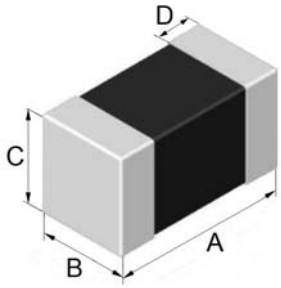
SMD Transient Voltage Suppressors TVSM1206LCXV-Series

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	LCX	V	240	-	060	J	□
A	B	C	D	E		F	G	H

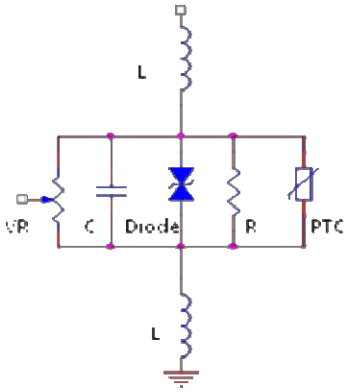
A: Series	Multilayer Varistor
B: Dimension	
C: Category Code	Load Dump Protection
D: Product Grade	Vehicle Grade
E: Voltage Code	240=Breakdown Voltage 24V
F: Characteristic Code	060= Load Dump Energy 6J
G: Characteristic Unit Code	J=Joule
H: Inner Code	

3. Features

1. RoHS compliant
2. SMD type
3. Meet ISO7637-2 pulse 5
4. Qualified based on AEC-Q200
5. Bidirectional and symmetrical V/I characteristics
6. Large withstanding surge current capability
7. Large load dump withstanding capability
8. Operating temperature range : -55~+125℃
9. 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. Rating and Characteristics

TAI-TECH Part Number	Continuous Operating Voltage (Max.)	breakdown Voltage (V)	Clamping Voltage (V) (Max.)	Peak Current (A)	Jump Start Voltage (V) (5min)	Load Dump (J) (10 times)	Response Time (nsec)	Leakage Current	Typical Capacitance Value @1K (pF)
TVSM1206LCXV240-060J	16 V_{DC}	24~27	40	500	24.5	6	1	5μA (at initial state) 50μA (after surge test)	2100
TVSM1206LCXV280-060J	16 V_{DC}	28	55	500	31	6	1	5μA (at initial state) 50μA (after surge test)	830

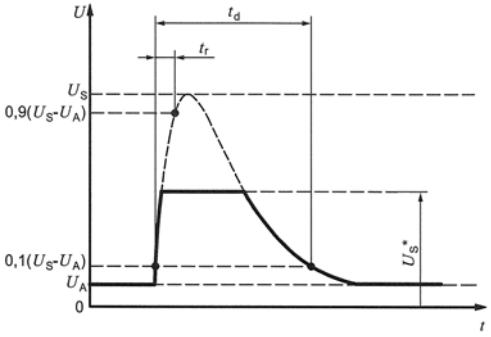
Notes :

1. The breakdown voltage was measured at 1mA.
2. The clamping voltage was measured at 8/20μs standard current, 1206(1A).
3. The peak current was tested at 8/20μs waveform.
4. Load dump meet ISO7637-2 pulse 5.
5. The leakage current was tested at working voltage.
6. The capacitance value only for customer reference, it's not formal specification.

4-1. Reference Data

Parameter	Value
Operation ambient temperature	-55~125℃
Storage temperature range	-55~150℃
Body	Nano Special Ceramic
End termination	Ag/Ni/Sn
Packaging	Reel
Complies with standard	IEC61000-4-5 ISO7637-2
Complies with RoHs standard	Yes
Lead content	< 1000 ppm
Marking	None

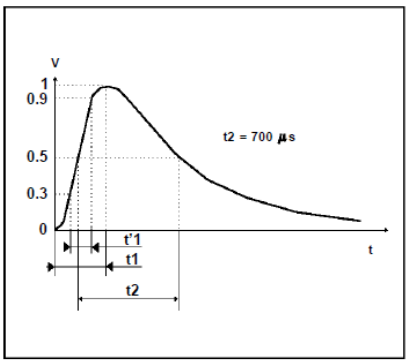
5. Load Dump and Surge Wave Forms



Load dump test waveform

ISO7637-2:2004 pulse 5B

Parameters	12V System	24V System
Pulse Voltage Us	79~101V	151~202V
Supply Voltage U_A	13.5V	27V
Output Resistance Ri	0.5~4Ω	1~8Ω
Pulse Voltage with Load Dump Suppression Us*	35	65
Pulse Width td	40~400ms	100~350ms
Rise Time tr	5~10ms	5~10ms



8/20µs waveform current

IEC61000-4-5 Standards

SEVERITY LEVEL	t1 (=1.67t'1)	t2
1	8µs	20µs