



# TMCR01-Thick Film Chip Resistor

## Feature:

- Small size & light weight.
- Low assembly cost
- High reliability
- Suitable for reflow and wave flow solder
- Compliant with ROHS requirement

**Application:** GPS, Meter, Telecom, Mobile Phone.

## Part Number:

TMCR01	-	1	2	3	4	5	6	7	8	9	10	11	12
↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

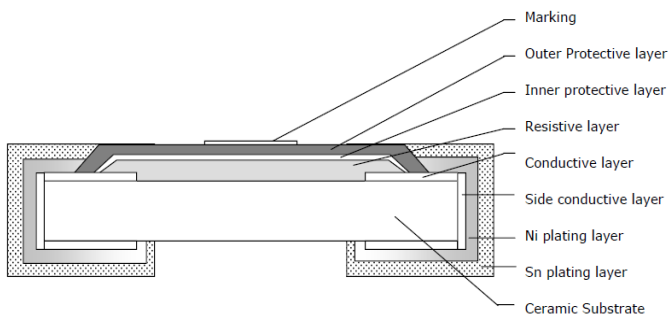
  

<b>Produce Code</b> TMCR01: Thick Film Chip Capacitor	<b>Resistance Value Code</b> Three digits: The first two digits are significant figures and the third one denotes number of zeros. 394=390K Ω Four digits: The first three digits are Significant figures and the fourth one denotes number of zeros. 1201=1.2K Ω	<b>Tolerance</b> F=±1% G=±2% J=±5%	<b>Size:</b> 0201 0402 0603 0805 1206 1210 1812 2010 2512	<b>Rated Power</b> 1= 1W 2= 1/2W 3= 3/4W 4= 1/4W 8= 1/8W L= 1/10W M= 1/16W N=1/20W O=1/32W	<b>Packaging</b> T:tape&reel B:bulk	Topmay inner code
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## Characteristics:

Type	0201	0402	0603	0805	1206	1210	1812	2010	2512
Rated Power	1/20W	1/16W	1/10W	1/8W	1/4W	1/2W	1/2W	3/4W	1W
Max Working Voltage	25V	50V	50V	150V	200V	200V	200V	200V	200V
Max Overload Voltage	50V	100V	100V	300V	400V	400V	400V	400V	400V
Dielectric Withstanding Voltage		100V	100V	300V	500V	500V	500V	500V	500V
Resistance Value of Jumper ±1%		<20mΩ	<20mΩ	<20mΩ	<20mΩ	<20mΩ	<20mΩ	<20mΩ	<20mΩ
Resistance Value of Jumper ±5%		<50mΩ	<50mΩ	<50mΩ	<50mΩ	<50mΩ	<50mΩ	<50mΩ	<50mΩ
Rated Current of Jump	0.5A	1A	1A	1.5A	1.9A	2.2A	2A	3A	3A
Max Current of Jump	1A	2A	2A	3.5A	5A	5.5A	5A	7.5A	7.5A

## Construction:



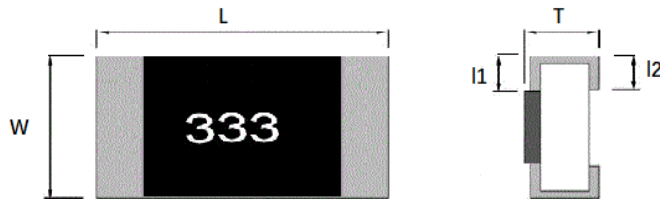
No.	Construction	Material
1	Marking	Epoxy
2	Outer Protective layer	Epoxy
3	Inner Protective layer	Glass
4	Resistive layer	RuO2+glass
5	Conductive layer	Ag
6	Side conductive layer	NiCr
7	Ni Plating layer	Ni
8	Sn Plating layer	Matte Tin
9	Ceramic Substrate	Al2O3



# TMCR01-Thick Film Chip Resistor

Resistance Range:

Type	Resistance Range		
	1%	2%	5%
0201	1Ω~10MΩ	1Ω~10MΩ	1Ω~10MΩ
0402	1Ω~22MΩ	1Ω~22MΩ	1Ω~22MΩ
0603	1Ω~22MΩ	1Ω~22MΩ	1Ω~100MΩ
0805	1Ω~22MΩ	1Ω~22MΩ	1Ω~100MΩ
1206	1Ω~22MΩ	1Ω~22MΩ <td 1Ω~100MΩ	
1210	1Ω~22MΩ	1Ω~22MΩ	1Ω~100MΩ
1812	1Ω~10MΩ	1Ω~10MΩ	1Ω~10MΩ
2010	1Ω~22MΩ	1Ω~22MΩ	1Ω~100MΩ
2512	1Ω~22MΩ	1Ω~22MΩ	1Ω~100MΩ



Dimension(mm):

