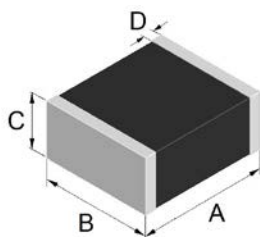


SMD Transient Voltage Suppressors

TVSM2220SHXO-Series-A

1. Dimension



Series	A(mm)	B(mm)	C(mm)	D(mm)
2220	6.00+0.70/-0.30	5.30+0.50/-0.30	3.60 max	0.50+0.35/-0.10

2. Part Numbering

TVSM 2220 SHX O 470 - 502 A □

A B C D E F G H

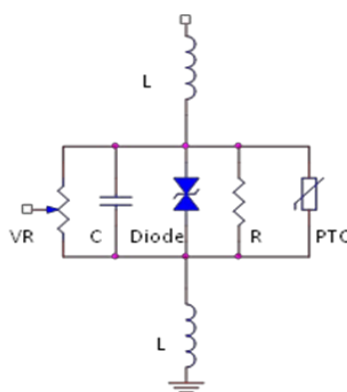
A: Series Multilayer Varistor
 B: Dimension
 C: Category Code High Performance Surge Protection
 D: Product Grade O =Industrial Grade
 E: Voltage Code 470=Breakdown Voltage 47V
 F: Characteristic Code 502=Peak Current 5000A
 G: Characteristic Unit Code A=Amp
 H: Inner Code

3. Features

1. RoHS compliant
2. SMD type body size 2220
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)	Maximum allowable continuous DC voltage (V)	Breakdown voltage (V)	Maximum allowable clamping voltage (V)	Maximum peak current (8/20 μ s) (A)
TVSM2220SHXO470-502A	30	38	47($\pm$ 10%)	85	5000

Notes :

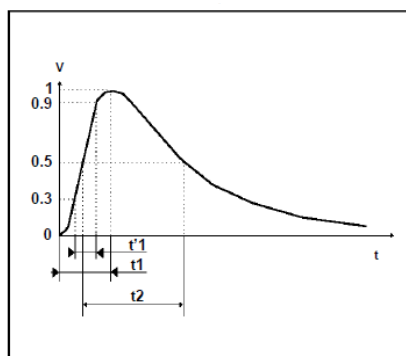
1. The breakdown voltage was measured at 1mA current.
2. The clamping voltage was measured at 8/20 μ s standard current, 2220(10A)

4-1. Reference Data			
ITEM	Symbol	Unit	Value
Typical capacitance value measured at 1KHz	C	pF	9900
Response time	Trise	ns	< 1
Non-linear coefficient	α		>35
Leakage current at $V_B \times 80\%$ (at initial state)	I_{VB}	μ A	< 15
Leakage current at $V_B \times 80\%$ (after surge test)	I_{VBA}	μ A	< 80
Operation ambient temperature	T _{OPT}	°C	-50~+125
Storage temperature range	T _{STG}	°C	-50~+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 :

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

5. Surge Wave Form



IEC61000-4-5 Standards

SEVERITY LEVEL	t1 (=1.67t'1)	t2
1	8 μ s	20 μ s
2	10 μ s	1000 μ s

8/20 μ s and 10/1000 μ s waveform current