

SPD Module

Surge Protective Device Module

SM34SxxxP2 Series



Description

SM34SxxxP2 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, SM34SxxxP2 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
- Remote Signaling Contact (Optional)
- UL 1449 Type 4CA

Applications

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

Agency Approvals

Agency	Standards	No.
	UL1449 4th	on request
	EN 61643-11	on request
Environment	RoHS & REACH	Compliant

Part Numbering System

SM 34S 561 P2 G B B - 001

Other Options

Connection

A: Parallel Circuit With Remote Signal
B: Parallel Circuit Without Remote Signal

Installation

B: PCB Installation Mode

Circuit Characteristic

G: With GDT
N: Without GDT

Quantity of Protection Mode

P2: Two Protection Modes

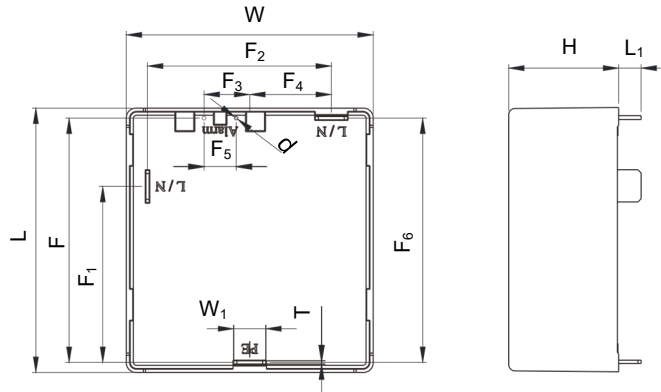
Nominal Varistor Voltage

820	561
82×10^0 =82 V	56×10^1 =560 V

Design Sequence

Product Category

Dimensions (mm)



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

Schematics

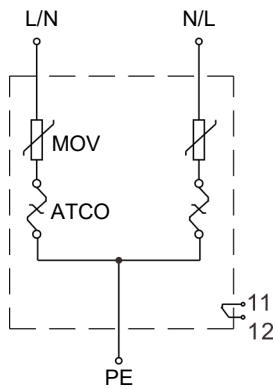


FIGURE SM34SxxxP2-1

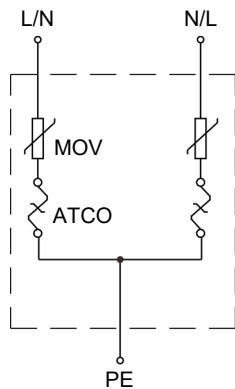


FIGURE SM34SxxxP2-2

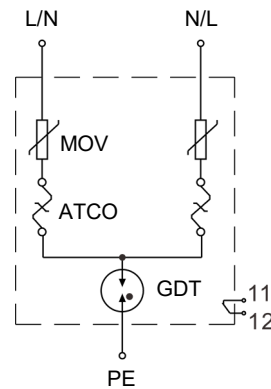


FIGURE SM34SxxxP2-3

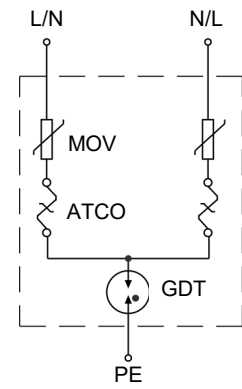


FIGURE SM34SxxxP2-4

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.

