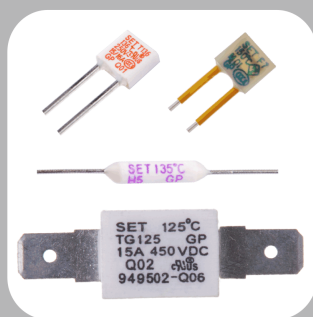


# SET<sup>®</sup> fuse

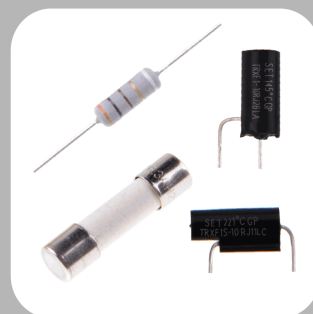
设计、制造、销售电路保护元器件  
Design, Manufacture, Market Circuit Protection Components



过温 Over Temperature

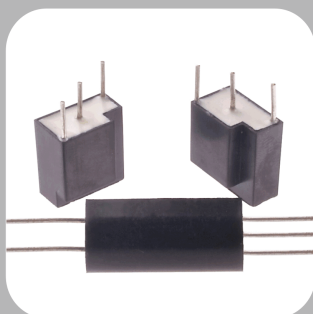


过压 Over Voltage

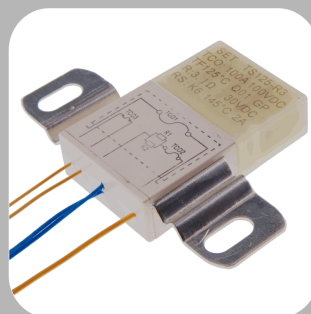


过流 Over Current

5



组合 Multiple



主动 Active

# 公 司 简 介

赛尔特电子有限公司（以下简称 SETfuse）是一家设计、制造电路保护元器件与提供电路综合保护解决方案的公司，致力于创新的过温保护、过电流保护、过电压保护、主动保护、组合保护的技术研究，帮助客户提高其产品的安全指数。

SETfuse 为工业、消费电子、新能源和高可靠性市场开发、制造、销售产品。提供业界领先的温度保险丝(TCO)、压敏电阻 (MOV)、热保护型压敏电阻 (TFMOV)、电涌保护器 (SPD)、线绕熔断电阻器 (RXF)、热保护型熔断电阻器 (TRXF)、电流保险丝 (FUSE)、主动熔断器(iTCO)，以及适配器保护单元 (PUA) 等产品。

## 产品与品质

SETfuse 拥有 17 年创新的历史并获得多项专利。突破性的创新设计、工艺，自动化生产，让我们的产品在业界处于领先地位。我们拥有美国 UL 授权的 UL 1449, UL 60691 标准目击测试实验室 (WTDP)，专业的测试设备和完备的质量 (ISO9001)、环境 (ISO14001)、职业健康安全 (OHSAS18000) 管理体系，产品满足 RoHS、REACH 要求，取得 CCC、UL、CUL、VDE、TUV、PSE、KTL 安规认证。严苛的品质管控方法，成就了 SETfuse 值得信赖的高品质产品。

## 企业责任

SETfuse 的产品销往全球市场。我们深知这意味着我们有更多的社会责任。我们提供安全的工作场所与环境，并确保遵守法规。

## 客户关系

SETfuse 的产品在电路保护领域发挥着举足轻重的作用，我们致力于创建和维护卓越的客户关系。从产品设计、制造到专业的客户服务和支持，我们知道什么对您很重要。

关于赛尔特电子有限公司的更多信息，我们真诚的感谢您访问公司网站：[www.SETfuse.com](http://www.SETfuse.com)。

# Company Profile

SETfuse is a company which is engaged in Designing and Manufacturing Circuit Protection Components and Providing Integrated Circuit Protection Solutions. SETfuse is specialized in the innovative protection fields of Over Temperature Protection, Over Current Protection, Over Voltage Protection, Active Protection and Multiple Protection, helping customers to improve the safety index of their products.

SETfuse Develops, Manufactures and Sells the products to the High Reliability markets of Industry, Electronic, New Energy and so on. It offers industry-leading Thermal-link (TCO), Metal Oxide Varistor (MOV), Thermal Fuse & MOV(TFMOV), Surge Protection Device (SPD), Wirewound Fusing Resistor (RXF), Thermal-link & Fusing Resistor (TRXF), Current Fuse (Fuse), Ideal Thermal Fuse (iTCO) and Protective Unit for Adaptor (PUA).

## Product and Quality

SETfuse has 17 years innovative history and obtains a lot of patents. Breakthrough Innovation Design, Manufacturing Process and Automatic production put our products in a leading position in the industry. SETfuse has set up the UL authorized Lab under UL 1449 Standard and the Witness Test Data Program (WTDP) Lab under UL 60691 Standard. Professional Testing Equipment and perfect Quality (ISO9001), Environment (ISO14001), Occupational Health and Safety (OHSAS18000) management system make the products comply with RoHS and REACH. SETfuse's products are component-recognized in China as well as internationally by organizations such as CCC, UL, CUL, VDE, TUV, PSE and KTL. The stringent quality control method ensures the products with High Quality and Reliability.

## Corporate Responsibility

SETfuse sells products all over the world. This means that we have more social responsibility. We offer and guarantee safe workplace and environment, to comply with laws and regulations.

## Customer Relations

SETfuse's products are very important in the circuit protection field, we are committed to set up and maintain the excellent customer relations.

For more information about SETfuse, Welcome to our website: [www.SETfuse.com](http://www.SETfuse.com)

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Xiamen SET Electronics Co., Ltd.



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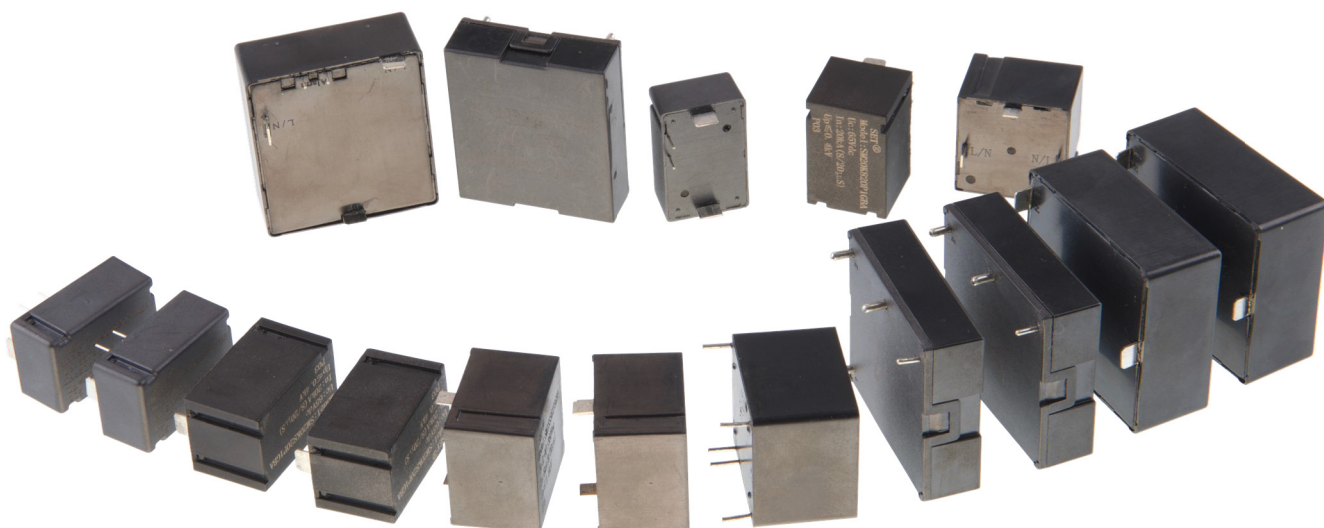
自动化生产线 Automatic Production Line

专注

**FOCUS**

专业

**PROFESSIONAL**



## 产品特点 FEATURES AND BENEFITS

- |               |  |
|---------------|--|
| ● 专利产品        | PATENTED PRODUCT                         |
| ● 体积小型化       | MINIATURIZED SIZE                        |
| ● PCB板卧式安装    | HORIZONTAL MOUNTING ON PCB               |
| ● 具有差模、共模保护功能 | DIFFERENTIAL AND COMMON MODE PROTECTIONS |
| ● 环保型产品       | RoHS & REACH COMPLIANT                   |

电涌保护模组特征与型号概览  
SPD (Surge Protective Device) Module Feature & Model List Overview

			P303	P304	P295/296	P297/298	P299/300	P301/302	页码 Page		
额定电压 Rated Voltage $U_n$ (V)	690V	600V							750	1000	
									680	895	
	480V								625	825	
									550	745	
	400V								510	670	
	347V						SM34S751P1GBB		460	615	
							SM34S681P1GBB		420	560	
			SM8S621P3NBB	SM10S621P3NBB	SM15S621P3*BB		SM34S621P1GBB		385	505	
		254-277V	SM8S561P3NBB	SM10S561P3NBB	SM15S561P3*BB		SM34S561P1GBB	SM34S561P2*B#	350	460	
			SM8S511P3NBB	SM10S511P3NBB	SM15S511P3*BB		SM34S511P1GBB	SM34S511P2*B#	320	415	
			SM8S471P3NBB	SM10S471P3NBB	SM15S471P3*BB		SM34S471P1GBB	SM34S471P2*B#	300	385	
			SM8S431P3NBB	SM10S431P3NBB	SM15S431P3*BB		SM34S431P1GBB	SM34S431P2*B#	275	350	
									250	320	
		120-130V							230	300	
									210	275	
									190	250	
			SM8S271P3NBB	SM10S271P3NBB	SM15S271P3*BB			SM34S271P2*B#	175	225	
			SM8S241P3NBB	SM10S241P3NBB	SM15S241P3*BB		SM34S241P1GBB	SM34S241P2*B#	150	200	
		110V	SM8S221P3NBB	SM10S221P3NBB	SM15S221P3*BB			SM34S221P2*B#	140	180	
			SM8S201P3NBB	SM10S201P3NBB	SM15S201P3*BB			SM34S201P2*B#	130	170	
									115	150	
		60V							95	125	
		48V	60V			SM15S121P3*BB	SM20K121P1*BA	SM34S121P1GBB		75	100
						SM15S101P3*BB	SM20K101P1*BA	SM34S101P1GBB	SM34S101P2*B#	60	85
	36V	48V			SM15S820P3*BB	SM20K820P1*BA	SM34S820P1GBB	SM34S820P2*B#	50	65	
						SM20K680P1*BA	SM34S680P1GBB	SM34S680P2*B#	40	56	
	24V	24V					SM34S560P1GBB		35	45	
							SM34S470P1GBB		30	38	
	12V	12V							25	31	
									20	26	
									17	22	
	AC	DC	2	3	5	20	20	20	AC	DC	
标称放电电流 Nominal Discharge Current $I_n$ (kA)											

最大持续工作电压 Maximum Continuous Operating Voltage  $U_c$  (V)

型号Model NO.

标称放电电流 Nominal Discharge Current  $I_n$  (kA)

注 Notes:  
\*可能是: G或N. May be followed by G or N.  
#可能是: B或A. May be followed by B or A.

产品简介 Product Description

赛尔特公司的电涌保护模组集成热保护、过电压保护、遥信等功能。单个模组可以满足共模、差模或全模模式的防护要求，适用于低压单相交流或直流供电的设备中进行电涌防护；集成化的方案方便用户设计、安装；相对于单独组件的应用，可以有效降低电涌防护器件的占板面积，节约空间；密闭的热保护装置提高了产品的环境适应能力，广泛应用于宽温度范围（-40 - 85）℃或者（-40 - 105）℃和高湿度（≤95%RH）环境。

SET's SPD Module Integrates Over Temp. Protection, Over Voltage Protection and Remote Signal Indication functions. Each single module can be Common Mode Protection, Differential Mode Protection or All-mode Protection. It is mainly applicable for low voltage single phase AC or DC power system. The Integrated Structure of SPD is convenient for users to Design and Install. Compared with the discrete SPD assemblies, SET's SPD Module is more Space Saving. The enclosed space of thermal protection can improve the suitability for environment, widely available for Ambient Temperature Range ( -40 - 85)°C or ( -40 - 105)°C and Humidity Range (≤95%RH).

专利 PATENTS

名称 Patent Name	区域 Region	专利类别 Category	专利号 Patent NO.
一种直流电路的过压保护模组 An Over-voltage Protection Module for DC Circuit	中国 China	实用新型 Utility Model	ZL 201120232550.8
一种交流电路的全模过压保护模组 An All-mode Over-voltage Protection Module for AC Circuit	中国 China	实用新型 Utility Model	ZL 201120560110.5

## 术语 Glossary

1.2/50  $\mu$ s电压波形 1.2/50  $\mu$ s Voltage Wave

开路情况下，视在波前时间为1.2  $\mu$ s，且半峰值时间为50  $\mu$ s的浪涌电压。

Voltage surge with a virtual front time of 1.2  $\mu$ s and a time to half-value of 50  $\mu$ s delivered across an open circuit.

— (UL 1449)

8/20  $\mu$ s 电流波形 8/20  $\mu$ s Current Wave

短路情况下，视在波前时间为8  $\mu$ s，且半峰值时间为20  $\mu$ s的浪涌电流。

Current surge with a virtual front time of 8  $\mu$ s and a time to half-value of 20  $\mu$ s delivered into a short circuit.

— (UL 1449)

## 组合波 Combination Wave

组合波（也称浪涌组合）由冲击发生器产生，开路时施加

1.2/50  $\mu$ s冲击电压，短路时施加8/20  $\mu$ s冲击电流。实际发生波形取决于发生器的虚拟阻抗。

A surge delivered by a generator which has the inherent capability of applying a 1.2/50  $\mu$ s voltage wave across an open circuit, and delivering an 8/20  $\mu$ s current wave into a short circuit. The exact wave that is delivered is determined by the generator's fictive impedance .

— (UL 1449)

## 最大持续工作电压 Maximum Continuous Operating Voltage (MCOV)

持续施加在SPD上的工频电压的均方根（r.m.s. / 有效值）的最大值。

The maximum designated root-mean-square (r.m.s.) value of the power frequency voltage that may be continuously applied to the mode of protection of an SPD.

— (UL 1449)

## 额定短路电流 Short Circuit Current Rating (SCCR)

在规定电压下，SPD流过预期短路电流的能力。

The suitability of an SPD for use on an AC power circuit that is capable of delivering not more than a declared rms symmetrical current at a declared voltage during a short circuit condition.

— (UL 1449)

## 故障电流 Fault Current

短路故障时电源流出的电流。

The current from the connected power system that flows in a short circuit.

— (UL 1449)

标称放电电流 Nominal Discharge Current ( $I_n$ )

由厂家给出的，SPD在经过15次8/20  $\mu$ s电流浪涌冲击后无损坏的电流峰值。

Peak value of the current, selected by the manufacturer, through the SPD having a current wave shape of 8/20  $\mu$ s where the SPD remains functional after 15 surges.

— (UL 1449)

最大放电电流 Maximum Discharge Current ( $I_{max}$ )

流过SPD，具有为8/20  $\mu$ s波形电流的峰值，其峰值大小由厂家规定， $I_{max}$  应大于  $I_n$ 。

Crest value of a current through the SPD having an 8/20  $\mu$ s waveform and magnitude is specified by manufacturer,  $I_{max}$  is greater than  $I_n$ .