Type(inch)	L(mm)	W(mm)	T(mm)	l1(mm)	l2(mm)
0201	0.60±0.03	0.30±0.03	0.20±0.03	0.10±0.05	0.13±0.05
0402	1.00±0.05	0.50±0.05	0.30±0.05	0.15±0.10	0.20±0.10
0603	1.60±0.10	0.80±0.10	0.45±0.10	0.25±0.20	0.30±0.20
0805	2.00±0.15	1.25±0.15	0.50±0.10	0.35±0.20	0.40±0.20
1206	3.10±0.15	1.60±0.15	0.55±0.10	0.45±0.25	0.40±0.25
1210	3.10±0.15	2.50±0.15	0.55±0.15	0.35±0.25	0.60±0.25
1812	4.50±0.20	3.10±0.20	0.55±0.15	0.55±0.20	0.70±0.20
2010	5.00±0.20	2.50±0.20	0.55±0.15	0.65±0.25	0.50±0.25
2512	6.25±0.20	3.10±0.20	0.55±0.15	0.85±0.25	0.95±0.25

Marking on the Resistor's Body

1. For 0201 and 0402 size, no marking on the body due to the small size of the resistor 2. ±5% tolerance product: the marking is 3 digits, the first 2 digits are significant figures of resistance value and the 3rd one denotes the power number of 10, (10 <sup>x</sup> ) 3. ±1%, ±2% tolerance product: the marking is 4 digits, the first 3 digits are significant figures of resistance value and the 4th one denotes the power number of 10, (10 <sup>x</sup> ) 4. Standard E96 series values of 0603 ±1%: due to the small size of the resistor's body, use 3 digits code to indicate the resistance value.		472=47×10 <sup>2</sup> =4.7KΩ
		5R6=5.6Ω Below 10Ω: 5R6=5.6Ω
		4992=499×10 <sup>2</sup> =49.9KΩ
		Below 100Ω: 6R81=6.81Ω



# TMCR01-Thick Film Chip Resistor

Standard E96 Series Resistance Value Code for 0603 ±1% Marking

Code	Value	Code	Value	Code	Value	Code	Value	Code	Value	Code	Value
01	100	17	147	33	215	49	316	65	464	81	681
02	102	18	150	34	221	50	324	66	475	82	698
03	105	19	154	35	226	51	332	67	487	83	715
04	107	20	158	36	232	52	340	68	499	84	732
05	110	21	162	37	237	53	348	69	511	85	750
06	113	22	165	38	243	54	357	70	523	86	768
07	115	23	169	39	249	55	365	71	536	87	787
08	118	24	174	40	255	56	374	72	549	88	806
09	121	25	178	41	261	57	383	73	562	89	825
10	124	26	182	42	267	58	392	74	576	90	845
11	127	27	187	43	274	59	402	75	590	91	866
12	130	28	191	44	280	60	412	76	604	92	887
13	133	29	196	45	287	61	422	77	619	93	909
14	137	30	200	46	294	62	432	78	634	94	931
15	140	31	205	47	301	63	442	79	649	95	953
16	143	32	210	48	309	64	453	80	665	96	976

## Multiplier Code for 0603 ±1% Marking

Code	Y	X	A	B	C	D	E	F
Multiplier	10 <sup>-2</sup>	10 <sup>-1</sup>	10 <sup>0</sup>	10 <sup>1</sup>	10 <sup>2</sup>	10 <sup>3</sup>	10 <sup>4</sup>	10 <sup>5</sup>

The resistance value are marked as the following examples



$$10D = 124 \times 103 = 124K\Omega$$



$$38Y = 243 \times 10^{-2} = 2.43\Omega$$

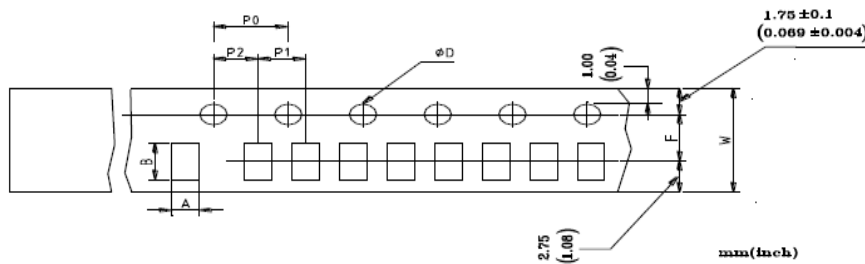


$$331 = 33 \times 101 = 330\Omega$$



$$560 = 56 \times 100 = 56\Omega$$

## Packing dimension



Dimensions	A	B	D	F	P0	P1	P2	W
0201	0.38±0.05	0.68±0.05	1.50±0.10	3.50±0.05	4.00±0.10	2.00±0.10	2.00±0.05	8.00±0.20
0402	0.65±0.10	1.15±0.10	1.50±0.10	3.50±0.05	4.00±0.10	2.00±0.10	2.00±0.05	8.00±0.20
0603	1.10±0.10	1.90±0.10	1.50±0.10	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	8.00±0.20
0805	1.65±0.20	2.40±0.20	1.50±0.10	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	8.00±0.20
1206	1.90±0.20	3.50±0.20	1.50±0.10	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	8.00±0.20
1210	2.80±0.20	3.50±0.20	1.50±0.10	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	8.00±0.20
1812	3.30±0.20	4.60±0.20	1.50±0.10	5.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	12.0±0.10
2010	2.90±0.10	5.30±0.10	1.50±0.10	5.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	12.0±0.10
2512	3.40±0.10	6.60±0.10	1.50±0.10	5.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	12.0±0.10