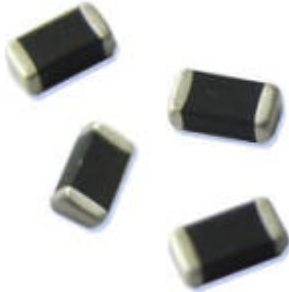


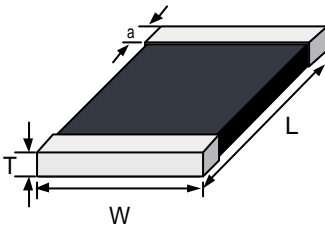


ESD Series SMD

Multilayer Ceramic Transient Voltage Suppressor for ESD Protection



Dimensions



Features

- Thin layer, high precise techniques
- Lead free
- Bi-directional clamping
- Ultra low capacity
- Available with Nickel/Tin end termination

Applications

Circuit board and ESD, EFT

Protection of:

- USB ports
- Keyboards
- Cellular Phones
- IEEE ports
- PDA/Handheld
- Sensors

Specifications

Packaging
Tape and Reel 0402(10,000 pcs)
T 7 inch reel 0603(4,000 pcs)
0805-1206(3,000 pcs)

Material

Body : Ceramic (ZnO)
Terminals : Ni/Sn plated (code "P")
Ag/Pt/Pd non plated (code "N" on request)

Operating Temperature
-55 to +125°C

Solderability
acc. to IEC 60068-2-58
235°C, 2s

Soldering Heat Resistance
260°C, 10 sec. (IEC 60068-2-58)
280°C, 5 sec. (IEC 60068-2-58)

Temperature coefficient (αV) of clamping voltage (V_c) @ specified test current
<0.01%/°C

Standards
IEC 61000-4-2
MIL-STD-883C

Maximum Ratings (125°C)						Specifications (25°C)			
Type	max. cont. working voltage	max. non-repetitive surge current (8/20 μs)	max. non-repetitive surge energy (10/1000 μs)	max.ESD clamp voltage 8kV contact	max. clamping voltage at spec. current (8/20 μs)	nominal varistor voltage at 10mA (DC) test current		typ. capacitance	typ. inductance
	V _{M(DC)} (V)	I TM (A)	W TM (J)	V _c (note2)	V _c (V@A)	V _{NDC(min)} (V)	V _{NDC(max)} (V)	C _{typ.} (pF)	L _{typ.} (nH)
JE0402ML180L	18,0	15	0.03	120	50 @ 1A	22	28	30	1.0
JE0402ML180A	18,0	15	0.03	120	50 @ 1A	22	28	40	1.0
JE0603ML180L	18,0	20	0.05	120	50 @ 1A	22	28	40	1.0
JE0603ML180A	18,0	20	0.05	120	50 @ 2A	22	28	100	1.0
JE0805ML180L	18,0	30	0.10	100	50 @ 2A	22	28	100	1.0
JE0805ML180A	18,0	30	0.10	100	50 @ 5A	22	28	500	1.0
JE1206ML180L	18,0	30	0.10	80	50 @ 5A	22	28	500	1.0
JE1206ML180A	18,0	30	0.10	80	50 @ 10A	22	28	800	1.0

Maximum Leakage V _{M(DC)}								
	JE0402ML180L	JE0402ML180A	JE0603ML180L	JE0603ML180A	JE0805ML180L	JE0805ML180A	JE1206ML180L	JE1206ML180A
	μA	μA	μA	μA	μA	μA	μA	μA
3.5V	0.08	0.08	0.08	0.08	0.15	0.15	0.30	0.30
5.5V	0.20	0.20	0.20	0.20	0.30	0.30	0.80	0.80
15V	1.50	1.50	3.00	3.00	3.00	3.00	3.00	3.00
18V	6.00	6.00	15.0	15.0	15.0	15.0	15.0	15.0

Note 1 : For applications of 18 V_{M(DC)} or less.Higher voltages, Please contact Jumbo Tek for availability.

Note 2 : Maximum ESD clamp voltage tested with IEC 1000-4-2 Human Body Model discharge test circuit and direct discharge to device terminals (IEC preferred test method) .

