NIPPON CHEMI-CON

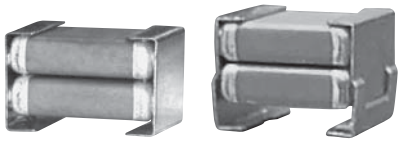
METAL CAP TYPE MULTILAYER CERAMIC CAPACITORS

THP Series / TMP Series

(High Reliability)

RoHS Compliant

-2012 ※



◆FEATURES

1. Small size and large capacitance, high ripple current.
2. Excellent temperature cycle durability and most suitable for aluminum substrate.
3. Y5U temperature characteristics.
4. Excellent noise absorption.
5. For reflow soldering use.
6. Suitable for aluminum substrate.

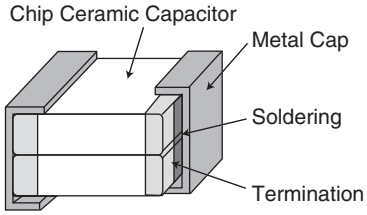
◆APPLICATIONS

1. Smoothing circuit of switching mode AC-DC or DC-DC converter.
2. On-board power supply.
3. Noise suppressor for various kinds of equipments.

◆CUSTOM MADE PRODUCTS

We can offer custom made one element metal cap type capacitors for request of customers.
Please contact us if you have questions for details.

◆CONSTRUCTION



◆RATINGS

1. Category Temperature Range	-55～+125℃
2. Rated Voltage Range	25, 50, 100, 200Vdc
3. Rated Capacitance Range	0.45 to 100μF
4. Rated Capacitance Tolerance	M(±20%), Z($\pm^{80}_{20}$%)
5. Temperature Characteristics	E(JIS)≒Y5U(EIA)
6. Rated Ripple Current	See No.5 on the following table

◆SPECIFICATIONS

No.	Items	Specification	Test Condition
1	Withstand Voltage	No abnormality.	250% of rated voltage shall be applied for 5 seconds.
2	Insulation Resistance	1000/CR(MΩ) or 10000(MΩ) whichever is less.	Rated voltage shall be applied for 60±5 seconds at temperature 20±2℃.
3	Rated Capacitance	Within specified tolerance.	Temperature : 20±2℃ Frequency : 1±0.1kHz (≧100μF, 120Hz) Voltage : 1±0.2Vrms
4	Dissipation Factor	5.0% maximum	Temperature : 20±2℃ Frequency : 1±0.1kHz (≧100μF, 120Hz) Voltage : 1±0.2Vrms
5	Rated Ripple Current	Size 43 55 76 Arms 1.5 3.0 4.0	10kHz～1MHz (sine curve) Ripple voltage Vp shall be less than the rated voltage.

※ This series is no more RoHS compliant as from January,2013.
NTJ series are recommended for the new design and the substitution.

THP Series / TMP Series

◆SPECIFICATIONS

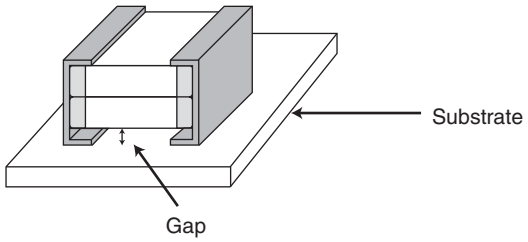
<table>
<tr><th>No.</th><th>Items</th><th>Specification</th><th>Test Condition</th></tr>
<tr><td>6</td><td>Temperature Cycle</td><td>Appearance : No visible damage.
ΔC/C : ±15%
D.F. : To meet the initial specification.
I.R. : To meet the initial specification.</td><td>
<table>
<tr><th>Step</th><th>Temperature (℃)</th><th>(min.)</th></tr>
<tr><td>1</td><td>Min. Category temperature ±3</td><td>30±3</td></tr>
<tr><td>2</td><td>Room temperature</td><td>3 max.</td></tr>
<tr><td>3</td><td>Max. Category temperature ±3</td><td>30±3</td></tr>
<tr><td>4</td><td>Room temperature</td><td>3 max.</td></tr>
</table>
<Cycle>
THP series : 100 cycles
TMP series : 500 cycles</td></tr>
<tr><td>7</td><td>Humidity Load Life</td><td>Appearance : No abnormality.
ΔC/C : ±20%
D.F. : 7% max.
I.R. : 50/C_R(MΩ) or 1000(MΩ)
whichever is less.</td><td>Temperature : 40±2℃
Humidity : 90 to 95%RH
Voltage : Rated voltage
Time : 500^{+24}_{0}hours</td></tr>
<tr><td>8</td><td>Endurance</td><td>Appearance : No abnormality.
ΔC/C : ±20%
D.F. : 7% max.
I.R. : 100/C_R(MΩ) or 1000(MΩ)
whichever is less.</td><td>Temperature : 85±2℃
Voltage : 200% of rated voltage.
Time : 1000^{+48}_{0}hours