— (UL 1449)

## 系统电压 Nominal System Voltage

依照标准ANSI C84.1表1，一定电压等级的指定系统的标称值。基于本标准的目的，标称系统电压包括，但不仅限于交流电压120、208、240、277、347、480和600 Vac范围内。

A nominal value assigned to designate a system of a given voltage class in accordance with ANSI C84.1, Table 1. For the purpose of this standard, nominal system voltages include, but are not limited to 120, 208, 240, 277, 347, 480, 600 Vac.

— (ANSI C84.1)

## 浪涌 Surge

电路中，电流、电势或能量的瞬间波动。基于本标准，电涌不包括在几个周期内升高的工频电压产生的瞬态过电压。

A transient wave of current, potential or power in an electric circuit. For the purposes of this standard, surges do not include Temporary Over Voltage (TOV) consisting of an increase in the power frequency voltage for several cycles.

— (UL 1449)

## 保护模式 Modes of Protection

SPD保护元件可以连接在相对相、相对地、相对中线、中线对地及其组合。这些连接方式称作保护模式。

Electrical paths where the SPD offers defense against transient over voltage. Examples include, Line to Neutral (L-N), line to Ground (L-G), Line to Line (L-L) and Neutral to Ground (N-G).

— (UL 1449)

注：地线可缩写为“G”或者“PE”

Note: Ground abbreviated G or PE.

## 术语 Glossary

## 电涌保护器 Surge Protective Device (SPD)

用于限制瞬态过电压和泄放电涌电流的电器，它至少包含一个非线性的元件。

Device that contains at least one nonlinear component that is intended to limit surge voltages and divert surge currents.  
NOTE: An SPD is a complete assembly, having appropriate connecting means.

— (UL 1449)

## 实测限制电压 Measured Limiting Voltage

施加一个指定波形和幅值的脉冲，在引脚、端子、插座连接处和类似地方测得电压最大幅值。

The maximum magnitude of voltage, measured at the leads, terminals, receptacle contacts, and similar locations after the application of an impulse of specified wave shape and amplitude.

— (UL 1449)

## 电压保护等级 Voltage Protection Rating (VPR)

依据表79.1每种保护都有相应的额定值。表79.1中所标出的测量限制电压的较大VPR值是由6 kV, 3 kA组合波发生器所做的瞬态电压浪涌抑制试验时，产生的限制电压测试值的平均值中较大的值。

A rating selected from a list of preferred values as given in Table 79.1 and assigned to each mode of protection. The value of VPR is determined as a higher value taken from Table 79.1 to the average measured limiting voltage determined during the first set of measured limiting voltages tests during the transient-voltage surge suppression test using the combination wave generator at a setting of 6 kV, 3 kA.

— (UL 1449)

额定电流 Rated Current ( $I_n$ )

允许用于电路并安全断开的最大电流。

The current used to classify a Thermal-link, which is the Maximum voltage that Thermal-link allows to carry and is able to cut off the circuit safely .

— (UL 1449)

## 两端口SPD Two-port SPD

同时具有连接交流电源用接口（如端子，引脚，插头）和连接交流负载用的接口（如端子，引脚，插座）。最少具有两个以上接口的SPD视为双端口SPD，并以双端口SPD进行测试。

An SPD having provisions (terminals, leads, plug) for connection to the ac power circuit and provisions [terminals, leads, receptacles (s)] for supplying current to one or more ac power loads. SPDs provided with a minimum of two adjacent terminals for each circuit conductor may be considered and tested as a two-port SPD.

— (UL 1449)

电压保护水平 Voltage Protection Level ( $U_p$ )

表征SPD限制接线端子间电压的性能参数，该值应大于限制电压的最高值。

— (GB 18802.1)

Maximum voltage to be expected at the SPD terminals due to an impulse stress with defined voltage steepness and an impulse stress with a discharge current with given amplitude and wave shape.

— (IEC 61643)

开路电压 Open Circuit Voltage ( $U_{oc}$ )

在组合波发生器连接试品端口处的开路电压。

— (GB 18802.1)

Open circuit voltage of the combination wave generator at the point of connection of the device under test.

— (IEC 61643)

## 外壳防护等级 Degree of Protection Provided by Enclosure (IP Code)

外壳提供的防止触及危险的部件、防止外界的固体异物进入和/或防止水的进入壳内的防护程度。

— (GB 4208)

Classification preceded by the symbol IP indicating the extent of protection provided by an enclosure against access to hazardous parts, against ingress of solid foreign objects and possibly harmful ingress of water.

— (IEC 60529)



## 注意事项 ATTENTION

## 使用 Usage

1. 交流频率在47 Hz和63 Hz之间。

Frequency range is from 47 Hz to 63 Hz .

2. 持续施加在电涌保护模组上的电压不应超过其最大连续工作电压 $U_c$ 。

The voltage applied continuously to the SPD Module must not exceed its maximum continuous operating voltage  $U_c$ .

3. 气压在80 kPa 到106 kPa，对应海拔为+2000 m至-500 m。

When air pressure is from 80 kPa to 106 kPa, the related altitude shall be from +2000 m to -500 m.

4. 通电情况下请勿直接触碰本体或引脚，防止触电。

Do not touch the product body or pins directly when power is on, to avoid electric shock.

## 更换 Replacement

电涌保护模组是不可修复的产品，基于安全原因，替换时应使用同类别同型号的产品。

As SPD module is a non-repairable product, for safety sake, please use the same type of SPD module for replacement.

## 贮存 Storage

电涌保护模组的贮存应避免高温、高湿、日光直射和腐蚀性气体的场合，以免影响引脚可焊性，产品购入后请于1年内使用完。

Please store the SPD module without high temperature, high humidity or corrosive gas. To avoid reducing the solderability of the pins, please use them up within 1 year after receiving the goods.

## 安装 Installation

### 机械应力 Mechanical Stress

安装过程和安装后不宜对电涌保护模组本体施加机械应力。

Do not apply mechanical stress to the SPD Module body during or after the installation.

### 安装位置 Installation Position

勿将电涌保护模组安装在经常出现剧烈振动的地方。

Do not install SPD module on the place which often suffer severe vibration.

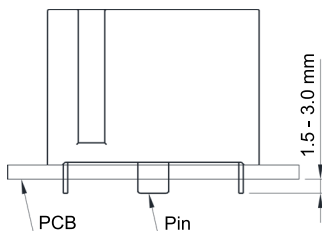
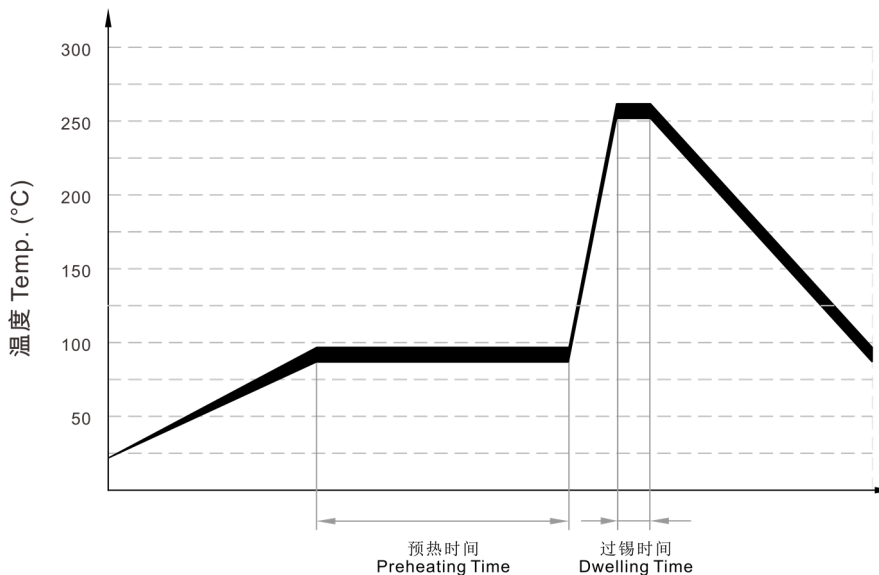
### 焊接参数 Soldering Parameters

#### 波峰焊参数 Wave-Soldering Parameters

本波峰焊参数仅供参考，实际使用时应做相关的试验进行验证。

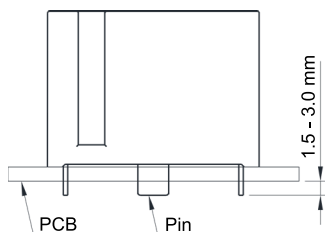
The Wave Soldering Parameters are for reference only. Before SPD module is for practice usage, relative validation is recommended.

波峰焊曲线 Wave Soldering Curve



项目 Items	温度 Temp. (°C)	时间 Time (s)
预热 Preheating	80 - 90	60 - 150
过锡 Dwelling	260±5	2 - 4

#### 推荐的手工焊参数 Recommended Hand-Soldering Parameters

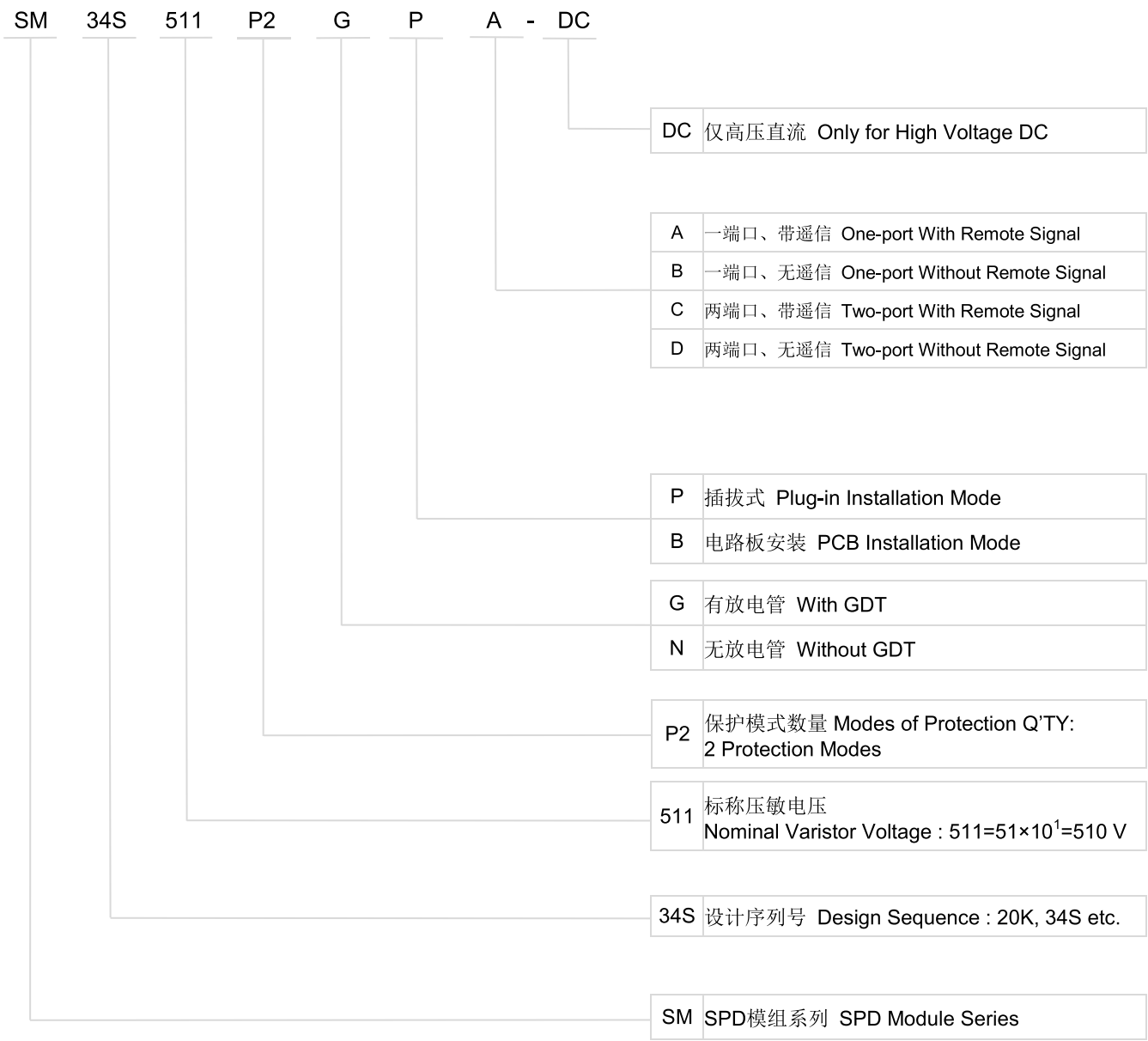


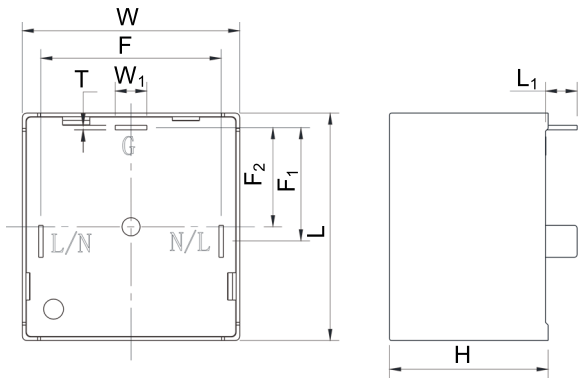
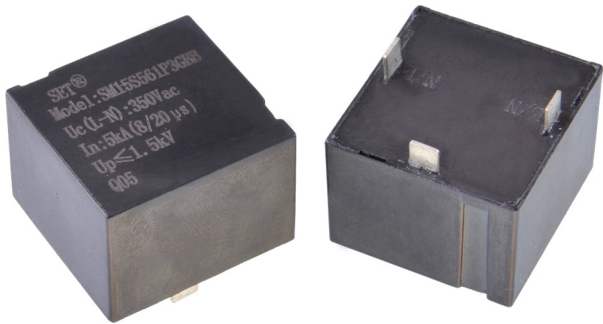
烙铁温度 Solder Iron Temp.: (350±5) °C

加热时间 Heating Time:  $t \leq 4$  s



型号说明 Part Number System





尺寸 Dimensions (mm)

L	L <sub>1</sub>	W	W <sub>1</sub>	H	T	F	F <sub>1</sub>	F <sub>2</sub>
25.0±1.0	3.5±1.0	24.0±1.0	3.5±0.5	17.6±1.0	0.50±0.05	20.0±1.0	12.5±1.0	11.0±1.0

关键特性 Key Features

- 通过UL 1449 Type 4CA认证  
Recognized by UL 1449 as Type 4CA
- 使用条件: 温度(-40 - 105) °C, 相对湿度≤95%  
Operating Conditions: Temp. (-40 - 105) °C, RH≤95%
- 参照IEC / EN 61643-11 T2 认证  
Designed to IEC / EN 61643-11 T2
- 小体积  
Miniaturized Size

应用领域 Applications

- 电涌保护器 Surge Protective Device (SPD)
- 工业电源 Industrial Power Supply
- 通讯电源 Telecom Power
- 不间断电源 Uninterruptable Power Supply (UPS)
- 电动汽车充电桩 Electric Vehicle Charging Pole

