



# ShenZhen Topmay Electronic Co., Ltd

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## TMCC05-SMD Multilayer Ceramic Capacitor

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### ● Features

1. The choice of dielectric is largely determined by the temperature stability required:

Stringgent dimensional tolerance allow highly reliable,highly speed automaric chip placement on PCBs.;

2. Terminations are plated with Ni and solder,suited to flow and reflow soldering.

3. High insulation resistance and high reliabibty.

4. These capacitors have temperature characteristics ranging from COG to Y5V, applied to general electronic equipment ,and instrument panel house electronic

### ● Capacitor Selection

#### 1. HIGH FREQUENCY TYPE:

The capacitor of this kind dielectric material is considered as class capacitor, including high frequency COG,COH capacoitor and

temperature compensating capacitor such as HG,LG,PH,RH,SH,TH,UJ,SL.The electrical properties of COG,COH capacitor are the

most stable one and change invariably with temperature,voltage and time.They are suited for applications where low-losses and highstability

are required,HG,LG,PH,SH,TH,UJ,SL capacitor s s capacitance changes with temperature.They are suited ofr applications where low-losses and temperature compensating circuits.

#### 2. X7R,X5R:Y5V

The capacitor made of this kind of material is the highest dielectric constant of all ceramic capacitors.They are used over a moderate

temperature range in application where high capacitance is required because of tis unstable temperature coefficient,but where moderate

losses and capacitance changes can be tolerated .Its capacitance and dissipation factorsare sensible to measuring conditions,such as

temperature and voltage,etc.

X7R,X5R material is a kind of material has dielectric constant.The capacitor made of this kind material is considered as class capacitor

whose capacitance is higher than that ofclass .These capacitors are classified as having a semi-stable temperature characteristic

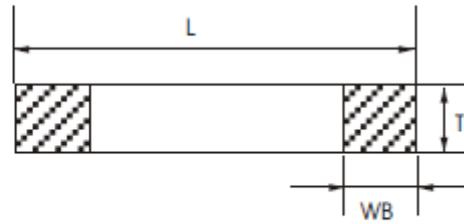
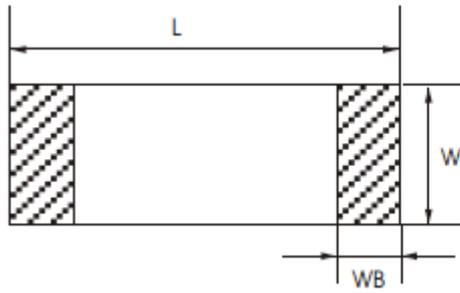
and used over a wide temperature range,such in these kinds of circuits,DC-blocking,decou-ling,bypassing,frequency discriminating etc.

Z5U

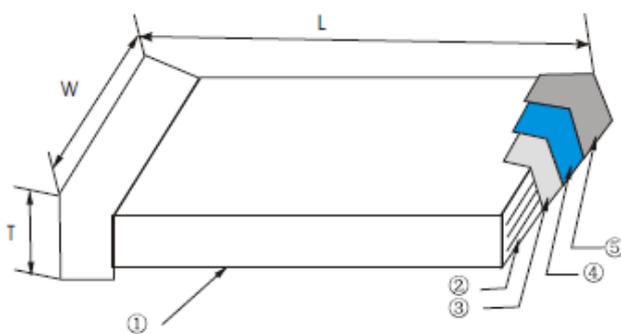
The capa citor made of this kind of material is considered as class capacitor ,whose temperature characteristic si between that of X7R

Y5V.The capacitor of this kind of capacitor is unstable and sensible to temperature and voltage,Ideally suited for by passing and decoupling application circuits operating with low DC bias in the environment approaches to room temperature.

● Structure and dimensions



Type		Dimensions (mm)			
British expression	Metric expression	L	W	T	WB
0402	1005	$1.00 \pm 0.05$	$0.50 \pm 0.05$	$0.50 \pm 0.05$	$0.25 \pm 0.10$
0603	1608	$1.60 \pm 0.10$	$0.80 \pm 0.10$	$0.80 \pm 0.10$	$0.30 \pm 0.10$
0805	2012	$2.00 \pm 0.20$	$1.25 \pm 0.20$	$\leq 0.55$ $0.80 \pm 0.20$ $1.00 \pm 0.20$ $1.25 \pm 0.20$	$0.50 \pm 0.20$
1206	3216	$3.20 \pm 0.30$	$1.60 \pm 0.30$	$0.80 \pm 0.20$ $1.00 \pm 0.20$ $1.25 \pm 0.20$ $1.60 \pm 0.30$	$0.60 \pm 0.30$
1210	3225	$3.20 \pm 0.30$	$2.50 \pm 0.30$	$\leq 2.80$	$0.80 \pm 0.30$
1808	4520	$4.50 \pm 0.40$	$2.00 \pm 0.20$	$\leq 2.20$	$0.80 \pm 0.30$
1812	4532	$4.50 \pm 0.40$	$3.20 \pm 0.30$	$\leq 3.50$	$0.80 \pm 0.30$
2225	5763	$5.70 \pm 0.50$	$6.30 \pm 0.50$	$\leq 6.20$	$1.00 \pm 0.40$
3035	7690	$7.60 \pm 0.50$	$9.00 \pm 0.50$	$\leq 8.10$	$1.00 \pm 0.40$



No	Name
①	Ceramic dielectric
②	Inner electrode
③	Substrate electrode
④	Nickel layer
⑤	Tin layer

● Temperature coefficient/Characteristics

Dielectric	Reference temperature point	Temperature coefficient	Operation temperature range
COG	20℃	0±30 ppm/℃	-55℃~125℃
COH	20℃	0±60 ppm/℃	-55℃~125℃
HG	20℃	-33±30 ppm/℃	-25℃~85℃
LG	20℃	-75±30 ppm/℃	-25℃~85℃
PH	20℃	-150±60 ppm/℃	-25℃~85℃
RH	20℃	-220±60 ppm/℃	-25℃~85℃
SH	20℃	-330±60 ppm/℃	-25℃~85℃
TH	20℃	-470±60 ppm/℃	-25℃~85℃
UJ	20℃	-750±120 ppm/℃	-25℃~85℃
SL	20℃	-1000~+140 ppm/℃	-25℃~85℃
X7R	20℃	±15%	-55℃~125℃
X5R	20℃	±15%	-55℃~85℃
Z5U	20℃	-56%~+22%	10℃~85℃
Y5V	20℃	-80%~+30%	-25℃~85℃

● Capacitance range and operating voltage

Topmay P/N	Dielectric	SIZE	Capacitance	Voltage	Tolerance
TTMCC05-105K50VT 0805 X7R	X5R	0805	1UF	50V	10%
TMCC05-104K25VT 0402 X7R	X7R	0402	0.1UF	25V	10%
TMCC05-105M25VT 0603 X5R	X5R	0603	1UF	25V	20%