Temperature : 125±3℃
Voltage : Rated voltage
Time : 1000^{+48}_{0}hours</td></tr>
</table>

*C_R : Rated Capacitance(μF)

◆Note of mountig for THP series.

1. The face of wider gap between a capacitor and a substrate shall be the mounting face.
2. To prevent degredation of temperature cycling capability, if need to be careful about amount of solder that would not go into the inner side of terminations.



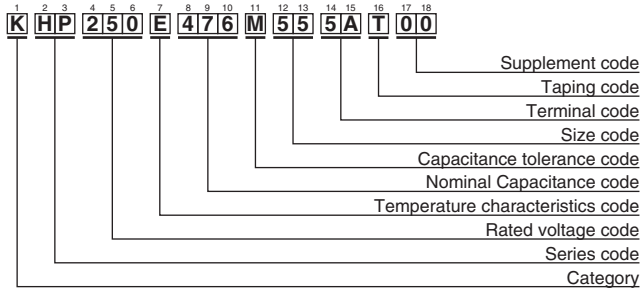
METAL CAP TYPE MULTILAYER CERAMIC CAPACITORS

THP Series

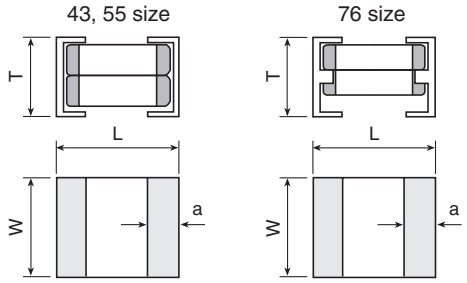
◆STANDARD RATINGS

Rated voltage (Vdc)	Rated Capacitance (μF)	Dimensions(mm)				Maximum ripple current (Arms)	Part Number	Previous Part Number (Just for your reference)
		L	W	Tmax.	a			
25	15	4.8±0.4	3.5±0.3	5.5	1.3±0.3	1.5	KHP250E156M435AT00	THP50E1E156MT502
	20						KHP250E206M435AT00	THP50E1E206MT502
	33	6.0±0.4	5.0±0.4	4.5	1.3±0.3	3.0	KHP250E336M555AT00	THP60E1E336MT502
	47						KHP250E476M555AT00	THP60E1E476MT502
	68			5.6			KHP250E686M555AT00	THP60E1E686MT502
	100	7.8±0.5	6.6±0.5	6.5	1.5±0.3	4.0	KHP250E107M765BT00	THP70E1E107MT502
50	4.5	4.8±0.4	3.5±0.3	5.5	1.3±0.3	1.5	KHP500E455M435AT00	THP50E1H455MT502
	6.8						KHP500E685M435AT00	THP50E1H685MT502
	10	6.0±0.4	5.0±0.4	4.5	1.3±0.3	3.0	KHP500E106M555AT00	THP60E1H106MT502
	15						KHP500E156M555AT00	THP60E1H156MT502
	22			5.6			KHP500E226M555AT00	THP60E1H226MT502
	33	7.8±0.5	6.6±0.5	6.5	1.5±0.3	4.0	KHP500E336M765BT00	THP70E1H336MT502
	47						KHP500E476M765BT00	THP70E1H476MT502
100	1.5	4.8±0.4	3.5±0.3	5.5	1.3±0.3	1.5	KHP101E155M435AT00	THP50E2A155MT502
	2.0						KHP101E205M435AT00	THP50E2A205MT502
	3.0						KHP101E305M435AT00	THP50E2A305MT502
	4.7	6.0±0.4	5.0±0.4	4.5	1.3±0.3	3.0	KHP101E475M555AT00	THP60E2A475MT502
	6.8						KHP101E685M555AT00	THP60E2A685MT502
	10			5.6			KHP101E106M555AT00	THP60E2A106MT502
	15	7.8±0.5	6.6±0.5	6.5	1.5±0.3	4.0	KHP101E156M765BT00	THP70E2A156MT502
200	0.45	4.8±0.4	3.5±0.3	5.5	1.3±0.3	1.5	KHP201E454M435AT00	THP50E2D454MT502
	0.68						KHP201E684M435AT00	THP50E2D684MT502
	1.0						KHP201E105M435AT00	THP50E2D105MT502
	1.5	6.0±0.4	5.0±0.4	4.5	1.3±0.3	3.0	KHP201E155M555AT00	THP60E2D155MT502
	2.2			5.6			KHP201E225M555AT00	THP60E2D225MT502
	3.3	7.8±0.5	6.6±0.5	6.5	1.5±0.3	4.0	KHP201E335M765BT00	THP70E2D335MT502
	4.7						KHP201E475M765BT00	THP70E2D475MT502