产品原理图 Product Schematics

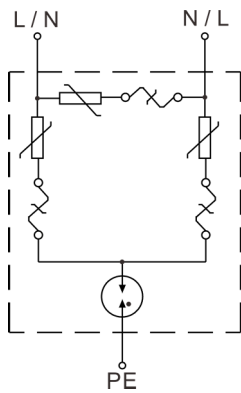


Fig. 1

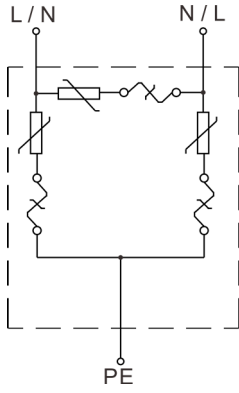
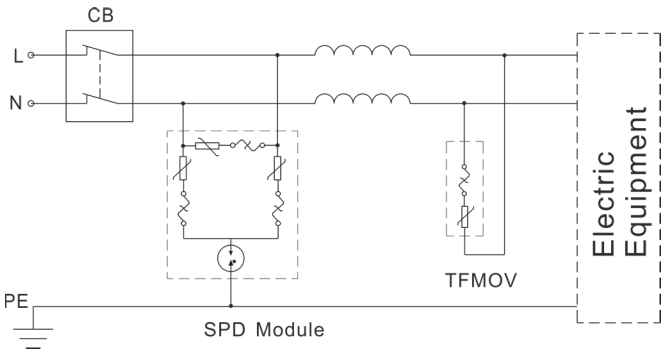




Fig. 2

产品应用图 Installation Guide



技术参数 Specifications

型号 Model	最大连续 工作电压 Max. Continuous Operating Voltage		标称放电 电流 Nominal Discharge Current (8/20 μs)	最大放电 电流 Max. Discharge Current (8/20 μs)	电压保护 水平 Voltage Protection Level	响应时间 Response Time	外部过流 保护 <sup>a</sup> External Overcurrent Protection	产品 原理图 Product Schematics	安规认证 Agency Approvals	
	$U_c$		$I_n$	$I_{max}$	$U_p$					
	(Vac)	(Vdc)	(kA)	(kA)	(V)				UL, CUL	TUV
SM15S820P3NBB	50	65	2.5	5	400	<25	10	Fig. 2		
SM15S820P3GBB	50	65	2.5	5	400	<100	10	Fig. 1		
SM15S101P3NBB	60	85	2.5	5	400	<25	10	Fig. 2		
SM15S101P3GBB	60	85	2.5	5	400	<100	10	Fig. 1		
SM15S121P3NBB	75	100	2.5	5	500	<25	10	Fig. 2		
SM15S121P3GBB	75	100	2.5	5	500	<100	10	Fig. 1		
SM15S201P3NBB	130	170	5	10	800	<25	10	Fig. 2	●	
SM15S201P3GBB	130	170	5	10	800	<100	10	Fig. 1	●	
SM15S221P3NBB	140	180	5	10	800	<25	10	Fig. 2	●	
SM15S221P3GBB	140	180	5	10	800	<100	10	Fig. 1	●	
SM15S241P3NBB	150	200	5	10	800	<25	10	Fig. 2	●	
SM15S241P3GBB	150	200	5	10	800	<100	10	Fig. 1	●	
SM15S271P3NBB	175	225	5	10	800	<25	10	Fig. 2	●	
SM15S271P3GBB	175	225	5	10	800	<100	10	Fig. 1	●	
SM15S471P3NBB	300	385	5	10	1200	<25	10	Fig. 2	●	
SM15S471P3GBB	300	385	5	10	1200	<100	10	Fig. 1	●	
SM15S511P3NBB	320	415	5	10	1500	<25	10	Fig. 2	●	
SM15S511P3GBB	320	415	5	10	1500	<100	10	Fig. 1	●	
SM15S561P3NBB	350	460	5	10	1500	<25	10	Fig. 2	●	
SM15S561P3GBB	350	460	5	10	1500	<100	10	Fig. 1	●	●
SM15S621P3NBB	385	505	5	10	1500	<25	10	Fig. 2	●	
SM15S621P3GBB	385	505	5	10	1500	<100	10	Fig. 1	●	●

<sup>a</sup>: 推荐外部过流保护装置断路器型号: C 10 A, 曲线C (单独设置或主回路中)。  
Recommended External Circuit Breaker Model: C 10 A, Curve C (Individually Set or Main Circuit).

执行标准 Designed to Standards

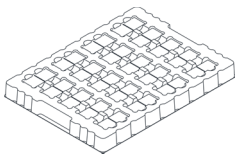
- UL 1449 Fourth Edition
- IEC / EN 61643-11

认证信息 Agency Information

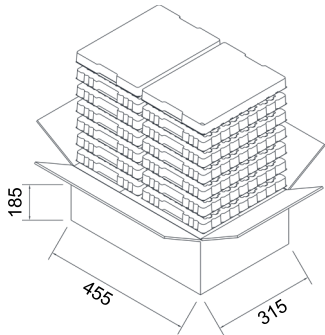
- UL / CUL E322662
- TUV J 50354525

包装信息 Packaging Information

每个吸塑盘产品数量  
Each Blister Plate: 40 PCS

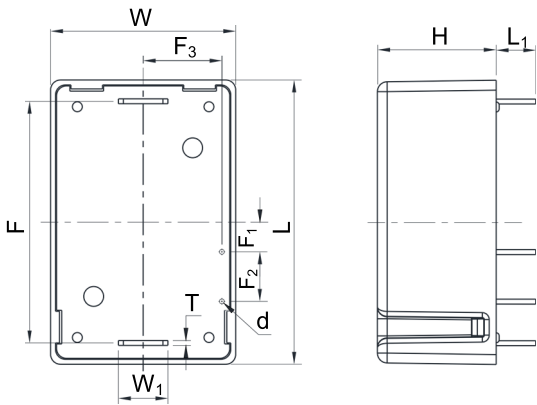


每箱吸塑盘数量  
Each Carton: 14 Blister Plates



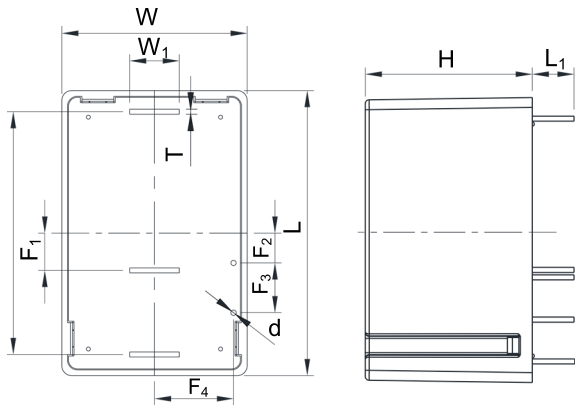
- 单位 Unit:mm;
- 每箱具体数量请以规格书为准。  
Please refer to the specifications for the packaging details.

SM20K\*\*\*P1N 尺寸 Dimensions (mm)



L	L <sub>1</sub>	W	W <sub>1</sub>	H	T	d	F	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>
28.5±1.0	4.0±1.0	18.5±1.0	5.0±0.5	12.0±1.0	0.50±0.05	Φ0.50±0.05	24.4±1.0	3.0±1.0	5.0±1.0	8.0±1.0

SM20K\*\*\*P1G 尺寸 Dimensions (mm)



L	L <sub>1</sub>	W	W <sub>1</sub>	H	T	d	F	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>
28.5±1.0	4.0±1.0	18.5±1.0	5.0±0.5	17.0±1.0	0.50±0.05	Φ0.50±0.05	24.4±1.0	4.0±1.0	3.0±0.5	5.0±1.0	8.0±1.0

关键特性 Key Features

- 参照UL 1449 Type 4CA 设计  
Designed to UL 1449 Type 4CA
- 使用条件: 温度(-40 - 105) °C, 相对湿度≤95%  
Operated Conditions: Temp. (-40 - 105) °C, RH≤95%
- 故障指示可选  
Failure Indication Optional
- 小体积  
Miniaturized Size
- 带热保护功能  
With Thermal Protection Function

应用领域 Applications

- 通讯电源      Telecom Power
- 网络设备      Network Equipment

产品原理图 Product Schematics

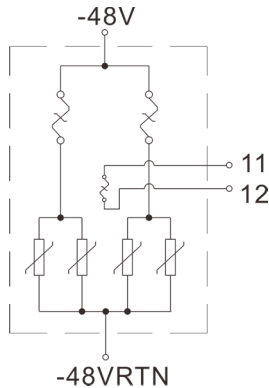


Fig. 3

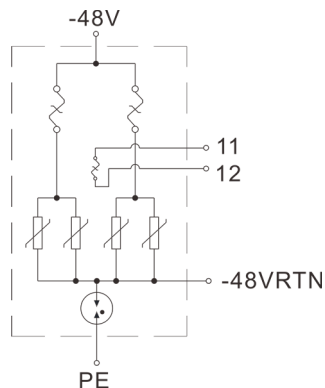


Fig. 4

技术参数 Specifications

型号 Model	最大连续 工作电压 Max. Continuous Operating Voltage		标称放电电流 Nominal Discharge Current (8/20 μs)	电压保护水平 Voltage Protection Level	响应时间 Response Time	外部过流保护 <sup>a</sup> External Overcurrent Protection	产品 原理图 Product Schematics
	U <sub>c</sub>		I <sub>n</sub>	U <sub>p</sub>			
	(Vac)	(Vdc)	(kA)	(V)			
SM20K680P1NBA	40	56	20	350	<25	16	Fig. 3
SM20K820P1NBA	50	65	20	400	<25	16	Fig. 3
SM20K101P1NBA	60	85	20	400	<25	16	Fig. 3
SM20K121P1NBA	75	100	20	450	<25	16	Fig. 3
SM20K680P1GBA	40	56	20	350	<100	16	Fig. 4
SM20K820P1GBA	50	65	20	400	<100	16	Fig. 4
SM20K101P1GBA	60	85	20	400	<100	16	Fig. 4
SM20K121P1GBA	75	100	20	450	<100	16	Fig. 4

<sup>a</sup>: 推荐外部过流保护装置断路器型号: C 16 A, 曲线C (单独设置或主回路中)。  
Recommended External Circuit Breaker Model: C 16 A, Curve C (Individually Set or Main Circuit).

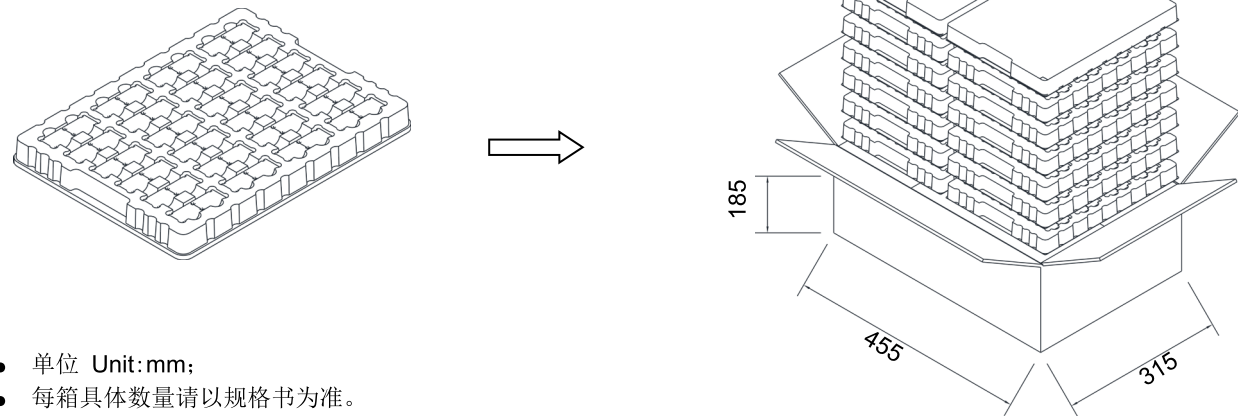
执行标准 Refer to Standards

- UL 1449 Fourth Edition
- IEC / EN 61643-11

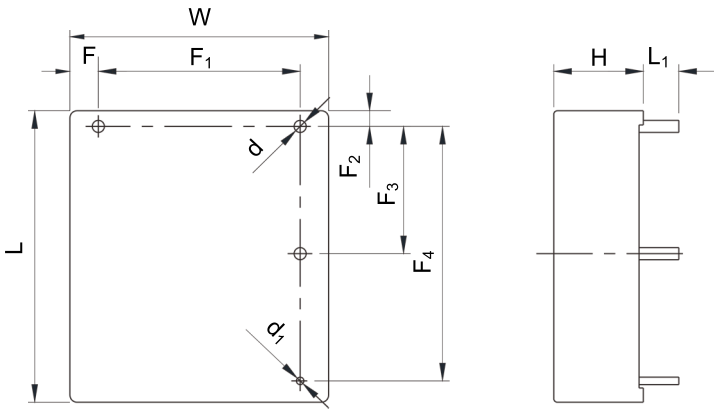
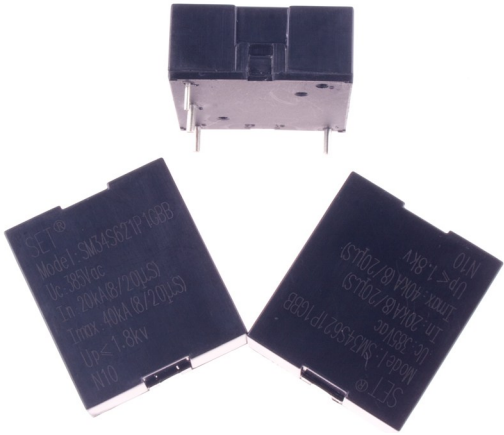
包装信息 Packaging Information

每个吸塑盘产品数量  
Each Blister Plate: 48 PCS

每箱吸塑盘数量  
Each Carton: 14 Blister Plates



- 单位 Unit:mm;
- 每箱具体数量请以规格书为准。  
Please refer to the specifications for the packaging details.



