



TMCR03-Chip Varistor

Feature:

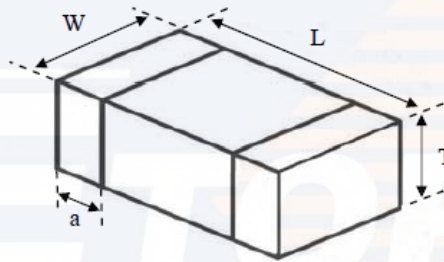
- Small in size
- In light weight
- Very Low Leakage Current
- Low residual pressure ratio, good protection performance
- Faster response, smaller voltage overshoot

Application: Laptops, digital cameras, PDAs, mobile phones, motherboards, routers, LCD modules, Internet phones, microphone headsets, etc.

Part Number:

TMCR03	-	1	2	3	4	5	6	7	8	9
↓		↓		↓		↓		↓		↓

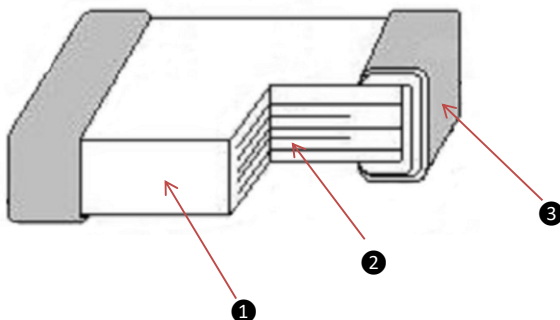
Produce Code TMCR03: Chip Varistor	Varistor Voltage: 220=22V 270=27V 470=47V 101=100V 391=390V 471=470V 102=1000V ...	Tolerance F=±1% G=±2% J=±5%	Size: 0603 0805 1206 1210 1812 2220	Packaging T:tape&reel B:bulk
--	---	---	--	---



Dimension(mm):

Type(inch)	L(mm)	W(mm)	T(mm)	a(mm)
0603	1.6±0.20	0.8±0.20	0.8±0.20	0.3±0.2
0805	2.0±0.20	1.2±0.20	0.9±0.20	0.50±0.30
1206	3.2±0.20	1.6±0.20	1.1±0.20	0.50±0.30
1210	3.2±0.20	2.5±0.20	1.3±0.20	0.50±0.30
1812	4.5±0.20	3.2±0.20	1.5±0.20	0.50±0.30
2220	5.7±0.3	5.0±0.3	1.0~2.5	0.70±0.30

Construction:



No.	Components
①	ZnO Semiconductor Ceramics for Chip Varistor
②	Internal Electrode (Ag or Ag-Pd)
③	Terminal Electrode (Ag/Ni/Sn three layers)



