



INPAQ

PRODUCT SPECIFICATION

DOCUMENT NO. ENS000018740

DESCRIPTION	DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY
CK0402 Series	Sandy	Amy	C.P	YuChiaChang

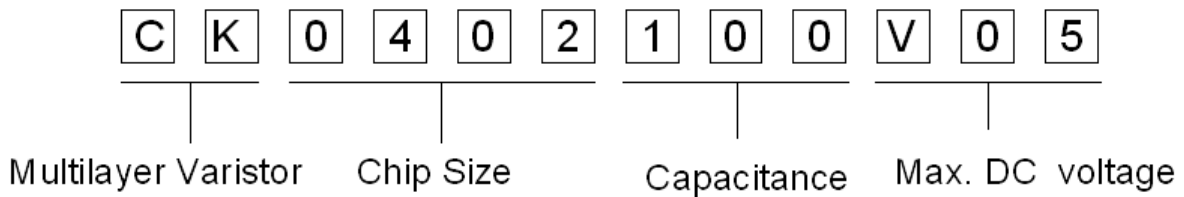
CK0402 Series Engineering Specification

1. Scope

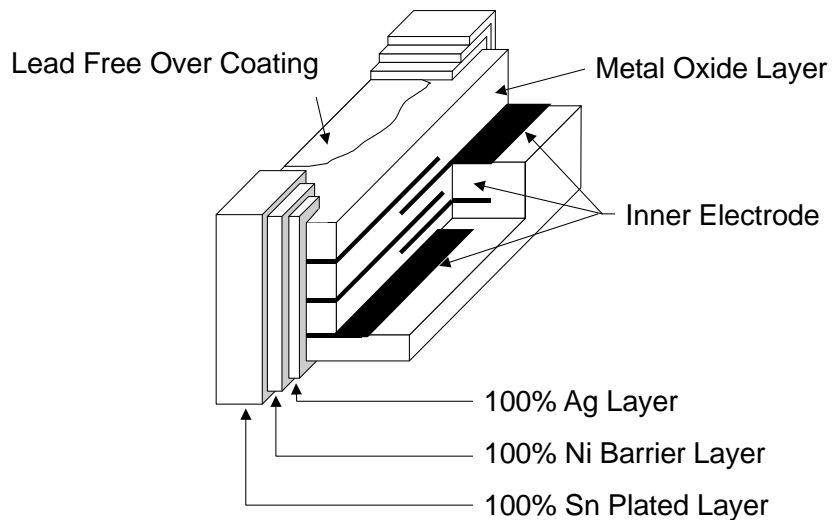
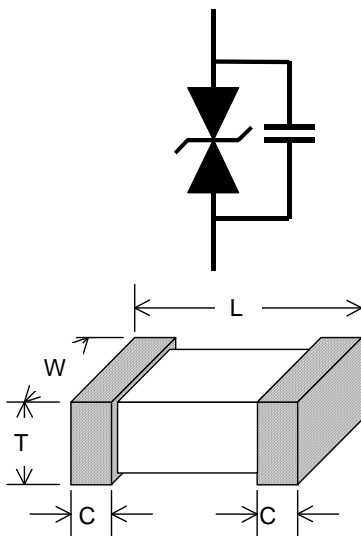
This specification is applicable to Chip Metal Oxide Varistor in multilayer technology. The customer designed part number drawing take precedence over this specification.

For RoHS Compliance.

2. Explanation of Part Number



3. Construction & Dimension



Unit: mm	0402
L	0.96±0.12
W	0.48±0.07
T	0.50±0.10
C	0.25±0.15

4. Part ratings and characteristics:

4.1. Rating(25±5°C)

	Working voltage	Capacitance
Symbol	V_{DC}	C_p
Units	Volts (Max.)	pF (Typ.)
Test Condition	< 50 μ A	1KHz/1MHz
CK0402100V05	5	10
CK0402220V05	5	22
CK0402330V05	5	33
CK0402470V05	5	47
CK0402101V05	5	100
CK0402271V05	5	300
CK0402151V09	9	155
CK0402900V14	14	90
CK04023R0V18	18	3
CK0402100V18	18	10
CK04025R0V05	5	5

V_{DC} – Maximum DC operating voltage the varistor can maintain and not exceed 50 μ A leakage current

C_p – Capacitance. The test condition is 1KHz (≥ 100 pF)/ 1MHz (<100pF), 1V_{rms}±10% and the environment temperature is 25±2°C.