尺寸 Dimensions (mm)

L	L <sub>1</sub>	W	d	d <sub>1</sub>	F	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>
41.0±1.0	5.0±1.0	36.4±1.0	Φ1.7±0.1	Φ1.05±0.05	4.0±0.5	28.4±1.0	2.2±0.5	18.0±1.0	36.0±1.0
标称压敏电压 Nominal Varistor Voltage			470 - 121	241 - 271	431- 511	561 - 751			
H			12.6±0.5	13.6±0.5	14.6±0.5	16. 0±0.5			

关键特性 Key Features

- PCB板安装，产品厚度≤17 mm  
Suitable for PCB Installation, Product Thickness≤17 mm
- 使用条件：温度(-40 - 105) °C，相对湿度≤95%  
Operating Conditions: Temp. (-40 - 105) °C, RH≤95%
- 用于TT与TN系统“1+1”电路  
Suitable for TT&TN System, “1+1” Circuit Design

应用领域 Applications

- 通讯电源 Telecom Power
- 不间断电源 Uninterruptable Power Supply (UPS)

产品原理图 Product Schematics

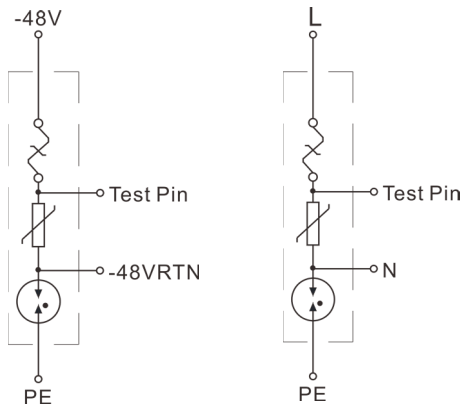
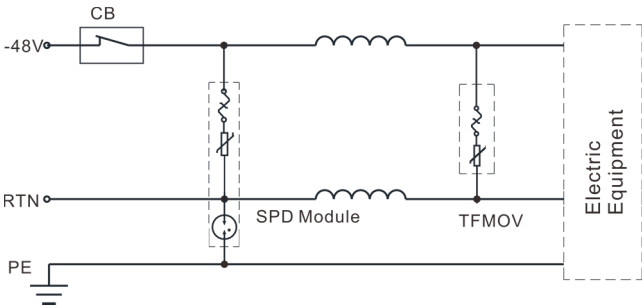



Fig. 5

Fig. 6

产品应用图 Installation Guide



技术参数 Specifications

型号 Model	最大连续 工作电压 Max. Continuous Operating Voltage		标称放电 电流 Nominal Discharge Current (8/20 μs)	最大放电 电流 Max. Discharge Current (8/20 μs)	电压保护 水平 Voltage Protection Level	响应时间 Response Time	耐受电流 等级 Level of Limited Current	外部过流 保护 <sup>a</sup> External Overcurrent Protection	产品原理图 Product Schematics	安规认证 Agency Approvals
	$U_c$	$U_c$	$I_n$	$I_{max}$	$U_p$					
	(Vac)	(Vdc)	(kA)	(kA)	(V)					
SM34S470P1GBB	30	38	10	20	220	<100	50	32	Fig. 5	 TUV
SM34S680P1GBB	40	56	10	20	220	<100	50	32	Fig. 5	
SM34S820P1GBB	50	65	15	30	330	<100	50	32	Fig. 5	
SM34S101P1GBB	60	85	15	30	330	<100	50	32	Fig. 5	●
SM34S121P1GBB	75	100	15	30	400	<100	50	32	Fig. 5	●
SM34S241P1GBB	150	200	20	40	600	<100	–	32	Fig. 6	
SM34S431P1GBB	275	350	20	40	1000	<100	–	32	Fig. 6	
SM34S471P1GBB	300	385	20	40	1200	<100	–	32	Fig. 6	
SM34S511P1GBB	320	415	20	40	1200	<100	–	32	Fig. 6	
SM34S561P1GBB	350	460	20	40	1500	<100	–	32	Fig. 6	
SM34S621P1GBB	385	505	20	40	1500	<100	–	32	Fig. 6	
SM34S751P1GBB	460	615	20	40	1800	<100	–	32	Fig. 6	

<sup>a</sup>: 推荐外部过流保护装置断路器型号: C 32 A, 曲线C (单独设置或主回路中)。  
Recommended External Circuit Breaker Model: C 32 A, Curve C (Individually Set or Main Circuit).

执行标准 Designed to Standards

- UL 1449 Fourth Edition
- IEC / EN 61643-11

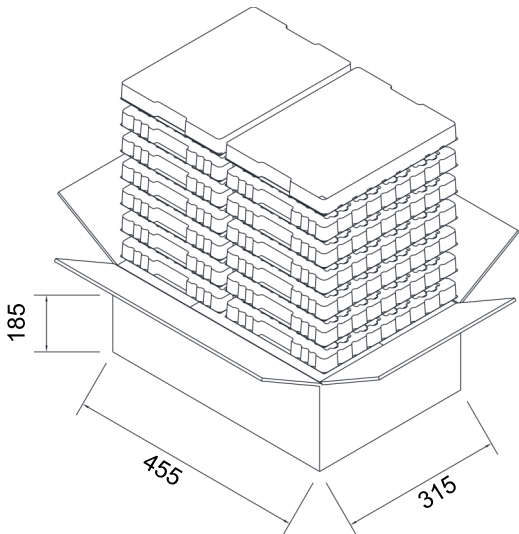
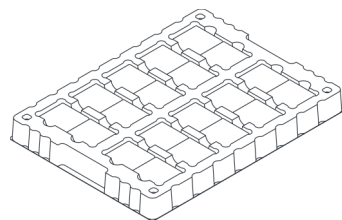
认证信息 Agency Information

TUV J 50369231

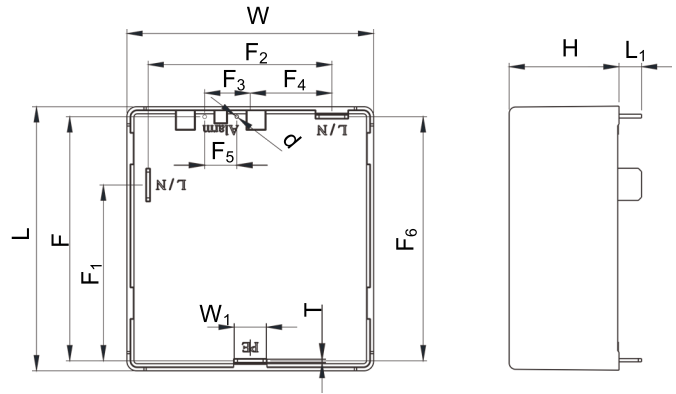
包装信息 Packaging Information

每个吸塑盘产品数量  
Each Blister Plate: 20 PCS

每箱吸塑盘数量  
Each Carton: 14 Blister Plates



- 单位 Unit:mm;
- 每箱具体数量请以规格书为准。  
Please refer to the specifications for the packaging details.



尺寸 Dimensions (mm)

L	L <sub>1</sub>	W	W <sub>1</sub>	H	T	d	F	F <sub>1</sub>
41.0±1.0	3.5±1.0	38.5±1.0	5.0±0.5	17.0±1.0	0.50±0.05	Φ0.5±0.1	38.0±1.0	27.5±1.0
F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>	F <sub>5</sub>	F <sub>6</sub>				
28.6±1.0	7.0±1.0	13.0±1.0	5.0±1.0	38.0±1.0				

### 关键特性 Key Features

- 通过UL 1449 Type 4CA认证  
Recognized by UL 1449 as Type 4CA
- 参照IEC / EN 61643-11 T2 认证  
Designed to IEC / EN 61643-11 T2
- 故障指示可选  
Failure Indication Optional
- 小体积  
Miniaturized Size
- 使用条件: 温度(-40 - 105) °C, 相对湿度≤95%  
Operating Conditions: Temp. (-40 - 105) °C, RH≤95%

### 应用领域 Applications

- 电涌保护器 Surge Protective Device (SPD)
- 工业电源 Industrial Power Supply
- 通讯电源 Telecom Power
- 不间断电源 Uninterruptable Power Supply (UPS)
- 电动汽车充电桩 Electric Vehicle Charging Pole

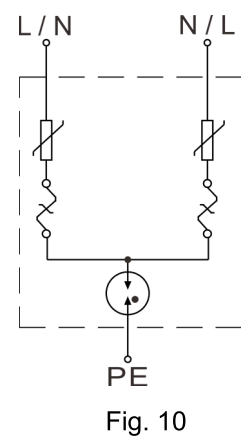
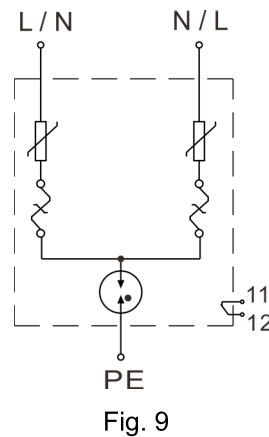
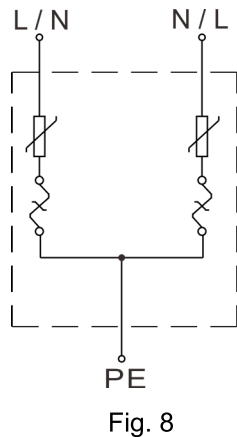
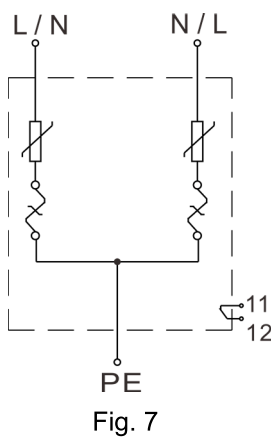
### 执行标准 Designed to Standards

- UL 1449 Fourth Edition
- IEC / EN 61643-11

### 认证信息 Agency Information



- UL / CUL E322662
- TUV J 50347206

### 产品原理图 Product Schematics





技术参数 Specifications

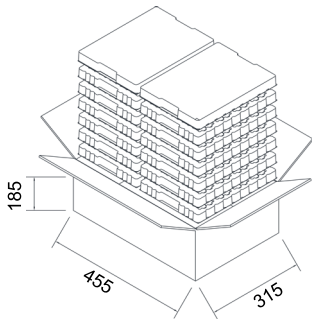
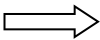
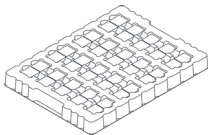
型号 Model	最大连续 工作电压 Max. Continuous Operating Voltage		标称放电 电流 Nominal Discharge Current (8/20 μs)	最大放电 电流 Max. Discharge Current (8/20 μs)	电压保护 水平 Voltage Protection Level	响应时间 Response Time	外部过流 保护 <sup>a</sup> External Over- current Protection	产品原理图 Product Schematics	安规认证 Agency Approvals	
	$U_c$		$I_n$	$I_{max}$	$U_p$					
	(Vac)	(Vdc)	(kA)	(kA)	(V)				UL, CUL	TUV
SM34S680P2GB*	40	56	10	20	400	<100	32	Fig. 9 / 10		
SM34S820P2GB*	50	65	15	30	400	<100	32	Fig. 9 / 10		
SM34S101P2GB*	60	85	15	30	500	<100	32	Fig. 9 / 10		
SM34S201P2GB*	130	170	20	40	500	<100	32	Fig. 9 / 10	●	
SM34S221P2GB*	140	180	20	40	800	<100	32	Fig. 9 / 10	●	
SM34S241P2GB*	150	200	20	40	800	<100	32	Fig. 9 / 10	●	
SM34S271P2GB*	175	225	20	40	800	<100	32	Fig. 9 / 10	●	
SM34S431P2GB*	275	350	20	40	1500	<100	32	Fig. 9 / 10	●	●
SM34S471P2GB*	300	385	20	40	1500	<100	32	Fig. 9 / 10	●	●
SM34S511P2GB*	320	415	20	40	1500	<100	32	Fig. 9 / 10	●	●
SM34S561P2GB*	350	460	20	40	1500	<100	32	Fig. 9 / 10	●	
SM34S680P2NB*	40	56	10	20	400	<25	32	Fig. 7 / 8		
SM34S820P2NB*	50	65	15	30	400	<25	32	Fig. 7 / 8		
SM34S101P2NB*	60	85	15	30	500	<25	32	Fig. 7 / 8		
SM34S201P2NB*	130	170	20	40	500	<25	32	Fig. 7 / 8	●	
SM34S221P2NB*	140	180	20	40	800	<25	32	Fig. 7 / 8	●	
SM34S241P2NB*	150	200	20	40	800	<25	32	Fig. 7 / 8	●	
SM34S271P2NB*	175	225	20	40	800	<25	32	Fig. 7 / 8	●	
SM34S431P2NB*	275	350	20	40	1500	<25	32	Fig. 7 / 8	●	
SM34S471P2NB*	300	385	20	40	1500	<25	32	Fig. 7 / 8	●	
SM34S511P2NB*	320	415	20	40	1500	<25	32	Fig. 7 / 8	●	
SM34S561P2NB*	350	460	20	40	1500	<25	32	Fig. 7 / 8	●	

<sup>a</sup>: 推荐外部过流保护装置断路器型号: C 32 A, 曲线C (单独设置或主回路中)。  
Recommended External Circuit Breaker Model C 32 A, Curve C (Individually Set or Main Circuit).  
\*: 可能是A或者B May be A or B.

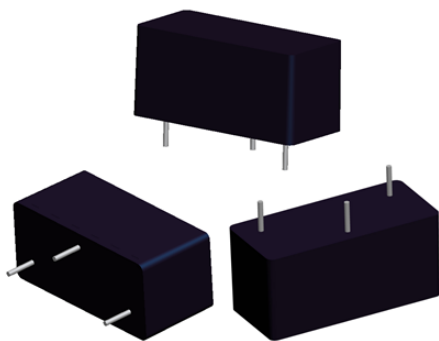
包装信息 Packaging Information

每个吸塑盘产品数量  
Each Blister Plate: 20 PCS

每箱吸塑盘数量  
Each Carton: 14 Blister Plates



- 单位 Unit:mm;
- 每箱具体数量请以规格书为准。  
Please refer to the specifications for the packaging details.



满足IEC 60950的测试要求  
Meet the Test Requirements of IEC 60950

尺寸 Dimensions (mm)  
L26 × W12 × H12

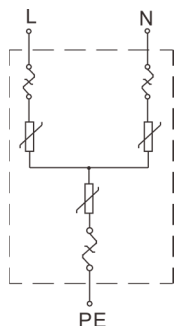
### 关键特性 Key Features

- 卧式或立式安装 Horizontal or Vertical Installation
- 体积小 Miniaturized Size
- 浪涌耐受能力 Surge Capacity : 4 kV / 2 kA
- 使用条件: 温度(-40 - 85) °C, 相对湿度≤95%  
Operating Conditions: Temp. (-40 - 85) °C, RH≤95%

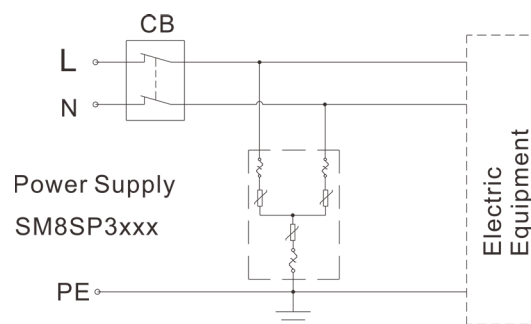
### 应用领域 Applications

- LED电源 LED Power Supply
- 工业电源 Industrial Power Supply
- 防雷插座 Surge Protector
- 电信设备 Telecom Equipment
- 网络设备 Network Equipment
- 有线电视 Cable TV

### 产品原理图 Product Schematics

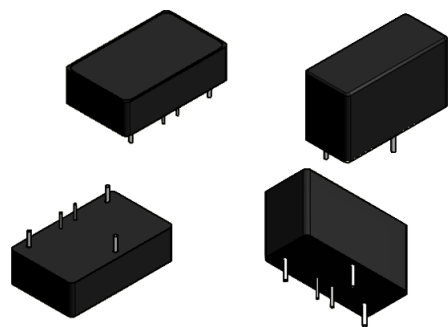


### 产品应用图 Installation Guide



### 技术参数 Specifications

型号 Model	最大连续工作电压 Max. Continuous Operating Voltage		开路电压 Open Circuit Voltage	标称放电 电流 Nominal Discharge Current	电压保护水平 Voltage Protection Level		响应时间 Response Time	受限电流等级 Level of Limited Current
	$U_c$		$U_{oc}$	$I_n$	$U_p$	$I_p$		
	(Vac)	(Vdc)	(kV)	(kA)	(V)	(kA)		
SM8S201P3NBB	130	170	4	2	500	2	<25	10
SM8S221P3NBB	140	180	4	2	500	2	<25	10
SM8S241P3NBB	150	200	4	2	600	2	<25	10
SM8S271P3NBB	175	225	4	2	700	2	<25	10
SM8S431P3NBB	275	350	4	2	900	2	<25	10
SM8S471P3NBB	300	385	4	2	1000	2	<25	10
SM8S511P3NBB	320	415	4	2	1200	2	<25	10
SM8S561P3NBB	350	460	4	2	1300	2	<25	10
SM8S621P3NBB	385	505	4	2	1500	2	<25	10