TMCR03-Chip Varistor

Electrical Characteristics

Item	Max. Working Voltage		Varistor Voltage @1mA DC	Max. Clamping Voltage (8/20 μ s)		Peak Current (8/20 μ s)	Operation Ambient Temperature
	V _{AC} (V)	V _{DC} (V)	V _{1mA} (V)	V _C (V)	I _C (A)	I _p (A)	
TMCR03-120K0603T	5.7	8	12 \pm 15%	27	1	30	-55 ~ +125 $^{\circ}$ C
TMCR03-160K0603T	7.8	11	16 \pm 15%	33	1	30	-55 ~ +125 $^{\circ}$ C
TMCR03-180K0603T	8.5	12	18 \pm 15%	34	1	30	-55 ~ +125 $^{\circ}$ C
TMCR03-330K0603T	17	24	33 \pm 10%	58	1	30	-55 ~ +125 $^{\circ}$ C
TMCR03-450K0603T	23.3	33	45 \pm 10%	79	1	35	-55 ~ +125 $^{\circ}$ C
TMCR03-120K0805T	5.7	8	12 \pm 15%	27	1	40	-55 ~ +125 $^{\circ}$ C
TMCR03-160K0805T	7.8	11	16 \pm 15%	33	1	35	-55 ~ +125 $^{\circ}$ C
TMCR03-180K0805T	8.5	12	18 \pm 15%	34	1	35	-55 ~ +125 $^{\circ}$ C
TMCR03-330K0805T	17	24	33 \pm 10%	58	1	35	-55 ~ +125 $^{\circ}$ C
TMCR03-450K0805T	23.3	33	45 \pm 10%	79	1	35	-55 ~ +125 $^{\circ}$ C
TMCR03-120K1206T	5.7	8	12 \pm 15%	27	1	40	-55 ~ +125 $^{\circ}$ C
TMCR03-160K1206T	7.8	11	16 \pm 15%	33	1	30	-55 ~ +125 $^{\circ}$ C
TMCR03-180K1206T	8.5	12	18 \pm 15%	34	1	30	-55 ~ +125 $^{\circ}$ C
TMCR03-450K1206T	23.3	33	45 \pm 10%	79	1	35	-55 ~ +125 $^{\circ}$ C
TMCR03-250K1210T	12.7	18	25 \pm 10%	44	2.5	300	-55 ~ +125 $^{\circ}$ C
TMCR03-330K1210T	17	24	33 \pm 10%	58	2.5	300	-55 ~ +125 $^{\circ}$ C
TMCR03-450K1210T	23.3	33	45 \pm 10%	79	2.5	280	-55 ~ +125 $^{\circ}$ C
TMCR03-560K1210T	30	42	56 \pm 10%	99	2.5	280	-55 ~ +125 $^{\circ}$ C
TMCR03-250K1812T	12.7	18	25 \pm 10%	44	5	500	-55 ~ +125 $^{\circ}$ C
TMCR03-330K1812T	17	24	33 \pm 10%	58	5	500	-55 ~ +125 $^{\circ}$ C
TMCR03-450K1812T	23.3	33	45 \pm 10%	79	5	500	-55 ~ +125 $^{\circ}$ C
TMCR03-560K1812T	30	42	56 \pm 10%	99	5	500	-55 ~ +125 $^{\circ}$ C
TMCR03-250K2220T	12.7	18	25 \pm 10%	44	5	600	-55 ~ +125 $^{\circ}$ C
TMCR03-330K2220T	17	24	33 \pm 10%	58	5	600	-55 ~ +125 $^{\circ}$ C
TMCR03-450K2220T	23.3	33	45 \pm 10%	79	5	600	-55 ~ +125 $^{\circ}$ C
TMCR03-560K2220T	30	42	56 \pm 10%	99	5	600	-55 ~ +125 $^{\circ}$ C
TMCR03-620K2220T	34	48	62 \pm 10%	110	5	600	-55 ~ +125 $^{\circ}$ C
TMCR03-760K2220T	45	60	76 \pm 10%	134	5	600	-55 ~ +125 $^{\circ}$ C
TMCR03-860K2220T	48	68	86 \pm 10%	151	5	600	-55 ~ +125 $^{\circ}$ C
TMCR03-241K0805T	150	200	240 \pm 10%	395	1	200	-55 ~ +125 $^{\circ}$ C
TMCR03-431K0805T	275	350	430 \pm 10%	705	1	100	-55 ~ +125 $^{\circ}$ C
TMCR03-271K1206T	175	225	270 \pm 10%	450	1	300	-55 ~ +125 $^{\circ}$ C
TMCR03-431K1206T	275	350	430 \pm 10%	705	1	100	-55 ~ +125 $^{\circ}$ C
TMCR03-471K1206T	300	385	470 \pm 10%	775	1	100	-55 ~ +125 $^{\circ}$ C
TMCR03-471K1210T	300	385	470 \pm 10%	775	2.5	400	-55 ~ +125 $^{\circ}$ C
TMCR03-561K1210T	350	460	560 \pm 10%	950	2.5	200	-55 ~ +125 $^{\circ}$ C
TMCR03-471K1812T	300	385	470 \pm 10%	775	5	600	-55 ~ +125 $^{\circ}$ C
TMCR03-471K2220T	300	385	470 \pm 10%	775	10	800	-55 ~ +125 $^{\circ}$ C