◆PART NUMBERING SYSTEM



◆DIMENSIONS



Please refer to"Part Numbering System" of the beginning of a catalog for the details.

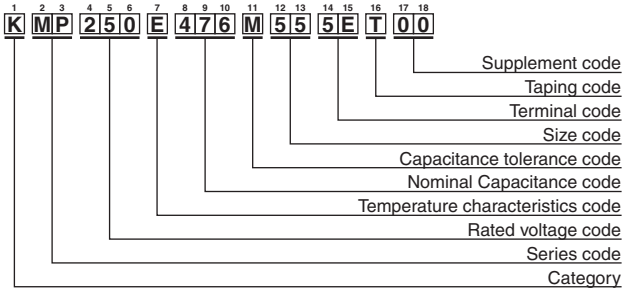
METAL CAP TYPE MULTILAYER CERAMIC CAPACITORS

TMP Series

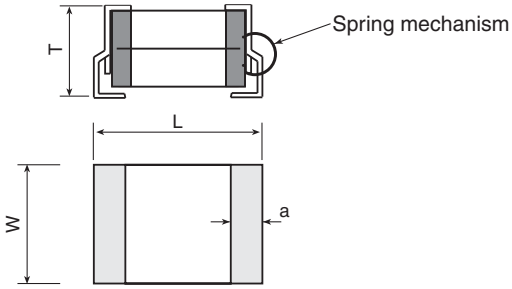
◆STANDARD RATINGS

Rated voltage (Vdc)	Rated Capacitance (μF)	Dimensions(mm)				Maximum ripple current (Arms)	Part Number	Previous Part Number (Just for your reference)
		L	W	Tmax.	a			
25	33	6.4±0.4	5.0±0.4	5.0	1.3±0.3	3.0	KMP250E336M555ET00	TMP60E1E336MT502
	47						KMP250E476M555ET00	TMP60E1E476MT502
	68	8.2±0.5	6.6±0.5	6.5	1.5v0.3	4.0	KMP250E686M765ET00	TMP70E1E686MT502
	100						KMP250E107M765ET00	TMP70E1E107MT502
50	10	6.4±0.4	5.0±0.4	5.0	1.3±0.3	3.0	KMP500E106M555ET00	TMP60E1H106MT502
	15						KMP500E156M555ET00	TMP60E1H156MT502
	22						KMP500E226M555ET00	TMP60E1H226MT502
	33	8.2±0.5	6.6±0.5	6.5	1.5±0.3	4.0	KMP500E336M765ET00	TMP70E1H336MT502
	47						KMP500E476M765ET00	TMP70E1H476MT502
100	4.7	6.4±0.4	5.0±0.4	5.0	1.3±0.3	3.0	KMP101E475M555ET00	TMP60E2A475MT502
	6.8						KMP101E685M555ET00	TMP60E2A685MT502
	10	8.2±0.5	6.6±0.5	6.5	1.5±0.3	4.0	KMP101E106M765ET00	TMP70E2A106MT502
	15						KMP101E156M765ET00	TMP70E2A156MT502
200	1.5	6.4±0.4	5.0±0.4	5.0	1.3±0.3	3.0	KMP201E155M555ET00	TMP60E2D155MT502
	2.2						KMP201E225M555ET00	TMP60E2D225MT502
	3.3	8.2±0.5	6.6±0.5	6.5	1.5±0.3	4.0	KMP201E335M765ET00	TMP70E2D335MT502
	4.7						KMP201E475M765ET00	TMP70E2D475MT502

◆PART NUMBERING SYSTEM



◆DIMENSIONS



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