满足IEC 60950的测试要求  
Meet the Test Requirements of IEC 60950

尺寸 Dimensions (mm)  
L28 × W12 × H17  
L26 × W17 × H12

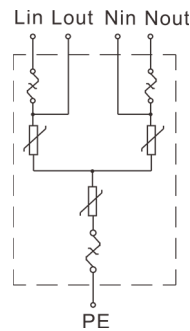
关键特性 Key Features

- 卧式或立式安装 Horizontal or Vertical Installation
- 体积小 Miniaturized Size
- 浪涌耐受能力 Surge Capacity: 6 kV / 3 kA
- 使用条件: 温度(-40 - 85) °C, 相对湿度≤95%  
Operating Conditions: Temp. (-40 - 85) °C, RH≤95%

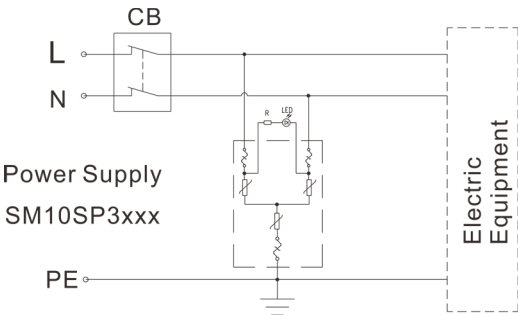
应用领域 Applications

- LED电源 LED Power Supply
- 工业电源 Industrial Power Supply
- 防雷插座 Surge Protector
- 电信设备 Telecom Equipment
- 网络设备 Network Equipment
- 有线电视 Cable TV

产品原理图 Product Schematic



产品应用图 Installation Guide



技术参数 Specifications

型号 Model	最大连续工作电压 Max. Continuous Operating Voltage		开路电压 Open Circuit Voltage	标称放电 电流 Nominal Discharge Current	电压保护水平 Voltage Protection Level		响应时间 Response Time	受限电流等级 Level of Limited Current
	$U_c$		$U_{oc}$	$I_n$	$U_p$	$I_p$		
	(Vac)	(Vdc)	(kV)	(kA)	(V)	(kA)		
SM10S201P3NBB	130	170	6	3	500	3	<25	10
SM10S221P3NBB	140	180	6	3	500	3	<25	10
SM10S241P3NBB	150	200	6	3	600	3	<25	10
SM10S271P3NBB	175	225	6	3	700	3	<25	10
SM10S431P3NBB	275	350	6	3	900	3	<25	10
SM10S471P3NBB	300	385	6	3	1000	3	<25	10
SM10S511P3NBB	320	415	6	3	1200	3	<25	10
SM10S561P3NBB	350	460	6	3	1300	3	<25	10
SM10S621P3NBB	385	505	6	3	1500	3	<25	10



产品特点 FEATURES AND BENEFITS

- 专利产品 PATENTED PRODUCT
- 体积小 Miniaturized Size
- 具有差模、共模保护功能 DIFFERENTIAL AND COMMON MODE PROTECTIONS
- 具有失效指示 FAILURE INDICATION
- 环保型产品 RoHS COMPLIANT

专利 Patents

名称 Patent Name	区域 Region	专利类别 Category	专利号 Patent NO.
一种用于LED路灯电源的浪涌保护器 A Surge Protective Device for LED Outdoor Lighting Power Supply	中国 China	实用新型 Utility Model	ZL 2013203148779
一种直流保护器 A DC Protector	中国 China	实用新型 Utility Model	ZL 2013206682698
一种小体积浪涌保护器 A Miniaturized Surge Protective Device	中国 China	实用新型 Utility Model	ZL 2013206678565
新型的热保护压敏电阻及浪涌保护器 A New Type of Varistor and Surge Protective Device with Thermal Protection	中国 China	实用新型 Utility Model	ZL 201420306127.1
一种浪涌保护器 A Surge Protective Device	中国 China	实用新型 Utility Model	ZL 201420415059.2

电涌保护器特征与型号概览  
SPD (Surge Protective Device) Feature & Model List Overview

			P310/311/312	P320/321	P322/323	P313/314	P315/316/317	P318/319	P324/325	页码 Page		最大持续工作电压 Maximum Continuous Operating Voltage Uc (V)  型号 Model NO.
480V  400V  347V   254-277V  220-230V  300V  120-130V  110V			SD05C480&M%	SD05K480&M%	SD05E480&M%	SD10C480E\$	SD10C480&\$%		SD10E480&M%	550	745	
										510	670	
										460	615	
			SD05C347&M%	SD05K347&M%	SD05E347&M%	SD10C3470E\$	SD10C347&\$%		SD10E347&M%	420	560	
										385	505	
										350	460	
			SD05C277&M%	SD05C277&M%	SD05E277&M%	SD10C277E\$	SD10C277&\$%		SD10E277&M%	320	415	
										300	385	
										275	350	
										230	300	
										175	225	
			SD05C120&M%	SD05K120&M%	SD05E120&M%	SD10C120E\$	SD10C120&\$%	SD10C120/240@\$	SD10E120&M%	150	200	
AC	DC	5	5	5	10	10	10	10	AC	DC		
标称放电电流 Nominal Discharge Current / n (kA)												

注 Notes:  
&可能是: A或L或G或N。 May be followed by A or L or G or N.  
\$可能是: M或H。 May be followed by M or H.  
@可能是: A或G。 May be followed by A or G .  
%可能是T May be followed by T.



## 注意事项 ATTENTION

### 使用 Usage

1. 交流频率在47 Hz和63 Hz之间。

Frequency range is from 47 Hz to 63 Hz .

2. 持续施加在电涌保护模组上的电压不应超过其最大连续工作电压 $U_c$ 。

The voltage applied continuously to the SPD Module must not exceed its maximum continuous operating voltage  $U_c$ .

3. 气压在80 kPa 到106 kPa，对应海拔为+2000 m至-500 m。

When air pressure is from 80 kPa to 106 kPa, the related altitude shall be from +2000 m to -500 m.

4. 通电情况下请勿直接触碰本体或引脚，防止触电。

Do not touch the product body or pins directly when power is on, to avoid electric shock.

### 更换 Replacement

电涌保护器是不可修复的产品，基于安全原因，替换时应使用同类别同型号的产品。

As SPD is a non-repairable product, for safety sake, please use the same type of SPD for replacement.

### 贮存 Storage

电涌保护器的贮存应避免高温、高湿、日光直射和腐蚀性气体的场合，避免引线氧化。产品购入后请于1年内使用完。

Please store the SPD without high temperature, high humidity or corrosive gas. To avoid oxidation of the lead wires, please use them up within 1 year after receiving the goods.

## 安装 Installation

### 安装注意事项 Installation Attention

1. 注意触电危险。  
Attention risk of electric shock
2. 请在安装使用前断开电源。  
Please remove all electrical power before installation or service.
3. 引线连接尽量平直。  
Keep wires as straight as possible.
4. 电路通电前确保电气连接和安装正确。  
Ensure electrical connections and mountings are correct before energizing the circuit.
5. 由专业人员进行安装维护。  
Installation and service must be performed by qualified personnel.
6. 请在电涌保护器前端使用断路器。  
Please install proper circuit breaker in front of SPD.
7. 安装过程和安装后不宜对电涌保护器本体施加机械应力。  
Do not apply mechanical stress to the SPD body during or after the installation.

### 安装位置 Installation Position

勿将电涌保护器安装在出现剧烈振动的地方。

Do not install SPD on the place which suffer severe vibration.

型号说明 Part Number System

SD 10 C 277 G M T -D

D

电路特征 Circuit Characteristics  
缺省Default: 全模 All Modes  
-D: 差模 Differential Mode

T

电路特征 Circuit Characteristics  
缺省Default: 一端口 One-Port  
T: 两端口 Two-Port

M

浪涌耐受能力 Surge Capacity  
H: 高 High M: 中 Medium

G

电路特征 Circuit Characteristics  
A: 带放电管和故障指示灯  
With GDT and Failure Indicator  
G: 带放电管 With GDT  
L: 带故障指示灯 With Fault Indicator  
N: 无放电管和故障指示灯  
Without GDT or Failure Indicator  
E: 无热保护 Without Thermal Protection

277

额定工作电压 ( $U_n$ ) Nominal System Voltage  
120: 120 Vac 277: 277 Vac  
347: 347 Vac 480: 480 Vac

C

设计序列 Design Sequence

10

标称放电电流 Nominal Discharge Current  
10:10 kA(8/20  $\mu$ s)  
05:5 kA(8/20  $\mu$ s)

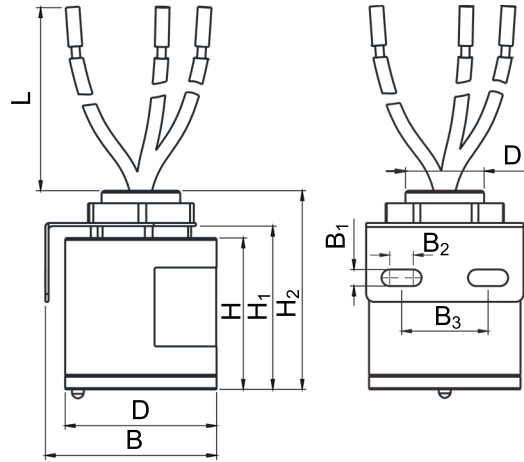
SD

产品类别 Product Type  
SD: 电涌保护器 Surge Protective Device

SPD

SPD





尺寸 Dimensions (mm)

L <sup>a</sup>	H	H <sub>1</sub>	H <sub>2</sub>	D	D <sub>1</sub>	B	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>
150.0±5.0	38.0±1.0	41.0±1.0	50.0±1.0	Φ38.0±1.0	M20 × 1.5	43.5±1.0	4.2±0.1	6.0±0.1	22.0±0.2

<sup>a</sup>: 长度L可按客户要求定制。

The lead length "L" can be customized as required.

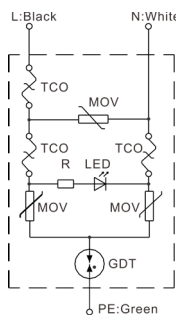
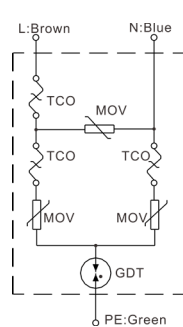
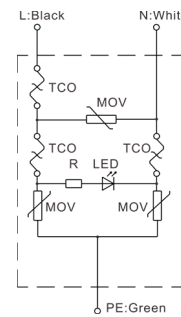
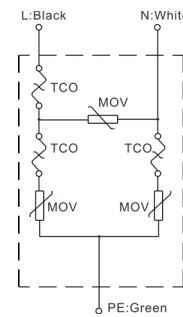
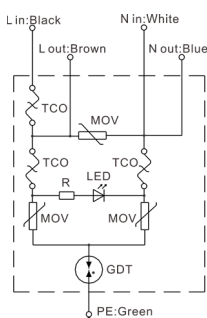
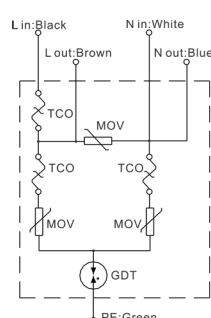
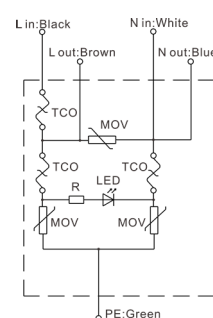
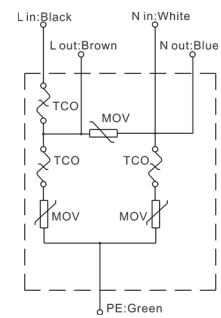
## 关键特性 Key Features

- IP66
- 具有差模、共模保护功能  
Differential and Common Mode Protections
- 一端口、两端口可选  
One-port and Two-port Optional
- 失效指示可选  
Failure Indication Optional
- 两端口SPD在开路失效时可断开主电路  
Two-port SPD Can Disconnect The Main Line  
When Open-circuit Failure Happens


## 应用领域 Applications

- 户外照明供电系统  
Power System of Outdoor Lighting
- 监控供电系统  
Power System of Monitoring
- 空调供电系统  
Power System of Air Conditioning
- 机房供电系统  
Power System of Computer Room
- 通讯设备供电系统  
Power System of Telecom
- 电动汽车供电系统  
Power System of EV

## 电路原理 Schematics

SD05CxxxAx Series  
Fig.11SD05CxxxGx Series  
Fig.12SD05CxxxLx Series  
Fig.13SD05CxxxNx Series  
Fig.14SD05CxxxAxT Series  
Fig.15SD05CxxxGxT Series  
Fig.16SD05CxxxLxT Series  
Fig.17SD05CxxxNxT Series  
Fig.18

## 技术参数 Specifications

型号 Model	最大连续 工作电压 Max. Continuous Operating Voltage	标称放电 电流 Nominal Discharge Current (8/20 μs)	最大放电 电流 Max. Discharge Current (8/20 μs)	电压保护 水平 Voltage Protection Level	额定电流 <sup>a</sup> Rated Current Current	响应时间 Response Time	外部过流 保护 <sup>b</sup> External Overcurrent Protection	产品 原理图 Product Schematics	安规认证 Agency Approvals
	$U_c$	$I_n$	$I_{max}$	$U_p$	$I_r$				
	(Vac)	(kA)	(kA)	(V)	(A)				UL, CUL
SD05C120AM	150	5	10	1400	-	<100	10	Fig. 11	●
SD05C277AM	320	5	10	2000	-	<100	10	Fig. 11	●
SD05C347AM	420	5	10	2200	-	<100	10	Fig. 11	●
SD05C480AM	550	5	10	3000	-	<100	10	Fig. 11	
SD05C120GM	150	5	10	1400	-	<100	10	Fig. 12	●
SD05C277GM	320	5	10	2000	-	<100	10	Fig. 12	●
SD05C347GM	420	5	10	2200	-	<100	10	Fig. 12	●
SD05C480GM	550	5	10	3000	-	<100	10	Fig. 12	
SD05C120LM	150	5	10	1200	-	<25	10	Fig. 13	●
SD05C277LM	320	5	10	1600	-	<25	10	Fig. 13	●
SD05C347LM	420	5	10	2000	-	<25	10	Fig. 13	●
SD05C480LM	550	5	10	2800	-	<25	10	Fig. 13	
SD05C120NM	150	5	10	1200	-	<25	10	Fig. 14	●
SD05C277NM	320	5	10	1600	-	<25	10	Fig. 14	●
SD05C347NM	420	5	10	2000	-	<25	10	Fig. 14	●
SD05C480NM	550	5	10	2800	-	<25	10	Fig. 14	
SD05C120AMT	150	5	10	1400	10	<100	10	Fig. 15	●
SD05C277AMT	320	5	10	2000	10	<100	10	Fig. 15	●
SD05C347AMT	420	5	10	2200	10	<100	10	Fig. 15	●
SD05C480AMT	550	5	10	3000	10	<100	10	Fig. 15	
SD05C120GMT	150	5	10	1400	10	<100	10	Fig. 16	●
SD05C277GMT	320	5	10	2000	10	<100	10	Fig. 16	●
SD05C347GMT	420	5	10	2200	10	<100	10	Fig. 16	●
SD05C480GMT	550	5	10	3000	10	<100	10	Fig. 16	
SD05C120LMT	150	5	10	1200	10	<25	10	Fig. 17	●
SD05C277LMT	320	5	10	1600	10	<25	10	Fig. 17	●
SD05C347LMT	420	5	10	2000	10	<25	10	Fig. 17	●
SD05C480LMT	550	5	10	2800	10	<25	10	Fig. 17	
SD05C120NMT	150	5	10	1200	10	<25	10	Fig. 18	●
SD05C277NMT	320	5	10	1600	10	<25	10	Fig. 18	●
SD05C347NMT	420	5	10	2000	10	<25	10	Fig. 18	●
SD05C480NMT	550	5	10	2800	10	<25	10	Fig. 18	

<sup>a</sup>: 额定电流为熔断器额定电流 Rated Current for the Thermal Fuse .