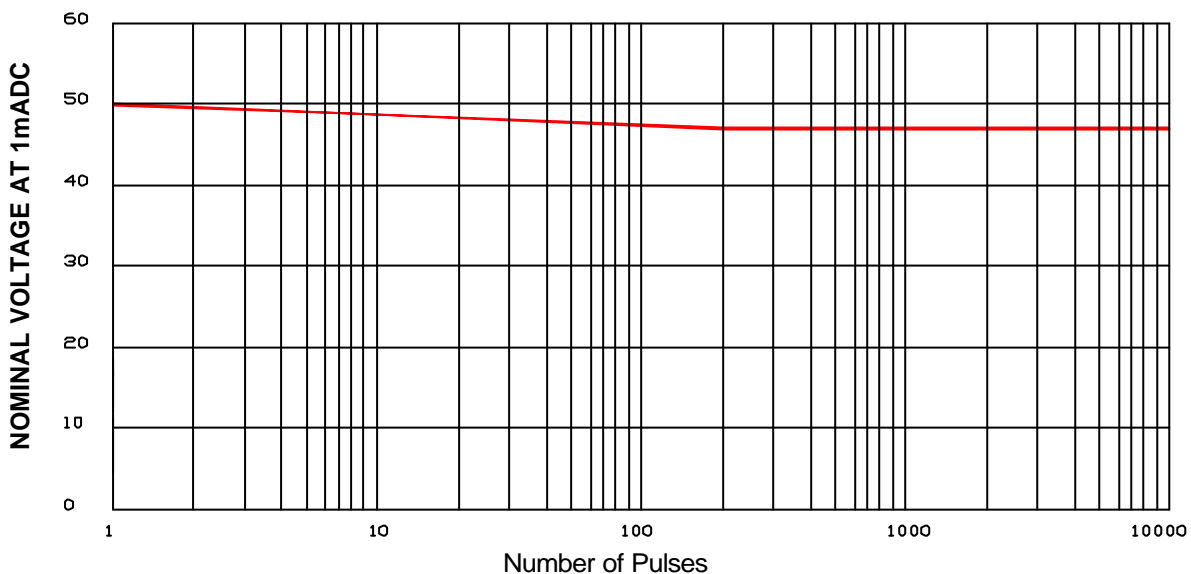
Note 3 : Capacitance may be customized, please contact Jumbo Tek for availability.

Order Information

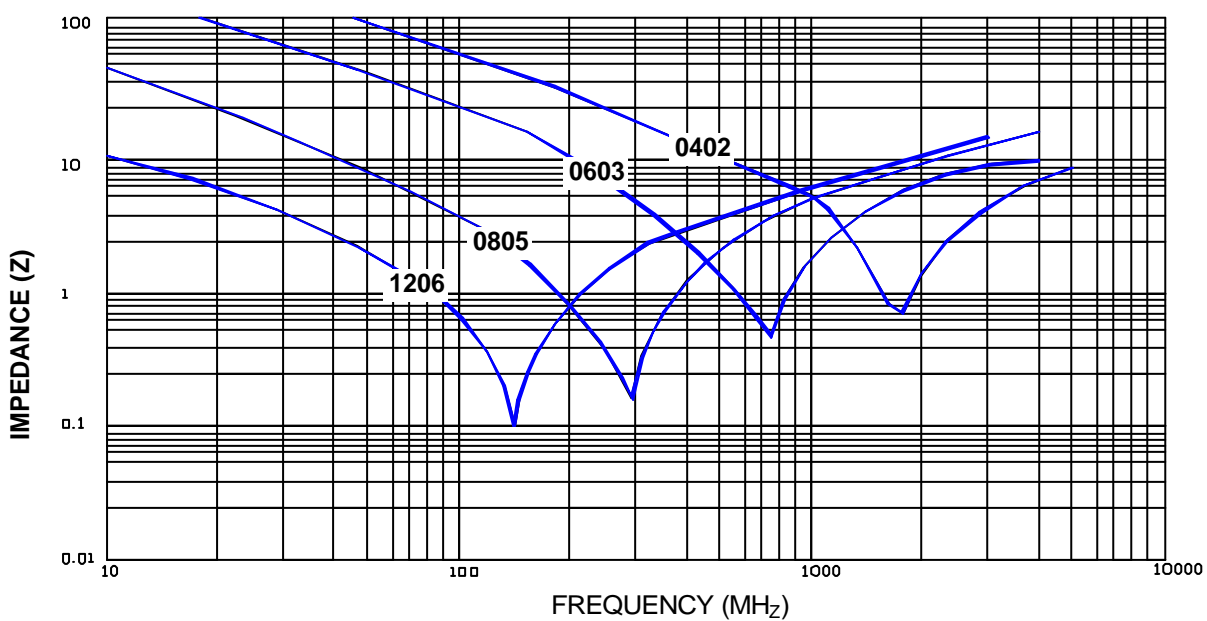
Qty.	Order-Number	Type	Terminal Code	Packaging
		JE0402ML180	L	T

Specifications are subject to change without notice

ESD Series SMD



**NOMINAL VOLTAGE STABILITY TO MULTIPLE ESD IMPULSES
(8KV CONTACT DISCHARGES PER IEC 61000-4-2)**



IMPEDANCE (Z) vs FREQUENCY TYPICAL CHARACTERISTIC