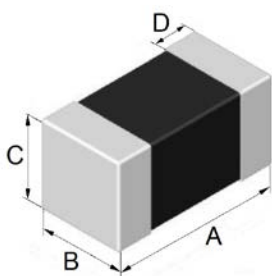


# SMD Transient Voltage Suppressors

TVSM1206SHPF-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 SHP F 750 - 601 A □

A B C D E F G H

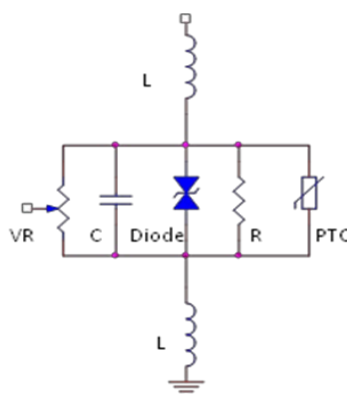
|                             |                                            |
|-----------------------------|--------------------------------------------|
| A: Series                   | Multilayer Varistor                        |
| B: Dimension                |                                            |
| C: Category Code            | High Performance Surge Protection with PoE |
| D: Product Grade            | General Grade                              |
| E: Voltage Code             | 750=Breakdown Voltage 75V                  |
| F: Characteristic Code      | 601=Peak Current 600A                      |
| G: Characteristic Unit Code | A=Amp                                      |
| 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℃
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<br>Part Number | Maximum<br>allowable<br>continuous<br>AC voltage<br>@ 50-60Hz<br>(V) | Maximum<br>allowable<br>continuous<br>DC voltage<br>(V) | Breakdown<br>voltage<br>(V) | Maximum<br>allowable<br>clamping<br>voltage<br>(V) | Maximum<br>peak current<br>(8/20μs)<br>(A) |
|-------------------------|----------------------------------------------------------------------|---------------------------------------------------------|-----------------------------|----------------------------------------------------|--------------------------------------------|
| TVSM1206SHPF750-601A    | 48                                                                   | 60                                                      | 75(71~79)                   | 100                                                | 600                                        |

Notes :

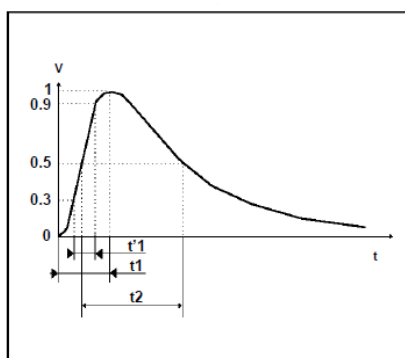
1. The breakdown voltage was measured at 1mA.
2. The clamping voltage was measured at 8/20μs standard current, 1206(1A).

| 4-1. Reference Data                            |                  |                                |          |
|------------------------------------------------|------------------|--------------------------------|----------|
| ITEM                                           | Symbol           | Unit                           | Value    |
| Typical capacitance value measured at 1KHz     | C                | pF                             | 400      |
| Response time                                  | Trise            | ns                             | < 1      |
| Non-linear coefficient                         | Q                |                                | >30      |
| Leakage current at Vv x 80% (at initial state) | I <sub>VB</sub>  | μA                             | < 10     |
| Leakage current at Vv x 80% (after surge test) | I <sub>VBA</sub> | μA                             | < 80     |
| Operation ambient temperature                  | T <sub>OPT</sub> | °C                             | -55~+125 |
| Storage temperature range                      | T <sub>STG</sub> | °C                             | -55~+125 |
| 4-2. Other Data                                |                  |                                |          |
| Body                                           |                  | Nano special ceramic           |          |
| End termination                                |                  | Ag/Ni/Sn                       |          |
| Packaging                                      |                  | Reel                           |          |
| Complies with standard                         |                  | IEC61000-4-5<br>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



### IEC61000-4-5 Standards

| SEVERITY LEVEL | t1<br>(=1.67t'1) | t2     |
|----------------|------------------|--------|
| 1              | 8μs              | 20μs   |
| 2              | 10μs             | 1000μs |

8/20μs and 10/1000μs waveform current