<sup>b</sup>: 推荐外部过流保护装置断路器型号: C 10 A, 曲线C (单独设置或主回路中)。

Recommended External Circuit Breaker Model: C 10 A, Curve C. (Individually Set or Main Circuit).

## 执行标准 Designed to Standards

- UL 1449 Fourth Edition
- EN 61643-11
- IEEE C62.41.2

## 认证信息 Agency Information

- UL / CUL E322662

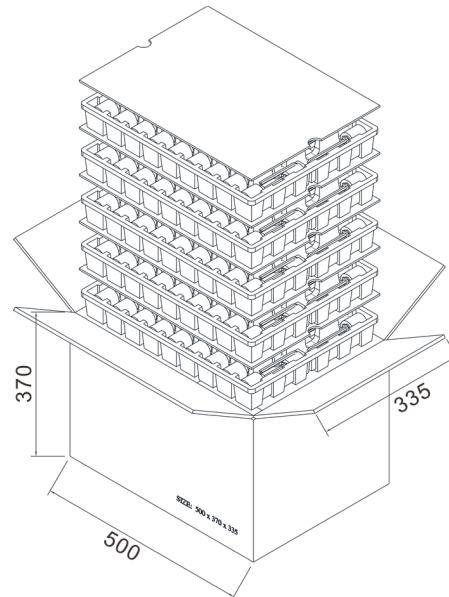
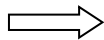
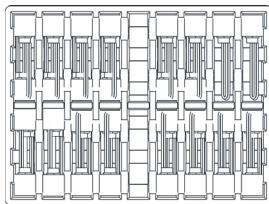
## 包装信息 Packaging Information

每个吸塑盘产品数量

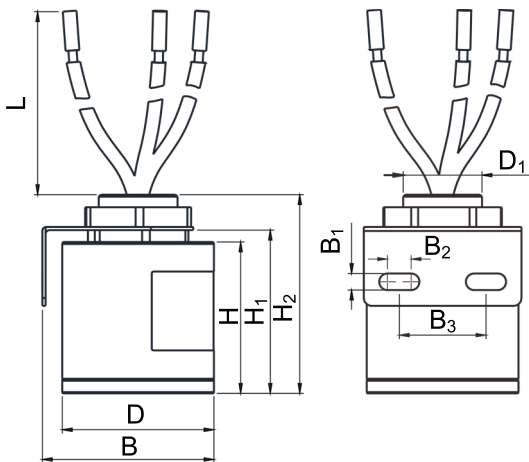
Each Blister Plate: 32 PCS

每箱吸塑盘数量

Each Carton: 5 Blister Plates



- 单位 Unit:mm;
- 每箱具体数量请以规格书为准。  
Please refer to the specifications for the packaging details.



尺寸 Dimensions (mm)

L <sup>a</sup>	H	H <sub>1</sub>	H <sub>2</sub>	D	D <sub>1</sub>	B	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>
150.0±5.0	38.0±1.0	41.0±1.0	50.0±1.0	Φ38.0±1.0	M20 × 1.5	43.5±1.0	4.2±0.1	6.0±0.1	22.0±0.2

<sup>a</sup>: 长度L可按客户要求定制。  
The lead length “L” can be customized as required.

关键特性 Key Features

- IP66
- 具有差模、共模保护功能  
Differential and Common Mode Protections
- 一端口可选  
One-port Optional
- 不带热保护功能  
Without Thermal Protection Function

应用领域 Applications

- 户外照明供电系统  
Power System of Outdoor Lighting
- 监控供电系统  
Power System of Monitoring
- 空调供电系统  
Power System of Air Conditioning
- 机房供电系统  
Power System of Computer Room
- 通讯设备供电系统  
Power System of Telecom
- 电动汽车供电系统  
Power System of EV

执行标准 Designed to Standards

- UL 1449 Fourth Edition
- IEC / EN 61643-11
- IEEE C62.41.2

认证信息 Agency Information

- UL / CUL E322662

电路原理 Schematics

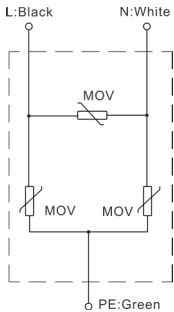


Fig.19

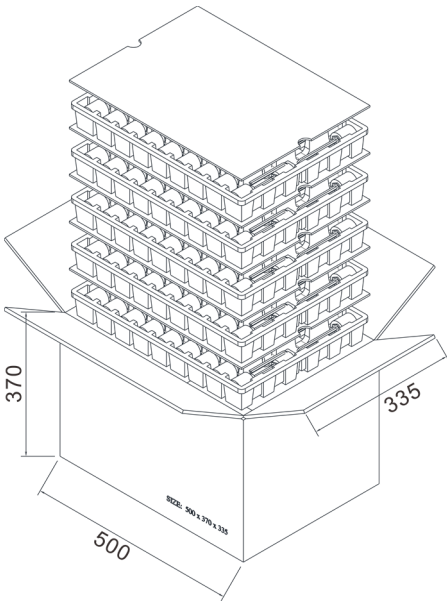
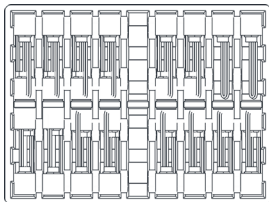
技术参数 Specifications

型号 Model	最大连续工 作电压 Max. Continuous Operating Voltage	通流容量 Surge Current (8/20 μs)				电压保护水平 Voltage Protection Rating	产品原理图 Product Schematics	安规认证 Agency Approvals
	$U_c$	$I_n$	$U_{oc}$	$I_{max}$		VPR		
	(Vac)	(kA)	(kV)	(kA)		(V)		UL, CUL
SD10C120EM	150	10	20	15		600	Fig. 19	●
SD10C277EM	320	10	20	15		1150	Fig. 19	●
SD10C347EM	420	10	20	15		1350	Fig. 19	●
SD10C480EM	550	10	20	15		1600	Fig. 19	
SD10C120EH	150	10	20	25		600	Fig. 19	●
SD10C277EH	320	10	20	25		1150	Fig. 19	●
SD10C347EH	420	10	20	25		1350	Fig. 19	●
SD10C480EH	550	10	20	25		1600	Fig. 19	

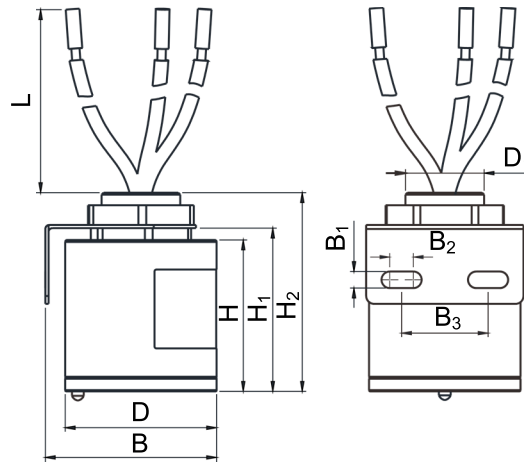
包装信息 Packaging Information

每个吸塑盘产品数量  
Each Blister Plate: 32 PCS

每箱吸塑盘数量  
Each Carton: 5 Blister Plates



- 单位 Unit:mm;
- 每箱具体数量请以规格书为准。  
Please refer to the specifications for the packaging details.



尺寸 Dimensions (mm)

L <sup>a</sup>	H	H <sub>1</sub>	H <sub>2</sub>	D	D <sub>1</sub>	B	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>
150.0±5.0	38.0±1.0	41.0±1.0	50.0±1.0	Φ38.0±1.0	M20 × 1.5	43.5±1.0	4.2±0.1	6.0±0.1	22.0±0.2

<sup>a</sup>: 长度L可按客户要求定制。

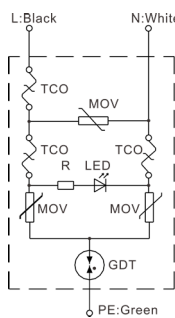
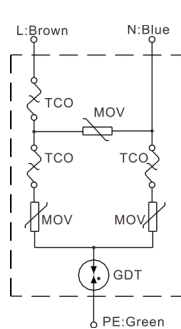
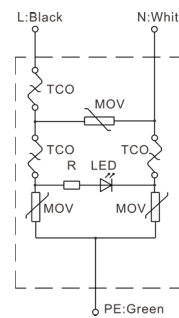
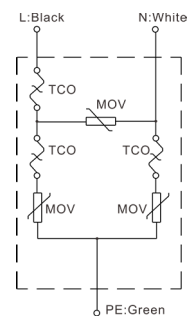
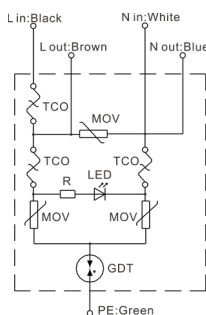
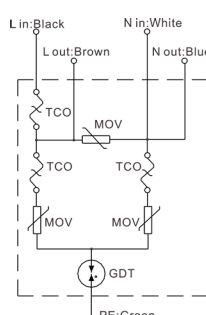
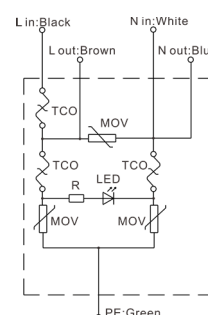
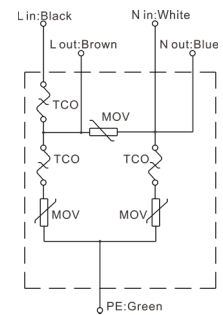
The lead length "L" can be customized as required.

**关键特性 Key Features**

- IP66
- 具有差模、共模保护功能  
Differential and Common Mode Protections
- 一端口、两端口可选  
One-port and Two-port Optional
- 失效指示可选  
Failure Indication Optional
- 两端口SPD在开路失效时可断开主电路  
Two-port SPD Can Disconnect The Main Line  
When Open-circuit Failure Happens

**应用领域 Applications**

- 户外照明供电系统  
Power System of Outdoor Lighting
- 监控的供电系统  
Power System of Monitoring
- 空调供电系统  
Power System of Air Conditioning
- 机房供电系统  
Power System of Computer Room
- 通讯设备供电系统  
Power System of Telecom
- 电动汽车供电系统  
Power System of EV

**电路原理 Schematics**SD10CxxxAx Series  
Fig.20SD10CxxxGx Series  
Fig.21SD10CxxxLx Series  
Fig.22SD10CxxxNx Series  
Fig.23SD10CxxxAxT Series  
Fig.24SD10CxxxGxT Series  
Fig.25SD10CxxxLxT Series  
Fig.26SD10CxxxNxT Series  
Fig.27

## 技术参数 Specifications

型号 Model	最大连续 工作电压 Max. Continuous Operating Voltage	标称放电 电流 Nominal Discharge Current (8/20 μs)	最大放电 电流 Max. Discharge Current (8/20 μs)	电压保护 等级 Voltage Protection Rating	电压保护 水平 Voltage Protection Level	额定电流 <sup>a</sup> Rated Current	响应时间 Response Time	外部过流 保护 <sup>b</sup> External Overcurrent Protection	产品 原理图 Product Schematic
	$U_c$	$I_n$	$I_{max}$	VPR	$U_p$	$I_r$	(ns)	(A)	
	(Vac)	(kA)	(kA)	(V)	(V)	(A)			
SD10C120A*	150	10	15 / 25	800	1400	-	<100	32	Fig. 20
SD10C277A*	320	10	15 / 25	1300	2000	-	<100	32	Fig. 20
SD10C347A*	420	10	15 / 25	1500	2200	-	<100	32	Fig. 20
SD10C480A*	550	10	15 / 20	1800	3000	-	<100	20	Fig. 20
SD10C120G*	150	10	15 / 25	800	1400	-	<100	32	Fig. 21
SD10C277G*	320	10	15 / 25	1300	2000	-	<100	32	Fig. 21
SD10C347G*	420	10	15 / 25	1500	2200	-	<100	32	Fig. 21
SD10C480G*	550	10	15 / 20	1800	3000	-	<100	20	Fig. 21
SD10C120L*	150	10	15 / 25	600	1200	-	<25	32	Fig. 22
SD10C277L*	320	10	15 / 25	1150	1600	-	<25	32	Fig. 22
SD10C347L*	420	10	15 / 25	1350	2000	-	<25	32	Fig. 22
SD10C480L*	550	10	15 / 20	1600	2500	-	<25	20	Fig. 22
SD10C120N*	150	10	15 / 25	600	1200	-	<25	32	Fig. 23
SD10C277N*	320	10	15 / 25	1150	1600	-	<25	32	Fig. 23
SD10C347N*	420	10	15 / 25	1350	2000	-	<25	32	Fig. 23
SD10C480N*	550	10	15 / 20	1600	2500	-	<25	20	Fig. 23
SD10C120A*T	150	10	15 / 25	800	1400	15	<100	32	Fig. 24
SD10C277A*T	320	10	15 / 25	1300	2000	15	<100	32	Fig. 24
SD10C347A*T	420	10	15 / 25	1500	2200	15	<100	32	Fig. 24
SD10C480A*T	550	10	15 / 20	1800	3000	15	<100	20	Fig. 24
SD10C120G*T	150	10	15 / 25	800	1400	15	<100	32	Fig. 25
SD10C277G*T	320	10	15 / 25	1300	2000	15	<100	32	Fig. 25
SD10C347G*T	420	10	15 / 25	1500	2200	15	<100	32	Fig. 25
SD10C480G*T	550	10	15 / 20	1800	3000	15	<100	20	Fig. 25
SD10C120L*T	150	10	15 / 25	600	1200	15	<25	32	Fig. 26
SD10C277L*T	320	10	15 / 25	1150	1600	15	<25	32	Fig. 26
SD10C347L*T	420	10	15 / 25	1350	2000	15	<25	32	Fig. 26
SD10C480L*T	550	10	15 / 20	1600	2500	15	<25	20	Fig. 26
SD10C120N*T	150	10	15 / 25	600	1200	15	<25	32	Fig. 27
SD10C277N*T	320	10	15 / 25	1150	1600	15	<25	32	Fig. 27
SD10C347N*T	420	10	15 / 25	1350	2000	15	<25	32	Fig. 27
SD10C480N*T	550	10	15 / 20	1600	2500	15	<25	20	Fig. 27

<sup>a</sup>: 额定电流为热熔断体额定电流 Rated Current for the Thermal Fuse .

<sup>b</sup>: 推荐外部过流保护装置C型曲线断路器（单独设置或主回路中）。

Recommended External Curve C Circuit Breaker (Individually Set or Main Circuit).

\*: M或H Maybe M or H.

