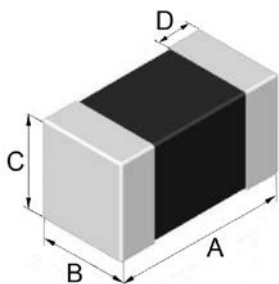


SMD Transient Voltage Suppressors

TVSM1206SHNF-Series

1. Dimension



Series	A(mm)	B(mm)	C(mm)	D(mm)
1206	3.20+0.60/-0.20	1.60+0.40/-0.20	1.90 max.	0.50±0.20

2. Part Numbering

TVSM 1206 SHN F 120 - 602 V □

A B C D E F G H

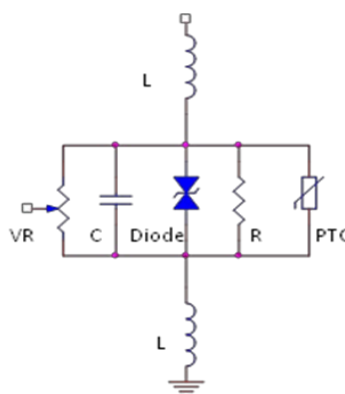
A: Series	Multilayer Varistor
B: Dimension	
C: Category Code	High Performance Surge Protection Non-PoE
D: Product Grade	General Grade
E: Voltage Code	120=Breakdown Voltage 12V
F: Characteristic Code	602=Surge Voltage 6KV
G: Characteristic Unit Code	V=Voltage
H: Inner Code	

3. Features

1. RoHS compliant
2. SMD type body size 1206
3. Meet IEC61000-4-5 / K21 standards
4. Bidirectional and symmetrical V/I characteristics
5. Large withstanding surge current capability
6. Excellent low leakage current
7. Operating temperature range : -55~+125°C
8. Multi-Layers construction provides higher power dissipation

Equivalent Circuit

L	Body Inductance
C	Device Capacitance
VR	Voltage Variable Resistor
R	Insulation Resistor
Diode	Voltage Clamped
PTC	for Low Leakage Current



4. Technology Data

TAI-TECH Part Number	Maximum allowable continuous AC voltage @ 50-60Hz V_{RMS} (V)	Maximum allowable continuous DC voltage V_{DC} (V)	Breakdown voltage V_B (V)	Maximum allowable clamping voltage V_C (V)	Maximum peak current (10/700 μ s) I_{Peak} (A)	Maximum surge voltage (10/700 μ s) V_{Surge} (KV)
TVSM1206SHNF120-402V	6	9	12(12~20)	30	100	4
TVSM1206SHNF120-602V	6	9	12(12~20)	30	150	6

Notes:

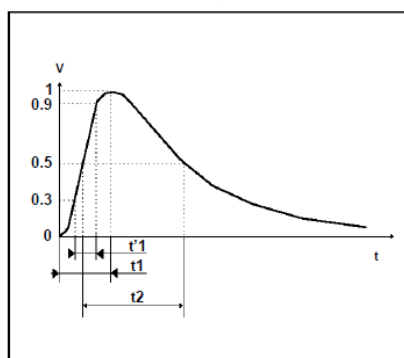
1. The breakdown voltage was measured at 1mA current.
2. The clamping voltage was measured at 8/20 μ s standard current, 1206(1A).
3. The surge current was tested at 10/700 μ s waveform, $R_i=40\Omega$. Common-mode testing is to test all data lines while the GND.

4-1. Reference Data			
ITEM	Symbol	Unit	Value
Typical capacitance value measured at 1KHz	C	pF	3200 @TVSM1206SHNF120-402V 3850 @TVSM1206SHNF120-602V
Response time	T_{rise}	ns	< 1
Non-linear coefficient	α		>20
Leakage current at $V_B \times 80\%$ (at initial state)	I_{VB}	μ A	< 10
Leakage current at $V_B \times 80\%$ (after surge test)	I_{VBA}	μ A	< 80
Operation ambient temperature	T_{OPT}	$^{\circ}$ C	-55~+125
Storage temperature range	T_{STG}	$^{\circ}$ C	-55~+150
4-2. Other Data			
Body		Nano special ceramic	
End termination		Ag/Ni/Sn	
Packaging		Reel	
Complies with standard		IEC61000-4-5 ITU-T K20, K21	
Complies with RoHs standard		Yes	
Lead content		< 1000 ppm	
Marking		None	

Notes :

1. The capacitance value only for customer reference, it's not formal specification.

5. Surge Wave Form



10/700 μ s waveform current

K21 Standards

SEVERITY LEVEL	t_1 ($\approx 1.67t'_1$)	t_2
1	10 μ s	700 μ s