run the final product and confirm whether the battery fuses operate normally. Please confirm and test whether battery fuses does not cause problem repeatedly, under normal conditions as well as under predicted maximum abnormal conditions.

2.1.3 Do not use this device in aerospace equipment, aeronautical equipment, nuclear reactor control systems, life support equipment or systems, transportation machinery engine control or safety-related equipment. This device is designed for use in household electric appliance, office automation equipment, audio and video equipment, computer communications equipment, test and measurement equipment, personal electronic equipment and transportation equipment (excluding engine control).

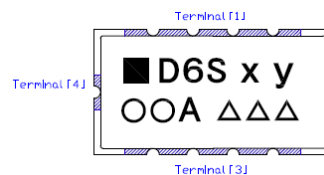
2.1.4 Do not contact the battery fuses and resin-mold. The resin might infiltrate into the product, and it doesn't meet the specification when the resin-mold is done to this product. These products after resin-mold will not be guaranteed.

2.1.5 Do not use the battery fuses in the liquid as water or organic solvents, in the atmosphere as sulfurous acid gas, nitrogen oxide gas, or high humidity. And, ultrasonic-cleaning or immersion-cleaning and so on must not be done to the battery fuses before and after mounted. When cleaning is done, flux on element would flow, and it would not be satisfied its specifications. Moreover, a similar influence happens when the product comes in contact with cleaning-solution. These products after cleaning will not be guaranteed.

2.1.6 Make sure that the terminals of this product are connected property on the land of circuit board, and the value falls in the rated heater resistance between Terminal 「1」-「4」 and 「3」-「4」.

2.1.7 Please do not re-use of the battery fuses removed by solder correction.

2.1.8 If it is expected that the general consumers who are not aware of the usage cautions for the battery fuses handle it, please warn not to mount, remove or replace the battery fuses through the user's manual and other related material.



2.2 Disposal Considerations

2.2.1 The battery fuses corresponds to industrial waste, so dispose it according to the government, provincial regulations, or entrust the licensed disposal contractor.

3. Examination for damage

Since battery fuses may be damaged by the mechanical force or the thermal force in the installation process of battery fuses to equipment. The following checks are also recommended often installing.

- (1) Appearance check for outside of battery fuses.
- (2) Conductivity check.
- (3) X-ray check for inside of battery fuses.
- (4) Operation check by sampling.

4. For reasons of safety

The battery fuses is a non-repairable item and, in case of replacement, an equivalent battery fuses from the same manufacturer and having the same catalogue reference should be used, mounted in exactly the same way. If applicable, it is recommended to warn general consumers, who are not aware of the usage cautions for the battery fuses, remove or replace the battery fuses through a note to this effect in the user's manual and other related material.



三端保险丝“SEFUSE® D6SE (60A)系列”的使用说明

以下是针对此类设备的客户的D6SE(60A)系列三端保险丝的应用说明。为了保持三端保险丝和使用它的设备的工作性能，建议采取以下措施

1. 额定值

表1 保险丝规格

产品型号	额定电流 (A)	额定电压 (Vdc)	最大过电流 (A)	保险丝内阻 (mΩ)
D6SEy-60 (D6SE02-60, D6SE03-60, D6SE04-60, D6SE05-60, D6SE07-60, D6SE10-60, D6SE14-60)	60	80	160	1.0±0.3

表2 加热器规格

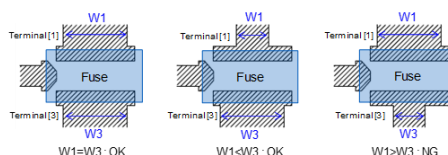
产品型号	适用电芯数	动作电压范围 (V)	加热器电阻 (Ω)	适用功率范围 (W) 注1
D6SE02-60	2	6.0~9.0	1.20±15%	26.0~79.5
D6SE03-60	3	9.6~13.5	2.40±20%	32.0~95.0
D6SE04-60	4	13.0~18.4	4.40±20%	32.0~96.2
D6SE05-60	5	16.7~23.5	7.20±20%	32.2~95.9
D6SE07-60	6~7	22.3~31.5	13.4±15%	32.2~87.2
D6SE10-60	9~10	33.0~46.9	29.4±15%	32.2~88.1
D6SE14-60	12~14	43.7~62.0	51.8±15%	32.0~87.4

注1 参考

2. 应用说明

2.1 设计注意事项

2.1.1 请勿在PCB上设计电极，以使端子「1」的散热量大于端子「3」的散热量。



2.1.2 客户应判断每种应用的安装位置和安装方法是否合适。当电流通过时，三端保险丝的本体温度会升高，并且可能会高于环境温度。因此，在与实际操作相同的条件安装三端保险丝后，请运行最终产品并确认三端保险丝是否正常工作。请确认并测试三端保险丝在正常情况下以及在预计的最大异常情况下是否不会引起问题。

2.1.3 请勿在航空航天设备，航空设备，核反应堆控制系统，生命支持设备或系统，运输机械发动机控制或安全相关设备中使用此设备。该设备设计用于家用电器，办公自动化设备，音频和视频设备，计算机通信设备，测试和测量设备，个人电子设备和运输设备（不包括引擎控制）。

2.1.4 不要把树脂中使用三端保险丝，树脂可能会渗入保险丝内部从而导致产品不符合规格。此类产品将不会在产品质量保证范围之内。

2.1.5 不要在液体（水或有机溶剂）或异常大气（二氧化硫、氧化氮或高湿度）中使用三端保险丝。三端保险丝安装前后不得进行超声波清洗或浸洗。这种类型的清洗可能导致可熔合金上的助溶剂流动从而导致产品无法达到规格要求。此外，产品与清洗剂接触后也会产生相同影响。此类产品将不会在产品质量保证范围之内。

2.1.6 确保本产品的端子在电路板上为连接属性，使其值处于端子「1」-「4」和「3」-「4」之间的额定加热器电阻内。

2.1.7 请不要重复使用通过焊料校正拆下的三端保险丝。

2.1.8 如果预计一般消费者不了解三端保险丝的使用注意事项，请通过用户手册和其他相关资料提醒不要安装，拆卸或更换三端保险丝。



Fig.1 Terminal position

2.2 处置注意事项

2.2.1 三端保险丝与工业废料相对应，因此请按照政府，省级法规进行处理，或委托给有资质的第三方处置。

3. 使用时的检测

因为在三端保险丝安装到设备上的过程中，可能会受到机械力或热力的损坏，建议经常实施以下检测。

- | | |
|------------------|--------------|
| (1) 三端保险丝外部外观检测 | (2) 导电性检测 |
| (3) 三端保险丝内部的X光检测 | (4) 动作试验（抽样） |

4. 出于安全考虑

三端保险丝是不可修复的部件，如果要更换，应使用来自同一制造商且具有相同目录参考的等效三端保险丝，并以完全相同的方式安装。如果适用，建议提醒不了解三端保险丝使用注意事项的一般消费者，参考用户使用手册和其他相关材料中的注释来移除或更换三端保险丝。