## 执行标准 Designed to Standards






- UL 1449 Fourth Edition
- EN / IEC 61643-11
- IEEE C62.41.2

## 认证信息 Agency Information

- UL / CUL E322662
- UL-EU UL-EU-00647
- CE: 3183404.01AOC, 3183404.02AOC
- CB: NL-41003, NL-41004, NL-41005, NL-41006



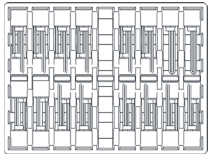
辅助功能 Auxiliary Function

型号 Model	失效指示 Fault Indicator	放电管 GDT	一端口 One-Port	两端口 Two-Port	安规认证 Agency Approvals			
						 		
SD10C120A*	●	●	●		●	●	●	
SD10C277A*	●	●	●		●	●	●	●
SD10C347A*	●	●	●		●	●	●	
SD10C480A*	●	●	●		●			
SD10C120G*		●	●		●			
SD10C277G*		●	●		●			
SD10C347G*		●	●		●			
SD10C480G*		●	●		●			
SD10C120L*	●		●		●	●	●	
SD10C277L*	●		●		●	●	●	●
SD10C347L*	●		●		●	●	●	
SD10C480L*	●		●		●			
SD10C120N*			●		●			
SD10C277N*			●		●			
SD10C347N*			●		●			
SD10C480N*			●		●			
SD10C120A*T	●	●		●	●	●	●	
SD10C277A*T	●	●		●	●	●	●	●
SD10C347A*T	●	●		●	●	●	●	
SD10C480A*T	●	●		●	●			
SD10C120G*T		●		●	●			
SD10C277G*T		●		●	●			
SD10C347G*T		●		●	●			
SD10C480G*T		●		●	●			
SD10C120L*T	●			●	●	●	●	
SD10C277L*T	●			●	●	●	●	●
SD10C347L*T	●			●	●	●	●	
SD10C480L*T	●			●	●			
SD10C120N*T				●	●			
SD10C277N*T				●	●			
SD10C347N*T				●	●			
SD10C480N*T				●	●			

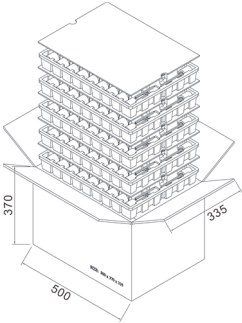
\*: M或H Maybe M or H.

包装信息 Packaging Information

每个吸塑盘产品数量  
Each Pulp Tray: 32 PCS

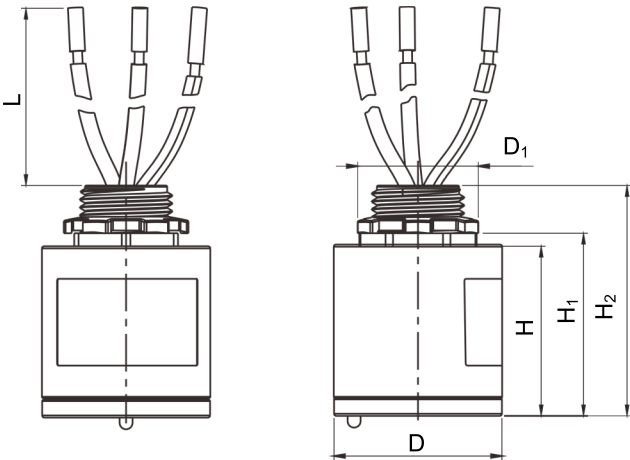


每箱吸塑盘数量  
Each Carton: 5 Blister Plates



- 单位 Unit:mm;
- 每箱具体数量请以规格书为准。  
Please refer to the specifications for the packaging details.





尺寸 Dimensions (mm)

L <sup>a</sup>	H	H <sub>1</sub>	H <sub>2</sub>	D	D <sub>1</sub>
150.0±5.0	39.0±1.0	42.0±1.0	53.0±1.0	Φ39.0±1.0	1/2-14HPSLX3.7

<sup>a</sup>: 长度L可按客户要求进行定制。  
The lead length “L” can be customized as required.

关键特性 Key Features

- IP66
- UL1449 Type1 SPD
- 暂态过电压耐受能力: 2 U<sub>n</sub>, 5 s  
TOV 5 s at 2 Times Rated Operating Voltage
- 额定短路电流: 200 kA  
SCCR: 200 kA
- 使用条件: 温度(-40 - 85) °C, 相对湿度≤95%  
Operated Conditions: Temp. (-40 - 85) °C, RH≤95%

应用领域 Applications

- 户外照明供电系统  
Power System of Outdoor Lighting
- 房车供电系统  
Power System of PV
- 空调供电系统  
Power System of Air Conditioning
- 配电盘/箱  
Distribution Panel

电路原理 Schematics

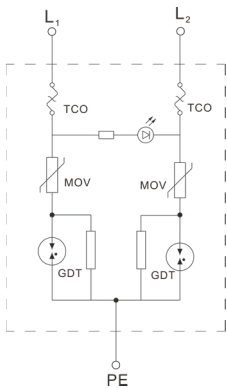


Fig. 28

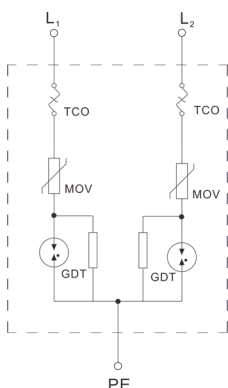



Fig. 29

技术参数 Specifications

型号 Model	模式 Mode	最大连续工 作电压 Max. Continuous Operating Voltage	标称放电 电流 Nominal Discharge Current (8/20 μs)	最大放电 电流 Max. Discharge Current (8/20 μs)	电压保护 水平 Voltage Protection Rating	短路电流 Short Circuit Current Rating	产品 原理图 Product Schematic	安规认证 Agency Approvals
		MCOV	I <sub>n</sub>	I <sub>max</sub>	VPR	SCCR		
		(Vac)	(kA)	(kA)	(V)	(kA)		UL, CUL
SD10C120/240AH	L-G	150	10	25	1200	200	Fig. 28	●
	L-L	300			2000			
SD10C120/240AM	L-G	150	10	15	1200	200	Fig. 28	●
	L-L	300			2000			
SD10C120/240GH	L-G	150	10	25	1200	200	Fig. 29	●
	L-L	300			2000			
SD10C120/240GM	L-G	150	10	15	1200	200	Fig. 29	●
	L-L	300			2000			

执行标准 Designed to Standards

- UL 1449 Fourth Edition

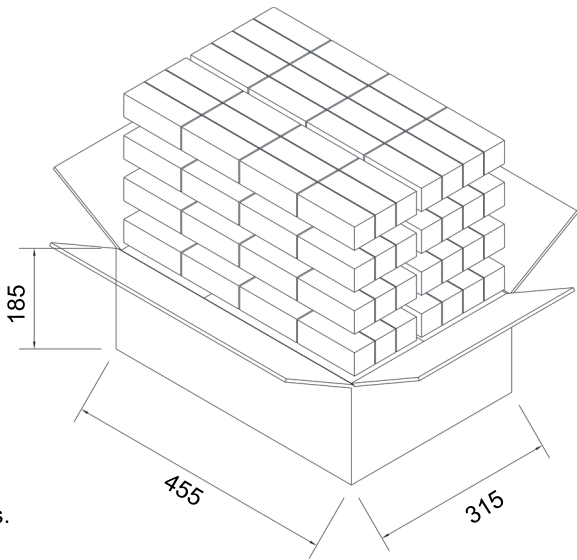
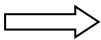
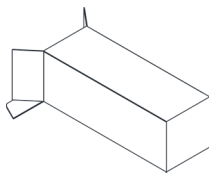
认证信息 Agency Information

- UL / CUL E322662

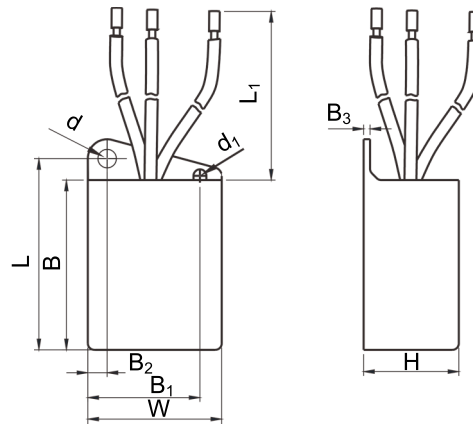
包装信息 Packaging Information

每个小包装产品数量  
Each Blister Plate: 1 PCS

每箱小包装数量  
Each Carton: 112 Blister Plates



- 单位 Unit:mm;
- 每箱具体数量请以规格书为准。  
Please refer to the specifications for the packaging details.



尺寸 Dimensions (mm)

L	(L <sub>1</sub> ) <sup>a</sup>	W	H	d	d <sub>1</sub>	B	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>
44.5±1.0	150.0±5.0	31.0±1.0	22.0±1.0	Φ4.3±0.5	3.0±0.5	39.5±1.0	26.0±1.0	4.5±0.5	1.5±0.2

<sup>a</sup>: 长度L<sub>1</sub>可按客户要求定制。

The lead length "L<sub>1</sub>" can be customized as required.

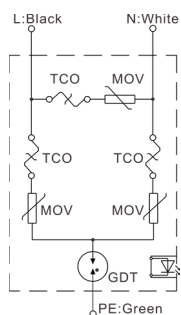
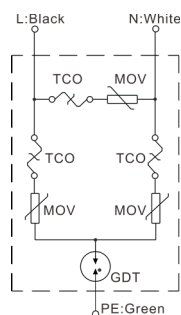
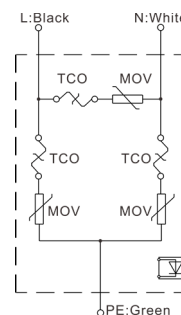
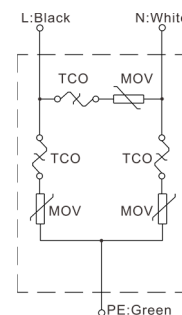
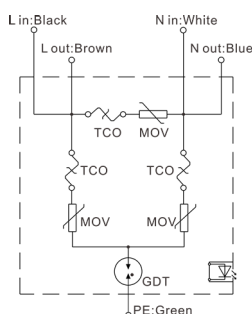
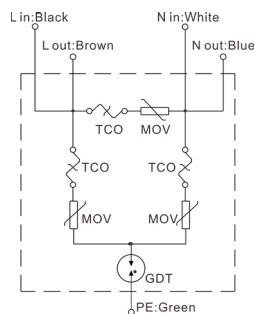
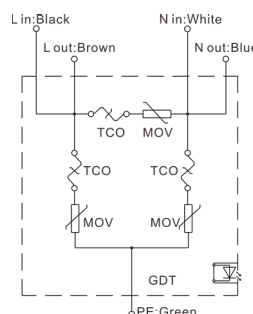
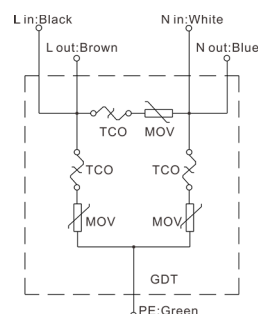
## 关键特性 Key Features

- IP66
- 两端口产品可选防水连接器  
Two-port Product Optional Waterproof Connector
- 共模GDT可选  
GDT for Common Mode Optional
- 失效指示或信号指示或无  
Failure Indication or Signal Indication or None
- 带热保护功能  
With Thermal Protection Function


## 应用领域 Applications

- 户外照明供电系统  
Power System of Outdoor Lighting
- 监控供电系统  
Power System of Monitoring
- 空调供电系统  
Power System of Air Conditioning
- 机房供电系统  
Power System of Computer Room
- 通讯电源  
Telecom Power
- 电动汽车供电系统  
Power System of EV

## 电路原理 Schematics

SD05KxxxAx Series  
Fig. 30SD05KxxxGx Series  
Fig. 31SD05KxxxLx Series  
Fig. 32SD05KxxxNx Series  
Fig. 33SD05KxxxAx Series  
Fig. 34SD05KxxxGx Series  
Fig. 35SD05KxxxLx Series  
Fig. 36SD05KxxxNx Series  
Fig. 37

## 技术参数 Specifications

型号 Model	最大连续 工作电压 Max. Continuous Operating Voltage	标称放电 电流 Nominal Discharge Current (8/20 μs)	最大放电 电流 Max. Discharge Current (8/20 μs)	电压保护 水平 Voltage Protection Level	额定电流 <sup>a</sup> Rated Current	响应时间 Response Time	外部过流 保护 <sup>b</sup> External Overcurrent Protection	产品 原理图 Product Schematic	安规认证 Agency Approvals
	$U_c$	$I_n$	$I_{max}$	$U_p$	$I_r$	(ns)	(A)	Fig. 30 Fig. 31 Fig. 32 Fig. 33 Fig. 34 Fig. 35 Fig. 36 Fig. 37	 UL, CUL
	(Vac)	(kA)	(kA)	(V)	(A)				
SD05K120AM	150	5	10	1000	-	<100	10	Fig. 30	
SD05K277AM	320	5	10	1800	-	<100	10	Fig. 30	●
SD05K347AM	420	5	10	2200	-	<100	10	Fig. 30	
SD05K120GM	150	5	10	1000	-	<100	10	Fig. 31	
SD05K277GM	320	5	10	1800	-	<100	10	Fig. 31	
SD05K347GM	420	5	10	2200	-	<100	10	Fig. 31	
SD05K120LM	150	5	10	800	-	<25	10	Fig. 32	
SD05K277LM	320	5	10	1500	-	<25	10	Fig. 32	●
SD05K347LM	420	5	10	2000	-	<25	10	Fig. 32	
SD05K120NM	150	5	10	800	-	<25	10	Fig. 33	
SD05K277NM	320	5	10	1500	-	<25	10	Fig. 33	
SD05K347NM	420	5	10	2000	-	<25	10	Fig. 33	
SD05K120AMT	150	5	10	1000	7	<100	10	Fig. 34	
SD05K277AMT	320	5	10	1800	7	<100	10	Fig. 34	●
SD05K347AMT	420	5	10	2200	7	<100	10	Fig. 34	
SD05K120GMT	150	5	10	1000	7	<100	10	Fig. 35	
SD05K277GMT	320	5	10	1800	7	<100	10	Fig. 35	
SD05K347GMT	420	5	10	2200	7	<100	10	Fig. 35	
SD05K120LMT	150	5	10	800	7	<25	10	Fig. 36	
SD05K277LMT	320	5	10	1500	7	<25	10	Fig. 36	●
SD05K347LMT	420	5	10	2000	7	<25	10	Fig. 36	
SD05K120NMT	150	5	10	800	7	<25	10	Fig. 37	
SD05K277NMT	320	5	10	1500	7	<25	10	Fig. 37	
SD05K347NMT	420	5	10	2000	7	<25	10	Fig. 37	

<sup>a</sup>: 额定电流为热熔断体额定电流 Rated Current for the Thermal Fuse .

<sup>b</sup>: 推荐外部过流保护装置断路器型号: C 10 A, 曲线C (单独设置或主回路中)。

Recommended External Circuit Breaker Model: C 10 A, Curve C (Individually Set or Main Circuit).

## 执行标准 Designed to Standards

- UL 1449 Fourth Edition

## 认证信息 Agency Information

- UL / CUL E322662

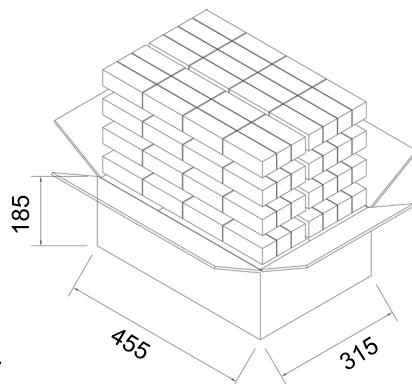
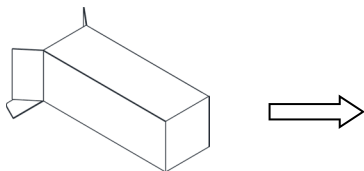
## 包装信息 Packaging Information

每个小包装产品数量

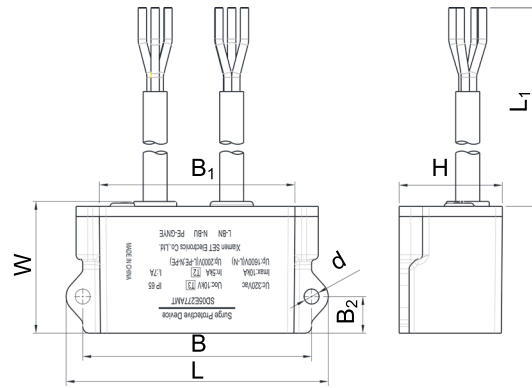
Each Small Package: 1 PCS

每箱小包装数量

Each Carton: 112 Small Package



- 单位 Unit: mm;
- 每箱具体数量请以规格书为准。  
Please refer to the specifications for the packaging details.



