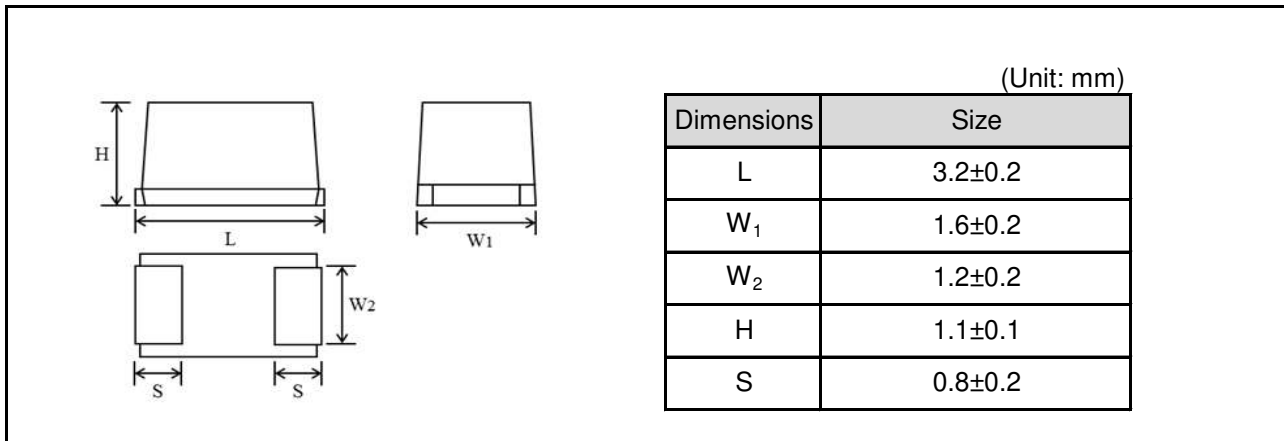


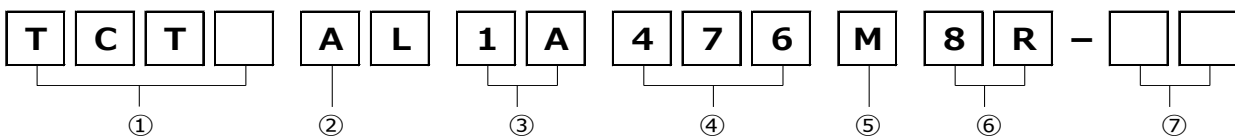
● Features

- 1) Bottom electrode configuration results in significantly greater compactness.
- 2) Fillet formation enables easy visibility after mounting.
- 3) Ideal for noise removal on power supply lines with limited space.
- 4) Eco-friendly halogen-free products.

● Dimensions



● Part No. Explanation



① Series name  
TCT

② Case style  
AL : 3216-3216(12)size

③ Rated voltage

CODE	Rated voltage(V)
0E	2.5
0G	4
0J	6.3
1A	10
1C	16
1D	20
1E	25
1V	35
1H	50

④ Nominal capacitance  
Nominal capacitance in pF in 3 digits:  
2 significant figures followed by the figure representing the number of 0's.

⑤ Capacitance tolerance  
M : ±20%

⑥ Taping  
8: Tape width  
R: Positive electrode on the side opposite to sprocket hole

⑦ Discrimination code

● Rated table

Capacitance ( $\mu\text{F}$ )	Rated voltage (V.DC)								
	2.5	4	6.3	10	16	20	25	35	50
1.0 (105)									
2.2 (225)									
3.3 (335)								8	
4.7 (475)							8		
6.8 (685)									
10 (106)						8			
15 (156)									
22 (226)					4	4			
33 (336)					4				
47 (476)				4					
68 (686)									
100 (107)			3	☆2.5					
150 (157)			2.7						
220 (227)		2.5	☆2.5						

☆Contact us

● Marking

The indications listed below should be given on the surface of a capacitor.

- (1) Polarity: The polarity should be shown by bar. (on the anode side)
- (2) Rated DC voltage: A voltage code is shown as below table.
- (3) Capacitance: A capacitance code is shown as below table.

Voltage Code	Rated DC Voltage (V)
e	2.5
g	4
j	6.3
A	10
C	16
D	20
E	25
V	35
H	50

Capacitance Code	Nominal Capacitance ( $\mu\text{F}$ )	Capacitance Code	Nominal Capacitance ( $\mu\text{F}$ )
<u>E</u>	0.15	e	15
<u>N</u>	0.33	j	22
<u>S</u>	0.47	n	33
A	1.0	s	47
E	1.5	<u>w</u>	68
J	2.2	<u>a</u>	100
N	3.3	<u>e</u>	150
S	4.7	<u>j</u>	220
W	6.8	<u>n</u>	330
a	10	<u>s</u>	470

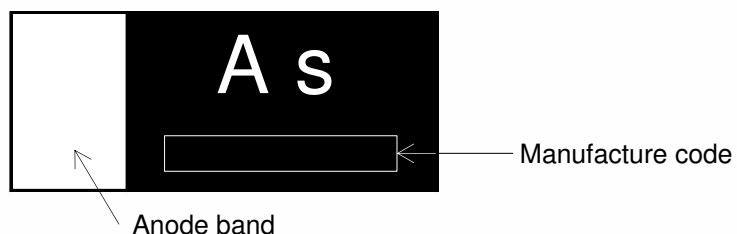
Visual typical example

voltage code and capacitance code are variable with parts number.

