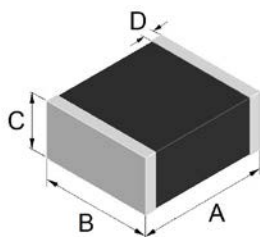


SMD Transient Voltage Suppressors

TVSM2220SHXL-Series

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 L 471 - 182 A □

A B C D E F G H

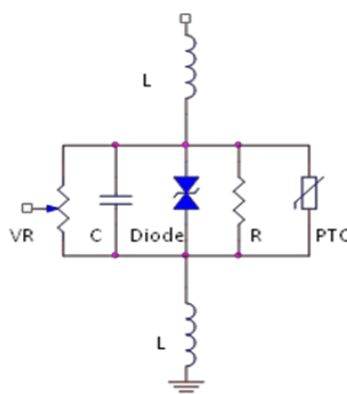
A: Series Multilayer Varistor
 B: Dimension
 C: Category Code High Performance Surge Protection
 D: Product Grade L =Lighting Grade
 E: Voltage Code 471=Breakdown Voltage 470V
 F: Characteristic Code 182=Peak Current 1800A
 G: Characteristic Unit Code A=Amp
 H: Inner Code

3. Features

1. RoHS compliant
2. SMD type body size 2220
3. Meet IEC61000-4-5 standards
4. Bidirectional and symmetrical V/I characteristics
5. Large withstanding surge current capability
6. Operating temperature range : -40~+105℃
7. 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)
TVSM2220SHXL471-182A	300	385	470 $\pm$ 10%	775	1800

Notes :

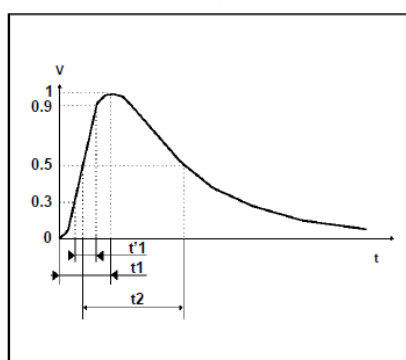
1. The breakdown voltage was measured at 1mA.
2. The clamping voltage was measured at 8/20 μ s standard current, 2220(10A)
3. The peak current was tested at 8/20 μ s waveform.

4-1. Reference Data			
ITEM	Symbol	Unit	Value
Typical capacitance value measured at 1KHz	C	pF	600
Response time	Trise	ns	< 1
Non-linear coefficient	α		> 15
Leakage current at $V_B \times 80\%$ (at initial state)	I_{VB}	μ A	< 50
Leakage current at $V_B \times 80\%$ (after surge test)	I_{VBA}	μ A	< 200
Operation ambient temperature	T_{OPT}	$^{\circ}$ C	-40~+105
Storage temperature range	T_{STG}	$^{\circ}$ C	-40~+150
3-2. Other Data			
Body	Nano special ceramic		
End termination	Ag/Ni/Sn		
Packaging	Reel		
Complies with standard	IEC61000-4-5		
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



IEC61000-4-5 Standards

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

8/20 μ s waveform current