5. General electrical specifications

5.1. General technical data

Operating temperature	-40 ... +85°C
Storage temperature (on board)	-40... +85°C
Response time	<1 ns
Solderability	245±5°C, 3 ±1sec
Solder leach resistance	260±5°C, 10 ±1sec

5.2. Storage Condition with package

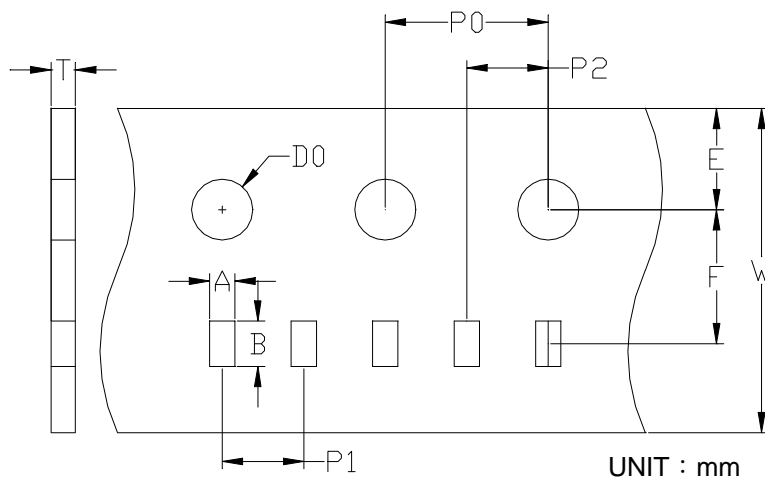
Storage Time: 12 months max
 Storage Temperature : 5 to 40°C
 Relative Humidity: to 65 %

6. Taping Package and Label Marking

6.1. Packaging method

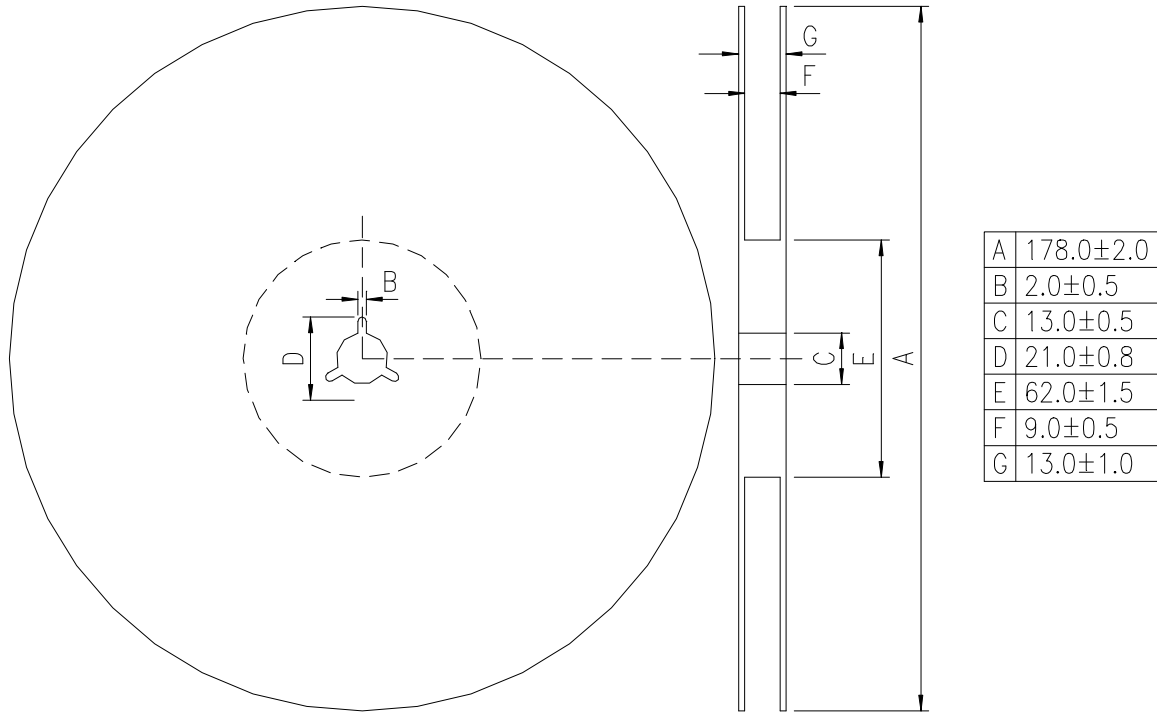
Products shall be heat-sealed in the chip pocket, spacing pitch 4-mm of plastic carrier tape with cover tape, and the carrier tape shall be reeled to the reel.