[TCT series AL case]

EX.)  $\frac{A}{(1)}$   $\frac{s}{(2)}$

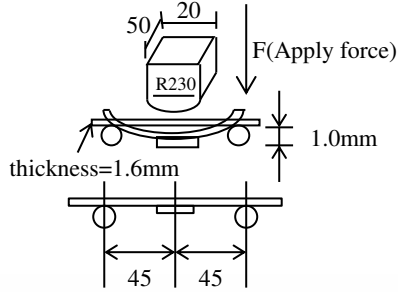
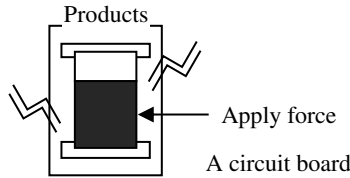
(1) voltage code  
(2) capacitance code



## ● Characteristics

Item	Performance		Test conditions (based on JIS C 5101-1 and JIS C 5101-3)															
Operating Temperature	-55°C~+125°C		Voltage reduction when temperature exceeds +85°C															
Maximum operating temperature with no voltage derating	+85°C																	
Rated voltage (V.DC)	Refer to " Standard list ".		at 85°C															
Category voltage (V.DC)	Refer to " Standard list ".		at 125°C															
Surge voltage (V.DC)	Refer to " Standard list ".		at 85°C															
DC Leakage current	Shall be satisfied the value on " Standard list ".		As per 4.9 JIS C 5101-1 As per 4.5.1 JIS C 5101-3 Voltage : Rated voltage for 5min															
Capacitance tolerance	Shall be satisfied allowance range. ±20%		As per 4.7 JIS C 5101-1 As per 4.5.2 JIS C 5101-3 Measuring frequency :120 ± 12Hz Measuring voltage :0.5Vrms + 1.5V.DC Measuring circuit :DC Equivalent series circuit															
Tangent of loss angle (Df,tanδ)	Shall be satisfied the value on " Standard list ".		As per 4.8 JIS C 5101-1 As per 4.5.3 JIS C 5101-3 Measuring frequency :120 ± 12Hz Measuring voltage :0.5Vrms + 1.5V.DC Measuring circuit :DC Equivalent series circuit															
Impedance	Shall be satisfied the value on " Standard list ".		As per 4.10 JIS C 5101-1 As per 4.5.4 JIS C 5101-3 Measuring frequency :100 ± 10kHz Measuring voltage :0.5Vrms or less Measuring circuit :DC Equivalent series circuit															
Resistance to Soldering heat	Appearance	There should be no significant abnormality. The indications should be clear.	As per 4.14 JIS C 5101-1 As per 4.6 JIS C 5101-3 Dip in the solder bath Solder temp :240 ± 5°C Duration :10 ± 0.5s Repetition :1 After the specimens, leave it at room temperature for over 24h and then measure the sample.															
	L.C.	Less than 200% of initial limit.																
	ΔC/C	Within +20/-30% of initial value.																
	DF (tanδ)	Less than 200% of initial limit.																
Temperature cycle	Appearance	There should be no significant abnormality. The indications should be clear.	As per 4.16 JIS C 5101-1 As per 4.10 JIS C 5101-3 Repetition : 5 cycles (1 cycle : steps 1 to 4) without discontinuation. <table border="1" data-bbox="922 1686 1393 1865"> <thead> <tr> <th></th> <th>Temp.</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55±3°C</td> <td>30±3min</td> </tr> <tr> <td>2</td> <td>Room Temp.</td> <td>3min or less</td> </tr> <tr> <td>3</td> <td>125±2°C</td> <td>30±3min</td> </tr> <tr> <td>4</td> <td>Room Temp.</td> <td>3min or less</td> </tr> </tbody> </table> After the specimens, leave it at room temperature for over 24h and then measure the sample. Initial value for ΔC/C shall be the value after mounted.		Temp.	Time	1	-55±3°C	30±3min	2	Room Temp.	3min or less	3	125±2°C	30±3min	4	Room Temp.	3min or less
		Temp.		Time														
	1	-55±3°C		30±3min														
	2	Room Temp.		3min or less														
3	125±2°C	30±3min																
4	Room Temp.	3min or less																
L.C.	Less than 200% of initial limit.																	
ΔC/C	Within ±30% of initial value.																	
DF (tanδ)	Less than 200% of initial limit.																	