尺寸 Dimensions (mm)

L	(L <sub>1</sub> ) <sup>a</sup>	W	H	d	B	B <sub>1</sub>	B <sub>2</sub>
79.0±1.0	200.0±5.0	39.5±1.0	31.0±1.0	Φ4.5±0.5	69.0±1.0	59.0±1.0	11.0±1.0

<sup>a</sup>: 长度L<sub>1</sub>可按客户要求定制。

The lead length "L<sub>1</sub>" can be customized as required.

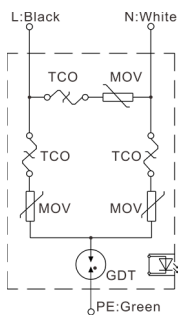
### 关键特性 Key Features

- IP65
- 可选防水连接器  
Optional Waterproof Connector
- 共模GDT可选  
GDT for Common Mode Optional
- 失效指示可选  
Failure Indication Optional
- 带热保护功能  
With Thermal Protection Function

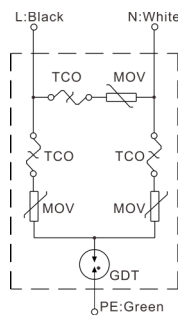
### 应用领域 Applications

- 户外照明供电系统  
Power System of Outdoor Lighting
- 监控的供电系统  
Power System of Monitoring
- 空调供电系统  
Power System of Air Conditioning
- 机房供电系统  
Power System of Computer Room
- 通讯设备供电系统  
Power System of Telecom
- 电动汽车供电系统  
Power System of EV

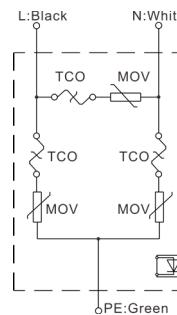
### 电路原理 Schematics



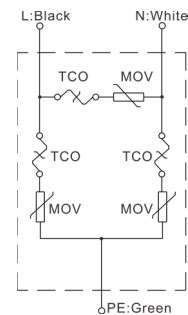
SD05ExxxAx Series  
Fig. 38



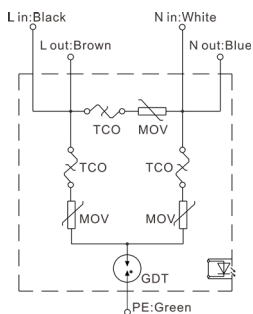
SD05ExxxGx Series  
Fig. 39



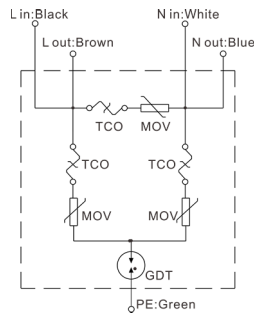
SD05ExxxLx Series  
Fig. 40



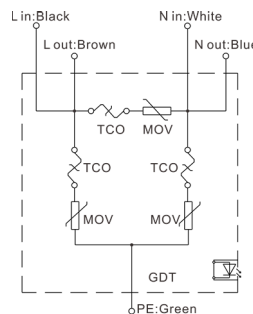
SD05ExxxNx Series  
Fig. 41



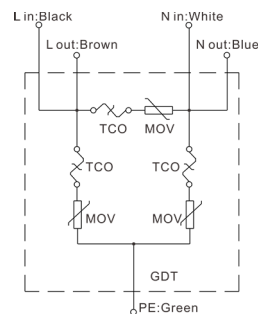
SD05ExxxAx Series  
Fig. 42



SD05ExxxGx Series  
Fig. 43




SD05ExxxLx Series  
Fig. 44



SD05ExxxNx Series  
Fig. 45

## 技术参数 Specifications

型号 Model	最大连续 工作电压 Max. Continuous Operating Voltage	标称放电 电流 Nominal Discharge Current (8/20 μs)	最大放电 电流 Max. Discharge Current (8/20 μs)	电压保护 水平 Voltage Protection Level	额定电流 <sup>a</sup> Rated Current	响应时间 Response Time	外部过流 保护 <sup>b</sup> External OverCurrent Protection	产品 原理图 Product Schematic	安规认证 Agency Approvals
	$U_c$	$I_n$	$I_{max}$	$U_p$	$I_r$				
	(Vac)	(kA)	(kA )	(V)	(A)	(ns)	(A)		UL, CUL
SD05E120AM	150	5	10	1000	-	<100	10	Fig. 38	
SD05E277AM	320	5	10	1800	-	<100	10	Fig. 38	●
SD05E347AM	420	5	10	2200	-	<100	10	Fig. 38	
SD05E120GM	150	5	10	1000	-	<100	10	Fig. 39	
SD05E277GM	320	5	10	1800	-	<100	10	Fig. 39	
SD05E347GM	420	5	10	2200	-	<100	10	Fig. 39	
SD05E120LM	150	5	10	800	-	<25	10	Fig. 40	
SD05E277LM	320	5	10	1500	-	<25	10	Fig. 40	●
SD05E347LM	420	5	10	2000	-	<25	10	Fig. 40	
SD05E120NM	150	5	10	800	-	<25	10	Fig. 41	
SD05E277NM	320	5	10	1500	-	<25	10	Fig. 41	
SD05E347NM	420	5	10	2000	-	<25	10	Fig. 41	
SD05E120AMT	150	5	10	1000	7	<100	10	Fig. 42	
SD05E277AMT	320	5	10	1800	7	<100	10	Fig. 42	●
SD05E347AMT	420	5	10	2200	7	<100	10	Fig. 42	
SD05E120GMT	150	5	10	1000	7	<100	10	Fig. 43	
SD05E277GMT	320	5	10	1800	7	<100	10	Fig. 43	
SD05E347GMT	420	5	10	2200	7	<100	10	Fig. 43	
SD05E120LMT	150	5	10	800	7	<25	10	Fig. 44	
SD05E277LMT	320	5	10	1500	7	<25	10	Fig. 44	●
SD05E347LMT	420	5	10	2000	7	<25	10	Fig. 44	
SD05E120NMT	150	5	10	800	7	<25	10	Fig. 45	
SD05E277NMT	320	5	10	1500	7	<25	10	Fig. 45	
SD05E347NMT	420	5	10	2000	7	<25	10	Fig. 45	

<sup>a</sup>: 额定电流为热熔断体额定电流 Rated Current for the Thermal Fuse .

<sup>b</sup>: 推荐外部过流保护装置断路器型号: C 10 A, 曲线C (单独设置或主回路中)。

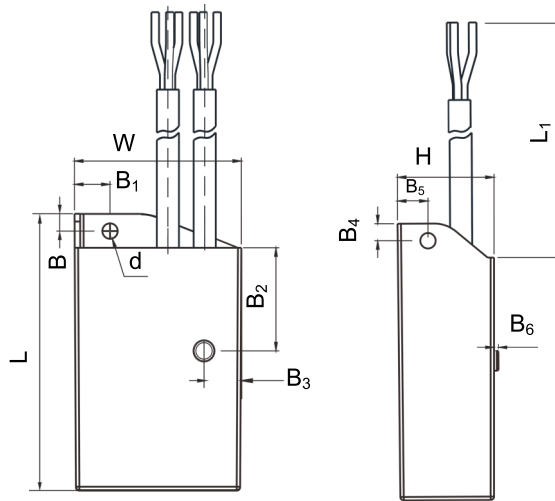
Recommended External Circuit Breaker Model: C 10 A, Curve C (Individually Set or Main Circuit).

## 执行标准 Designed to Standards

- UL 1449 Fourth Edition
- EN / IEC 61643-11
- IEEE C62.41.2

## 认证信息 Agency Information

- UL / CUL E322662



尺寸 Dimensions (mm)

L	(L <sub>1</sub> ) <sup>a</sup>	W	H	d	B	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	B <sub>4</sub>	B <sub>5</sub>	B <sub>6</sub>
80.5±1.0	200.0±5.0	48.6±1.0	28.0±1.0	Φ4.5±0.5	5.0±0.5	10.4±0.5	30.0±1.0	11.0±1.0	5.0±0.5	9.0±0.5	1.3±0.2

<sup>a</sup>: 长度L<sub>1</sub>可按客户要求进行定制The lead length "L<sub>1</sub>" can be customized as required.

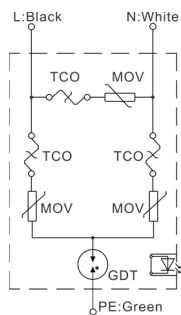
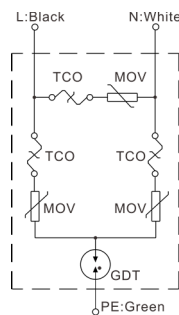
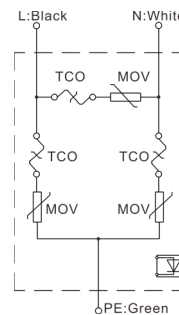
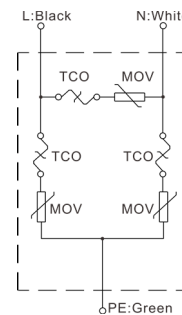
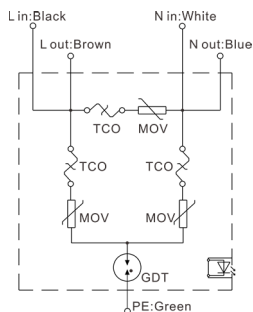
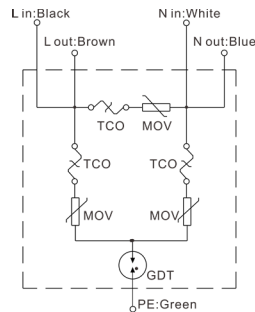
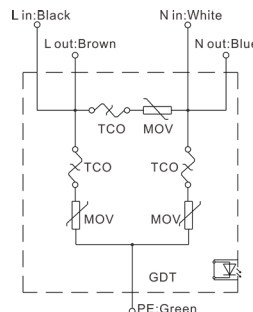
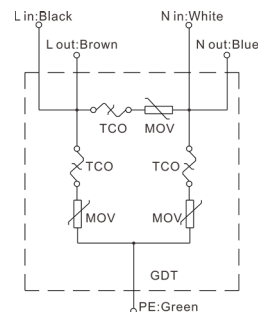
## 关键特性 Key Features

- IP65
- 可选防水连接器  
Optional Waterproof Connector
- 共模GDT可选  
GDT for Common Mode Optional
- 失效指示可选  
Failure Indication Optional
- 带热保护功能  
With Thermal Protection Function

## 应用领域 Applications

- 户外照明供电系统  
Power System of Outdoor Lighting
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Power System of Telecom
- 电动汽车供电系统  
Power System of EV

## 电路原理 Schematics

SD10ExxxAx Series  
Fig. 46SD10ExxxGx Series  
Fig. 47SD10ExxxLx Series  
Fig. 48SD10ExxxNx Series  
Fig. 49SD10ExxxAx Series  
Fig. 50SD10ExxxGx Series  
Fig. 51SD10ExxxLx Series  
Fig. 52SD10ExxxNx Series  
Fig. 53



## 技术参数 Specifications

型号 Model	最大连续 工作电压 Max. Continuous Operating Voltage	标称放电 电流 Nominal Discharge Current (8/20 μs)	最大放电 电流 Max. Discharge Current (8/20 μs)	电压保护 水平 Voltage Protection Level	额定电流 <sup>a</sup> Rated Current	响应时间 Response Time	外部过流 保护 <sup>b</sup> External Over- Current Protection	产品 原理图 Product Schematics
	$U_c$	$I_n$	$I_{max}$	$U_p$	$I_r$			
	(Vac)	(kA)	(kA )	(V)	(A)			
SD10E120AH	150	10	20	1200	-	<100	20	Fig. 46
SD10E277AH	320	10	20	1800	-	<100	20	Fig. 46
SD10E347AH	420	10	20	2200	-	<100	20	Fig. 46
SD10E480AH	550	10	20	3000	-	<100	20	Fig. 46
SD10E120GH	150	10	20	1200	-	<100	20	Fig. 47
SD10E277GH	320	10	20	1800	-	<100	20	Fig. 47
SD10E347GH	420	10	20	2200	-	<100	20	Fig. 47
SD10E480GH	550	10	20	3000	-	<100	20	Fig. 47
SD10E120LH	150	10	20	1000	-	<25	20	Fig. 48
SD10E277LH	320	10	20	1500	-	<25	20	Fig. 48
SD10E347LH	420	10	20	2000	-	<25	20	Fig. 48
SD10E480LH	550	10	20	2800	-	<25	20	Fig. 48
SD10E120NH	150	10	20	1000	-	<25	20	Fig. 49
SD10E277NH	320	10	20	1500	-	<25	20	Fig. 49
SD10E347NH	420	10	20	2000	-	<25	20	Fig. 49
SD10E480NH	550	10	20	2800	-	<25	20	Fig. 49
SD10E120AHT	150	10	20	1000	7	<100	20	Fig. 50
SD10E277AHT	320	10	20	1800	7	<100	20	Fig. 50
SD10E347AHT	420	10	20	2200	7	<100	20	Fig. 50
SD10E480AHT	550	10	20	3000	7	<100	20	Fig. 50
SD10E120GHT	150	10	20	1000	7	<100	20	Fig. 51
SD10E277GHT	320	10	20	1800	7	<100	20	Fig. 51
SD10E347GHT	420	10	20	2200	7	<100	20	Fig. 51
SD10E480GHT	550	10	20	3000	7	<100	20	Fig. 51
SD10E120LHT	150	10	20	800	7	<25	20	Fig. 52
SD10E277LHT	320	10	20	1500	7	<25	20	Fig. 52
SD10E347LHT	420	10	20	2000	7	<25	20	Fig. 52
SD10E480LHT	550	10	20	2800	7	<25	20	Fig. 52
SD10E120NHT	150	10	20	800	7	<25	20	Fig. 53
SD10E277NHT	320	10	20	1500	7	<25	20	Fig. 53
SD10E347NHT	420	10	20	2000	7	<25	20	Fig. 53
SD10E480NHT	550	10	20	2800	7	<25	20	Fig. 53

<sup>a</sup>: 额定电流为热熔断体额定电流 Rated Current for the Thermal Fuse .

<sup>b</sup>: 推荐外部过流保护装置断路器型号: C 20A, 曲线C (单独设置或主回路中)。

Recommended External Circuit Breaker Model: C 20 A, Curve C (Individually Set or Main Circuit).

## 执行标准 Designed to Standards

- UL 1449 Fourth Edition
- EN / IEC 61643-11
- IEEE C62.41.2

## 认证信息 Agency Information

- UL / CUL





设计、制造、销售电路保护元器件

Design, Manufacture, Market Circuit Protection Components

UL 60691 & UL 1449目击实验室

WTDP Lab for UL 60691 & UL 1449

**[www.SETfuse.com](http://www.SETfuse.com)**

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