Specifications

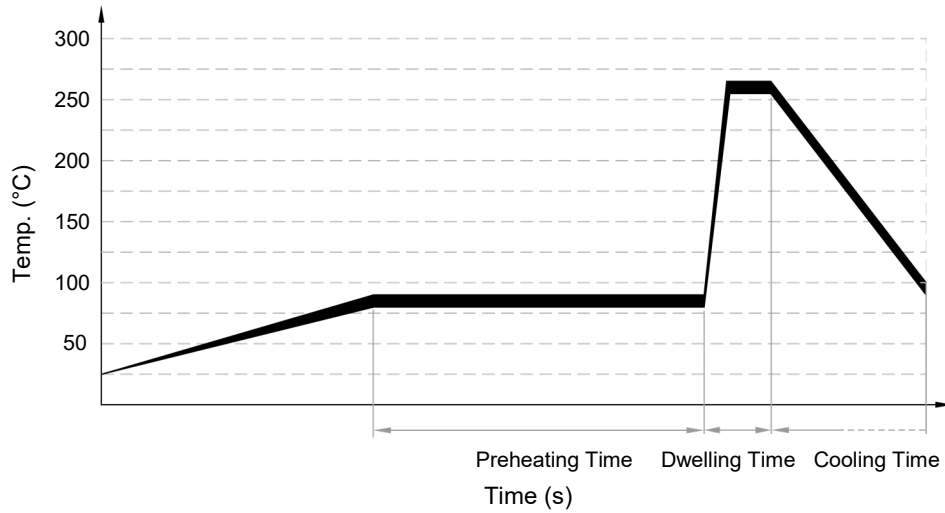
Model	Max. Continuous Operating Voltage		Nominal Discharge Current (8/20 μs)	Max. Discharge Current (8/20 μs)	Voltage Protection Level	Response Time	External Overcurrent Protection ^a	Schematics	Agency Approvals	
	U_c		I_n	I_{max}	U_p					
	(VAC)	(VDC)	(kA)	(kA)	(V)	(ns)	(A)	FIGURE	UL, CUL	TUV
SM34S680P2GB*	40	56	10	20	400	<100	32	SM34SxxxP2-3/4		
SM34S820P2GB*	50	65	15	30	400	<100	32	SM34SxxxP2-3/4		
SM34S101P2GB*	60	85	15	30	500	<100	32	SM34SxxxP2-3/4		
SM34S201P2GB*	130	-	20	40	700	<100	32	SM34SxxxP2-3/4	●	
SM34S221P2GB*	140	-	20	40	800	<100	32	SM34SxxxP2-3/4	●	
SM34S241P2GB*	150	-	20	40	800	<100	32	SM34SxxxP2-3/4	●	
SM34S271P2GB*	175	-	20	40	800	<100	32	SM34SxxxP2-3/4	●	
SM34S431P2GB*	275	-	20	40	1500	<100	32	SM34SxxxP2-3/4	●	●
SM34S471P2GB*	300	-	20	40	1500	<100	32	SM34SxxxP2-3/4	●	●
SM34S511P2GB*	320	-	20	40	1500	<100	32	SM34SxxxP2-3/4	●	●
SM34S561P2GB*	350	-	20	40	1500	<100	32	SM34SxxxP2-3/4	●	
SM34S680P2NB*	40	56	10	20	400	<25	32	SM34SxxxP2-1/2		
SM34S820P2NB*	50	65	15	30	400	<25	32	SM34SxxxP2-1/2		
SM34S101P2NB*	60	85	15	30	500	<25	32	SM34SxxxP2-1/2		
SM34S201P2NB*	130	-	20	40	700	<25	32	SM34SxxxP2-1/2	●	
SM34S221P2NB*	140	-	20	40	800	<25	32	SM34SxxxP2-1/2	●	
SM34S241P2NB*	150	-	20	40	800	<25	32	SM34SxxxP2-1/2	●	
SM34S271P2NB*	175	-	20	40	800	<25	32	SM34SxxxP2-1/2	●	
SM34S431P2NB*	275	-	20	40	1500	<25	32	SM34SxxxP2-1/2	●	
SM34S471P2NB*	300	-	20	40	1500	<25	32	SM34SxxxP2-1/2	●	
SM34S511P2NB*	320	-	20	40	1500	<25	32	SM34SxxxP2-1/2	●	
SM34S561P2NB*	350	-	20	40	1500	<25	32	SM34SxxxP2-1/2	●	

Notes:

a: Recommended External Circuit Breaker Model C 32 A, Curve C.

*: May be A or B.

Wave Soldering Parameters (Reference)



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

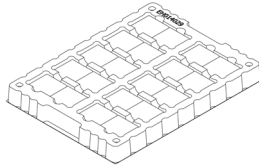
Note:

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

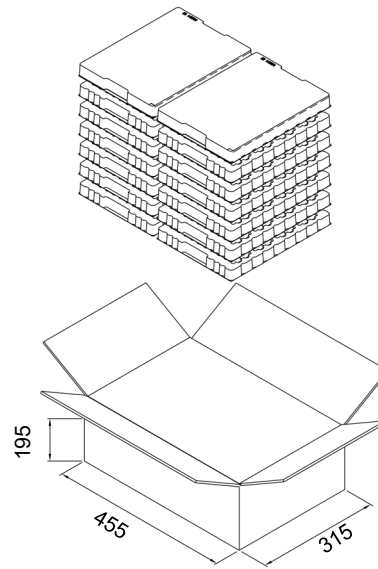
Recommended Hand-Soldering Parameters

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)	20	240
Gross Weight (kg)		(10.6 - 17.9) ± 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.