Item		Performance	Test conditions (based on JIS C 5101-1 and JIS C 5101-3)
Moisture resistance	Appearance	There should be no significant abnormality. The indications should be clear.	As per 4.22 JIS C 5101-1 As per 4.12 JIS C 5101-3 After leaving the sample under such atmospheric condition that the temperature and humidity are $60\pm 2^{\circ}\text{C}$ and 90 to 95% RH, respectively, for $500+12/0\text{h}$ leave it at room temperature for over 24h and then measure the sample. Initial value for $\Delta\text{C/C}$ shall be the value after mounted.
	L.C.	Less than 200% of initial limit.	
	$\Delta\text{C/C}$	Within $\pm 20\%$ of initial value.	
	DF (tan $\delta$ )	Less than 300% of initial limit.	
Temperature Stability	Temp. : $-55^{\circ}\text{C}$		As per 4.29 JIS C 5101-1 As per 4.13 JIS C 5101-3 Initial value for $\Delta\text{C/C}$ shall be the value after mounted.
	$\Delta\text{C/C}$	Within 0/-15% of initial value.	
	DF (tan $\delta$ )	Shall be satisfied the value on " Standard list "	
	L.C.	-	
	Temp. : $+85^{\circ}\text{C}$		
	$\Delta\text{C/C}$	Within +15/0% of initial value.	
	DF (tan $\delta$ )	Shall be satisfied the value on " Standard list "	
	L.C.	Less than 1000% of initial limit.	
	Temp. : $+125^{\circ}\text{C}$		
	$\Delta\text{C/C}$	Within +20/0% of initial value.	
	DF (tan $\delta$ )	Shall be satisfied the value on " Standard list "	
	L.C.	Less than 1250% of initial limit.	
Surge voltage	Appearance	There should be no significant abnormality. The indications should be clear.	As per 4.26 JIS C 5101-1 As per 4.14 JIS C 5101-3 Apply the specified surge voltage via the serial resistance of $1\text{k}\Omega$ ever $5\pm 0.5$ min. for $30\pm 5$ s. each time in the atmospheric condition of $85\pm 2^{\circ}\text{C}$ . Repeat this procedure 1,000 times. After the specimens, leave it at room temperature for over 24h and then measure the sample. Initial value for $\Delta\text{C/C}$ shall be the value after mounted.
	L.C.	Less than 200% of initial limit.	
	$\Delta\text{C/C}$	Within $\pm 20\%$ of initial value.	
	DF (tan $\delta$ )	Less than 200% of initial limit.	
Loading at High temperature	Appearance	There should be no significant abnormality. The indications should be clear.	As per 4.23 JIS C 5101-1 As per 4.15 JIS C 5101-3 After applying the rated voltage for $1000+72/0$ h without discontinuation via the serial resistance of $3\Omega$ or less at a temperature of $85\pm 2^{\circ}\text{C}$ , leave the sample at room temperature / humidity for over 24h and measure the value. Initial value for $\Delta\text{C/C}$ shall be the value after mounted.
	L.C.	Less than 200% of initial limit.	
	$\Delta\text{C/C}$	Within +20/-30% of initial value.	
	DF (tan $\delta$ )	Less than 300% of initial limit.	

Item		Performance	Test conditions (based on JIS C 5101-1 and JIS C 5101-3)
Terminal strength	Capacitance	The measured value should be stable.	As per 4.35 JIS C 5101-1 As per 4.9 JIS C 5101-3
	Appearance	There should be no significant abnormality.	A force is applied to the terminal until it bends to 1mm and by a prescribed tool maintains the condition for 5s. (See the figure below) 
Adhesiveness		The terminal should not come off.	As per 4.34 JIS C 5101-1 As per 4.8 JIS C 5101-3 Apply force of 2N in the two directions shown in the figure below for 10±1s after mounting the terminal on a circuit board. 
Dimensions		Refer to "External dimensions".	Measure using a caliper of JIS B 7507 Class 2 or higher grade.
Resistance to solvents		The indication should be clear.	As per 4.32 JIS C 5101-1 As per 4.18 JIS C 5101-3 Dip in the isopropyl alcohol for 30±5s, at room temperature.
Solderability		3/4 or more surface area of the solder coated terminal dipped in the soldering bath should be covered with the new solder.	As per 4.15.2 JIS C 5101-1 As per 4.7 JIS C 5101-3 Dip speed=25±2.5mm / s Pre-treatment (accelerated aging): Leave the sample on the boiling distilled water for 1h. Solder temp. : 245±5°C Duration : 3±0.5s Solder : M705 Flux : Rosin 25% IPA 75%
Vibration	Capacitance	Measure value should not fluctuate during the measurement.	As per 4.17 JIS C 5101-1 Frequency : 10 to 55 to 10Hz/min.
	Appearance	There should be no significant abnormality.	Amplitude : 1.5mm Time : 2h each in X and Y directions Mounting : The terminal is soldered on a print circuit board.

