

1. What is JoinVa & LopiVa™ ?

Varistors (Variable Resistors) are voltage dependent resistors to protect active components against transients voltage including ESD and Surges because the resistance decrease with increasing voltage.

JoinVa & LopiVa™ which are produced by using Joinset's Joinchip technologies are consisted of varistor layers and electrodes on a ceramic substrate. The unique design, material and process guarantee that JoinVa & LopiVa™ have got the best mechanical, electrical and chemical properties as chip Varistors. JoinVa & LopiVa™ must meet your new requirements in quality and price.

JoinVa also could be used as s EMI filter when they are matching with Resistors or Inductors on the same ceramic substrate, and LopiVa™ are suitable for antenna and data transmission line due to their low capacitance.

Low capacitance provide LopiVa™ with low insertion loss in high frequency.

2. Advantages :

Fast response time	Good mechanical strength	Low insertion loss	Low price
--------------------	--------------------------	--------------------	-----------

3. Main applications : Protect active components against ESD and Surges :

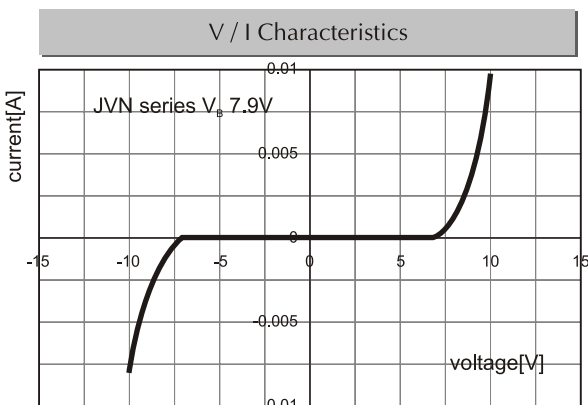
- Data transmission line: USB port, IEEE-1394, I/O data, HDMI
- Battery: Protection circuit module of 2nd battery, Battery charger
- Micom, Module, IC, LSI, Transistors, Amp
- LCD, LED, Microphone, Keyboard, Antenna, Connector.



4. Construction & Material :

EU-RoHS

	Multi-layer Chip Varistor	JoinVa & LopiVa™	JoinVa Cross Section
Material	Same material(varistor)	Hybrid(varistor+substrate)	
Thickness	Normal(0.5mm -)	Thin(0.3mm -)	
Mech. Strength	Normal	Strong	
Function	Limited	Wide	
Cross section			



Protection from transient voltage (ESD/Surge)

