

SPD Module

Surge Protective Device Module

SM15SxxxP3 Series



Description

SM15SxxxP3 Series is a fail-safe device combined with ATCO, MOV and GDT, which is specially designed to be used on PCB for overvoltage protection. Its built-in thermal protection element prevents fire hazard under the degradation of varistor or sustained overvoltage conditions. Compared with the discrete SPD, SM15SxxxP3 Series is more space saving. It is also convenient for users to design and install.

Features

- High Reliability
- Small Size
- Combination Technology of ATCO, MOV and GDT
- UL 1449 Type 4CA
- All-mode Protection

Applications

- Telecom Equipment
- AC / DC Power Supply
- Uninterruptable Power Supply (UPS)
- Surge Protective Device (SPD)

Agency Approvals

Agency	Standards	No.
	UL1449	on request
	EN 61643-11	on request
Environment	RoHS & REACH	Compliant

Schematics

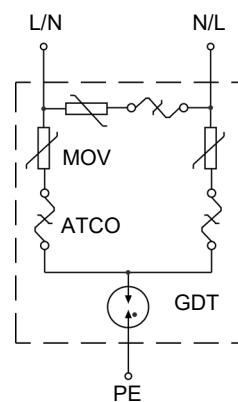


FIGURE SM15SxxxP3-1

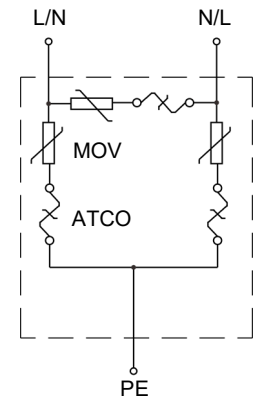


FIGURE SM15SxxxP3-2

Part Numbering System

SM 15S 621 P3 G B B -001

Other Options

Connection
B: Parallel Circuit Without Remote Signal

Installation
B: PCB Installation Mode

Circuit Characteristic
G: With GDT
N: Without GDT

Quantity of Protection Mode
P3: Three Protection Modes

Nominal Varistor Voltage

820	621
82×10^0 =82 V	62×10^1 =620 V

Design Sequence

Product Category

Glossary

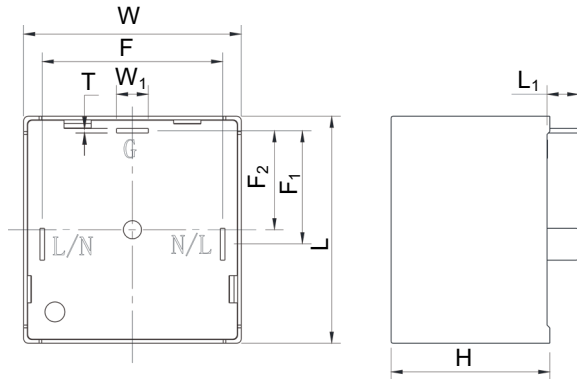
Item	Description
U_p	Voltage Protection Level Maximum voltage to be expected at the SPD terminals due to an impulse stress with defined voltage steepness and an impulse stress with a discharge current with given amplitude and wave shape. — (IEC 61643-11)
8/20 μ s	8/20 Current Impulse Current impulse with a nominal virtual front time of 8 μ s and a nominal time to half-value of 20 μ s. — (IEC 61643-11)
1.2/50 μ s	1.2/50 Voltage Impulse Voltage impulse with a nominal virtual front time of 1,2 μ s and a nominal time to half-value of 50 μ s. — (IEC 61643-11)
U_c	Maximum Continuous Operating Voltage Maximum r.m.s. voltage, which may be continuously applied to the SPD's mode of protection. — (IEC 61643-11)
I_n	Nominal Discharge Current Crest value of the current through the SPD having a current waveshape of 8/20 μ s. — (IEC 61643-11)
I_{max}	Maximum Discharge Current Crest value of a current through the SPD having an 8/20 μ s waveshape and magnitude according to the manufacturers specification. I_{max} is equal to or greater than I_n . — (IEC 61643-11)
Modes of Protection	Modes of Protection An intended current path, between terminals that contains protective components, e.g. line-to-line, line-to-earth, line-to-neutral, neutral-to-earth.
TCO	Thermal-Link A non-resettable device incorporating a THERMAL ELEMENT which will open a circuit once only when exposed for a sufficient length of time to a temperature in excess of that for which it has been designed.
ATCO	Alloy Thermal-Link Alloy Type Thermal-Link, Alloy is the thermal element.

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Dimensions (mm)