Test and Measurement Procedures

Test Conditions

Unless otherwise specified, the standard atmospheric conditions for measurement/test as

- ambient Temperature: 20 \pm 15 $^{\circ}$ C
- Relative Humidity: 65 \pm 20%
- Air Pressure: 86kPa to 106kPa

If any doubt on the results, measurements/tests should be made within the following limits:

- Ambient Temperature: 25 \pm 2 $^{\circ}$ C
- Relative Humidity: 65 \pm 5%
- Air Pressure: 86kPa to 106kPa

Inspection Equipment

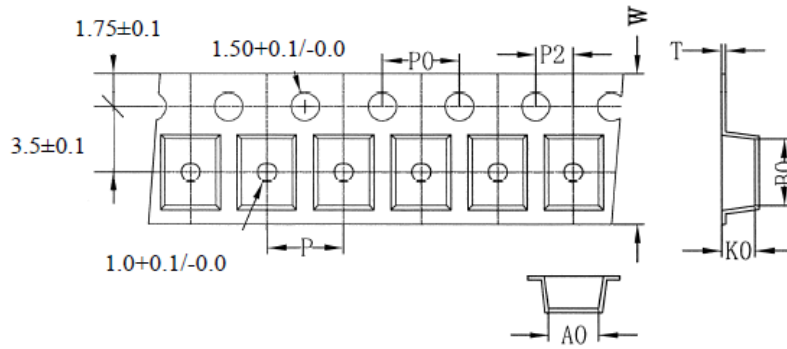
- Visual Examination: 20Xmagnifier
- Varistor Voltage test: Varistor tester



TMCR03-Chip Varistor

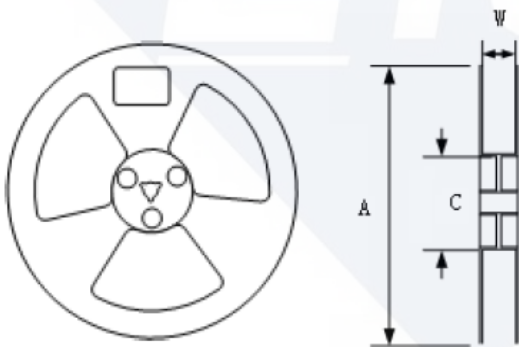
Packing dimension

A. Carrier tape dimensions.(Unit:mm)



Type	A0(±0.2)	B0(±0.2)	K0(±0.2)	T Maz	W(±0.3)	P0(±0.2)	P(±0.2)	P2(±0.2)
0604	1.3	2.1	1.3	0.3	8.0	4.0	4.0	2.0
0806	2.1	2.5	2.1	0.3	8.0	4.0	4.0	2.0
1206	2.1	3.8	2.1	0.3	8.0	4.0	4.0	2.0
1210	3.1	3.8	2.8	0.3	8.0	4.0	4.0	2.0
1812	3.8	5.2	3.6	0.3	12.0	4.0	8.0	2.0
2220	6.9	6.8	3.8	0.3	12.0	4.0	8.0	2.0

B. Taping reel dimensions



Type	Spec	Dimensions(mm)		
		A	W	C
0604	7"	178±2	8.4+2.0/-0.0	58±2
0806	7"	178±2	8.4+2.0/-0.0	58±2
1206	7"	178±2	8.4+2.0/-0.0	58±2
1210	7"	178±2	8.4+2.0/-0.0	58±2
1812	7"	178±2	8.4+2.0/-0.0	58±2
2220	7"	178±2	8.4+2.0/-0.0	58±2