6.2. Carrier tape dimensions



Type	A	B	W	E	F	P0	P1	P2	D0	T
0402	0.59 ±0.03	1.12 ±0.03	8.0 ±0.1	1.75 ±0.05	3.5 ±0.05	4.0 ±0.1	2.0 ±0.05	2.0 ±0.05	1.55 ±0.05	0.60 ±0.03

6.3. Taping reel dimensions



6.4 Taping specifications

There shall be the portion having no product in both the head and the end of taping, and there shall be the cover tape in the head of taping.

6.5 Label Marking

The label specified as follows shall be put on the side of reel.

- (1) Part No.
- (2) Quantity
- (3) Lot No.

*Part No. And Quantity shall be marked on outer packaging.

6.6 Quantity of products in the taping package

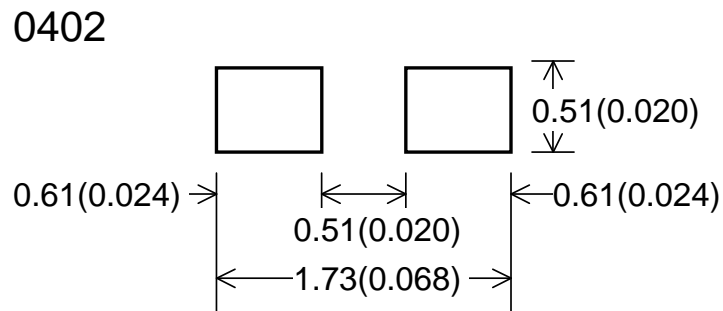
- (1) Standard quantity : 10,000pcs/Reel for CK0402 Series
- (2) Shipping quantity is a multiple of standard quantity.

7. Precautions for Handling

7.1. Solder cream in reflow soldering

Refer to the recommendable land pattern as printing mask pattern for solder cream.

- (1) Print solder in a thickness of 150 to 200 μm .
- (2) Dimensions: millimeters (inches)



7.2. Precaution for handling of substrate

Do not exceed to bend the board after soldering this product extremely.

(Reference examples)

- Mounting place must be as far as possible from the position, which is close to the break line of board, or on the line of large holes of board.
- Do not bend extremely the board, in mounting another components.
If necessary, use back-up pin (support pin) to prevent from bending extremely.
- Do not break the board by hand. We recommend using the machine or the jig to break it.

7.3. Precaution for soldering

Note that rapid heating, rapid cooling or local heating will easily damage this product.

Do not give heat shock over 100°C in the process of soldering. We recommend taking preheating and gradual cooling.

7.4. Recommendable reflow soldering

A	1 st rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 nd rising temperature	Preheating to 200°C	20s to 40s
D	Main heating	if 220°C if 230°C if 240°C if 250°C if 260°C	50s~60s 40s~50s 30s~40s 20s~40s 20s~40s
E	Regular cooling	200°C to 100°C	1°C/s ~ 4°C/s

*According to J-STD-020C

7.5. Soldering gun procedure

Note the follows, in case of using solder gun for replacement.

- (1) The tip temperature must be less than 280°C for the period within 3 seconds by using soldering gun less than 30 W.
- (2) The soldering gun tip shall not touch this product directly.

7.6. Soldering volume

Note that excess of soldering volume will easily get crack the body of this product.