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

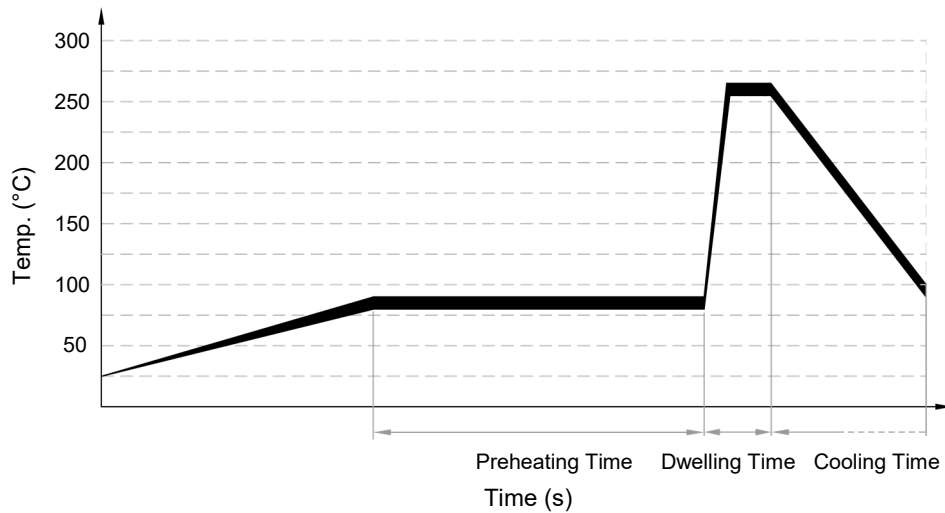
Specifications

Model	Max. Continuous Operating Voltage		Nominal Discharge Current (8/20 μs)	Max. Discharge Current (8/20 μs)	Voltage Protection Level	Response Time	External Overcurrent Protection ^a	Schematics	Agency Approvals	
	U _c		I _n	I _{max}	U _p					
	(VAC)	(VDC)	(kA)	(kA)	(V)	(ns)	(A)	FIGURE		
SM15S820P3NBB	50	65	2.5	5	400	<25	10	SM15SxxxP3-2		
SM15S820P3GBB	50	65	2.5	5	400	<100	10	SM15SxxxP3-1		
SM15S101P3NBB	60	85	2.5	5	400	<25	10	SM15SxxxP3-2		
SM15S101P3GBB	60	85	2.5	5	400	<100	10	SM15SxxxP3-1		
SM15S121P3NBB	75	100	2.5	5	500	<25	10	SM15SxxxP3-2		
SM15S121P3GBB	75	100	2.5	5	500	<100	10	SM15SxxxP3-1		
SM15S201P3NBB	130	-	5	10	800	<25	10	SM15SxxxP3-2	●	
SM15S201P3GBB	130	-	5	10	800	<100	10	SM15SxxxP3-1	●	
SM15S221P3NBB	140	-	5	10	800	<25	10	SM15SxxxP3-2	●	
SM15S221P3GBB	140	-	5	10	800	<100	10	SM15SxxxP3-1	●	
SM15S241P3NBB	150	-	5	10	800	<25	10	SM15SxxxP3-2	●	
SM15S241P3GBB	150	-	5	10	800	<100	10	SM15SxxxP3-1	●	
SM15S271P3NBB	175	-	5	10	800	<25	10	SM15SxxxP3-2	●	
SM15S271P3GBB	175	-	5	10	800	<100	10	SM15SxxxP3-1	●	
SM15S471P3NBB	300	-	5	10	1200	<25	10	SM15SxxxP3-2	●	
SM15S471P3GBB	300	-	5	10	1200	<100	10	SM15SxxxP3-1	●	
SM15S511P3NBB	320	-	5	10	1500	<25	10	SM15SxxxP3-2	●	
SM15S511P3GBB	320	-	5	10	1500	<100	10	SM15SxxxP3-1	●	
SM15S561P3NBB	350	-	5	10	1500	<25	10	SM15SxxxP3-2	●	
SM15S561P3GBB	350	-	5	10	1500	<100	10	SM15SxxxP3-1	●	●
SM15S621P3NBB	385	-	5	10	1500	<25	10	SM15SxxxP3-2	●	
SM15S621P3GBB	385	-	5	10	1500	<100	10	SM15SxxxP3-1	●	●

Note:

a: Recommended External Circuit Breaker Model C 10 A, Curve C.

Wave Soldering Parameters (Reference)



Item	Temp. (°C)	Time (s)
Preheating	80 to 90	60 to 150
Dwelling	250 to 260	2 to 4

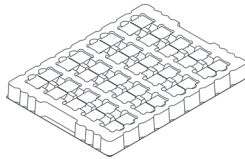
Note:

The wave soldering parameters are for reference only. Before SPD module is for practice usage, relative validation is recommended.

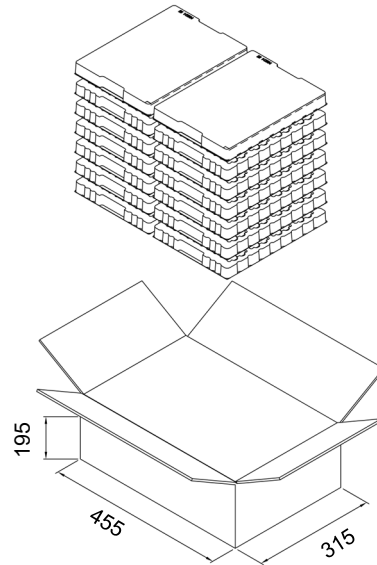
Recommended Hand-Soldering Parameters

Item	Condition
Iron Temperature	350 °C (Max.)
Soldering Time	4 seconds (Max.)
Distance between Soldering Point and the Bottom of Product	2 mm (Min.)

Packaging Information



12 Trays



- Unit: mm
- Please contact us if you have special packaging requirements.

Item	Tray	Carton
Dimensions (mm)	295 × 220	455 × 315 × 195
Quantity (PCS)	40	480
Gross Weight (kg)		(11.2 - 16.5) ± 10%

Note:

The gross weight of each carton will be different because of the difference of product model. It depends on the voltage of the product. The gross weight is for reference only, please contact us for more details.



ATTENTION

SPD

SPD

Usage

1. Frequency range is from 47 Hz to 63 Hz.
2. The voltage applied continuously to the SPD module must not exceed its maximum continuous operating voltage U_c .
3. When atmosphere press is from 80 kPa to 106 kPa, the related altitude shall be from 2000 meters to - 500 meters.
4. Do not touch the product body or pins directly when power is on, to avoid electric shock.

Replace

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

Storage

Do not store SPD module at high temperature, high humidity or corrosive gas environment, to avoid oxidation of the lead wires. Use them up within 1 year after receiving the goods.

Installation Position

Do not install SPD module to the place that may suffer severe vibration.