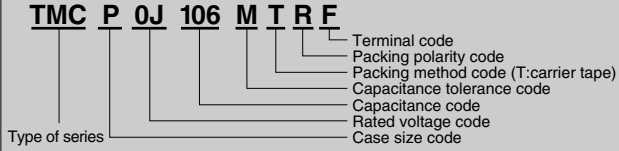


## TMCP Series (0805 Size Tantalum Chip Capacitors)

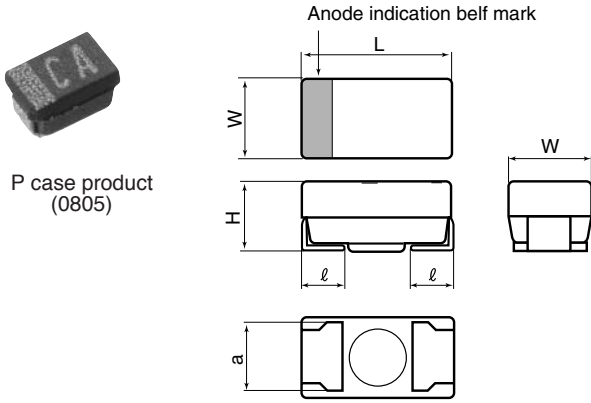
### Features

- Rendered even smaller-sized thanks to the accumulated technological knowhow (reduced to about 1/3 the cubic volume of the TMCS type).
- Suitable for high-density packaging essential to Audio Visual and other equipment downsizing.

Product symbol : (Example) TMC Series P case 6.3V 10 $\mu$ F  $\pm$ 20%



### Outline of drawings and dimensions



### Dimensions (Unit : mm)

Case code	Case size				
	L <sup>+0.2</sup>	W <sup>+0.2</sup>	H <sup>MAX</sup>	l <sup>+0.2</sup>	a <sup>+0.1</sup>
P	2.0	1.25	1.2	0.5	0.9

### Standard value and case size

Capacitance	Code	Rated voltage (V.DC)						
		2.5	4	6.3	10	16	20	25
$\mu$ F		0E	0G	0J	1A	1C	1D	1E
0.10	104						P	P
0.15	154						P	
0.22	224						P	
0.33	334						P	
0.47	474						P	P
0.68	684						P	
1.0	105						P	P
1.5	155				P	P	P	
2.2	225				P	P	P	
3.3	335				P	P		
4.7	475			P	P	P		
6.8	685			P	P			
10	106			P	P			
15	156	P	P	P				
22	226	P	P	P				
33	336	P	P					
47	476	P	P					

For ratings not covered the table, consult Hitachi AIC.

Product specifications	TMCP	Test conditions JIS C5101-1:1998																																							
Operating temperature range	-55°C ~ +125°C																																								
Rated voltage	DC2.5 ~ 25V	85°C																																							
Surge voltage	DC3.2 ~ 32V	85°C																																							
Derated voltage	DC1.6 ~ 16V	125°C																																							
Capacitance	0.1 ~ 47 $\mu$ F																																								
Capacitance tolerance	$\pm$ 10% or 20%	Paragraph 4.7, 120 Hz																																							
Leakage current	Refer to table standard product table	Paragraph 4.9, in 5 minutes after the rated voltage is applied.																																							
tan $\delta$	Refer to table standard product table	Paragraph 4.8, 120Hz																																							
Surge withstanding voltage	$\Delta$ C/C $\pm$ 20% or less tan $\delta$ Specified initial value or less LC Specified initial value or less	Paragraph 4.26																																							
Temperature characteristics	<table border="1"> <thead> <tr> <th>Specified initial value</th> <th>-55</th> <th>85</th> <th>125</th> </tr> </thead> <tbody> <tr> <td><math>\Delta</math> C/C</td> <td>-</td> <td>-20 ~ 0%</td> <td>0 ~ +20%</td> <td>0 ~ +20%</td> </tr> <tr> <td>tan<math>\delta</math></td> <td>0.06</td> <td>0.10</td> <td>0.08</td> <td>0.10</td> </tr> <tr> <td>Refer to table</td> <td>0.08</td> <td>0.12</td> <td>0.10</td> <td>0.12</td> </tr> <tr> <td>or less</td> <td>0.10</td> <td>0.14</td> <td>0.12</td> <td>0.14</td> </tr> <tr> <td></td> <td>0.12</td> <td>0.16</td> <td>0.14</td> <td>0.16</td> </tr> <tr> <td></td> <td>0.20</td> <td>0.24</td> <td>0.22</td> <td>0.24</td> </tr> <tr> <td></td> <td>0.30</td> <td>0.60</td> <td>0.30</td> <td>0.40</td> </tr> </tbody> </table> LC Refer to standard product table 100% or less specified initial value or less 120% or less specified initial value or less	Specified initial value	-55	85	125	$\Delta$ C/C	-	-20 ~ 0%	0 ~ +20%	0 ~ +20%	tan $\delta$	0.06	0.10	0.08	0.10	Refer to table	0.08	0.12	0.10	0.12	or less	0.10	0.14	0.12	0.14		0.12	0.16	0.14	0.16		0.20	0.24	0.22	0.24		0.30	0.60	0.30	0.40	Paragraph 4.24
Specified initial value	-55	85	125																																						
$\Delta$ C/C	-	-20 ~ 0%	0 ~ +20%	0 ~ +20%																																					
tan $\delta$	0.06	0.10	0.08	0.10																																					
Refer to table	0.08	0.12	0.10	0.12																																					
or less	0.10	0.14	0.12	0.14																																					
	0.12	0.16	0.14	0.16																																					
	0.20	0.24	0.22	0.24																																					
	0.30	0.60	0.30	0.40																																					
Solder heat resistance	$\Delta$ C/C $\pm$ 20% or less tan $\delta$ Specified initial value or less LC Specified initial value or less	Solder Dip 260 $\pm$ 5°C 10 $\pm$ 1 sec. Reflow 260°C 10 $\pm$ 1 sec.																																							
Moisture resistance no load	$\Delta$ C/C $\pm$ 20% or less tan $\delta$ 150% Specified initial value or less LC Specified initial value or less	Paragraph 4.22, 40°C 90 ~ 95%RH, 500hours																																							
High-temperature load	$\Delta$ C/C $\pm$ 20% or less tan $\delta$ Specified initial value or less LC 200% Specified initial value or less	Paragraph 4.23, 85°C The rated voltage is applied for 2000 hours.																																							
Thermal shock	$\Delta$ C/C $\pm$ 20% or less tan $\delta$ Specified initial value or less LC Specified initial value or less	Leave at -55°C, normal temperature, 125°C, and normal temperature for 30 min., 3 min., 30 min., and 3 min. Repeat this operation 5 times running.																																							
Moisture resistance load	$\Delta$ C/C $\pm$ 20% or less tan $\delta$ 150% Specified initial value or less LC 200% Specified initial value or less	40°C, humidity 90 to 95%RH The rated voltage is applied for 500 hours.																																							
Failure rate	1% / 1000hours	85°C. The rated voltage is applied (through a protective resistor of 1 $\Omega$ /V).																																							

\*This catalog is designed for providing general information. Please inquire of our Sales Department to confirm specifications prior to use.