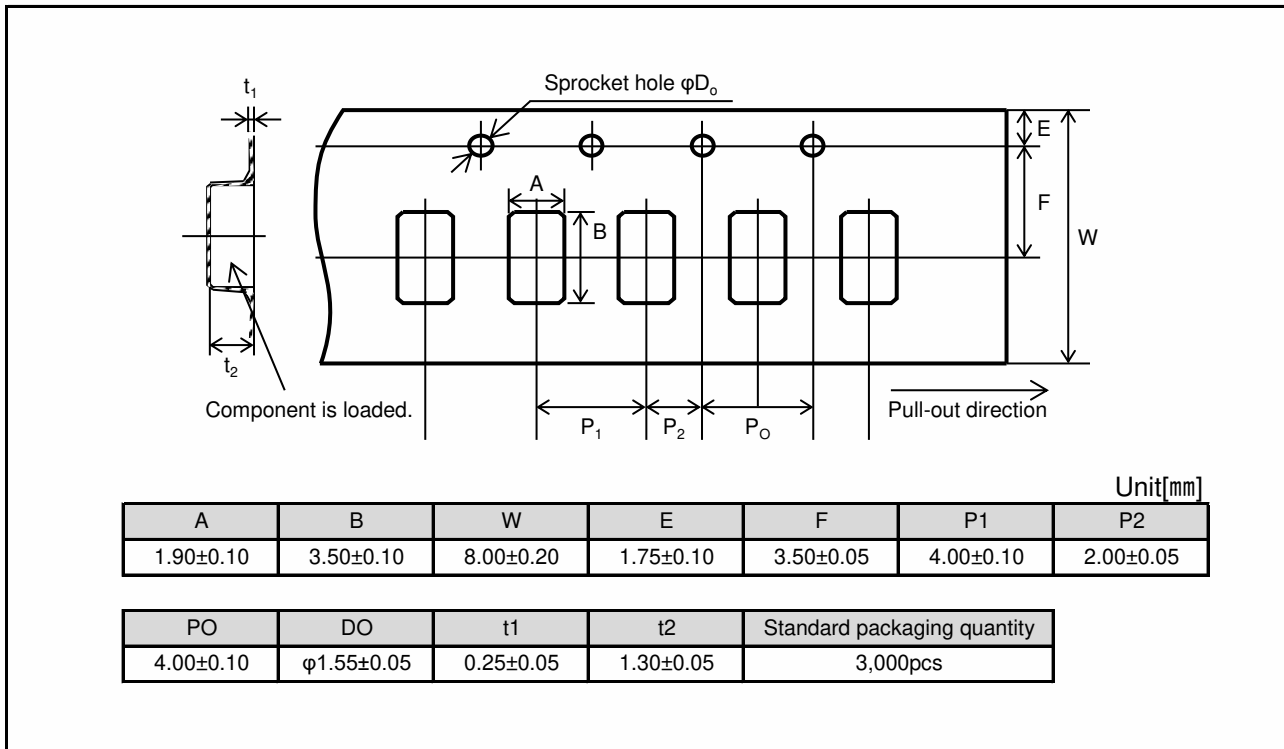
## ● Standard products list

Part No.	Rated voltage 85°C (V)	Category voltage 125°C (V)	Surge voltage 85°C (V)	Cap. 120Hz ( $\mu$ F)	Tolerance (%)	Leakage current 25°C 1WV 5min ( $\mu$ A)	tan $\delta$ 120Hz			Impedance 100kHz ( $\Omega$ )
							-55°C (%)	25°C (%)	125°C (%)	
TCTAL0G227M8R-D	4	2.5	5	220	$\pm$ 20	20.0	35	20	25	2.5
TCTAL0J107M8R	6.3	4	8	100	$\pm$ 20	6.3	34	18	24	3
TCTAL0J157M8R	6.3	4	8	150	$\pm$ 20	94.5	80	30	40	2.7
* TCTAL0J227M8R-V1	6.3	4	6.3	220	$\pm$ 20	280.0	80	30	40	2.5
TCTAL1A476M8R	10	6.3	13	47	$\pm$ 20	4.7	35	20	25	4
* TCTAL1A107M8R-V1	10	6.3	10	100	$\pm$ 20	50.0	80	30	40	2.5
TCTAL1C226M8R	16	10	20	22	$\pm$ 20	3.6	35	20	25	4
TCTAL1C336M8R	16	10	20	33	$\pm$ 20	5.3	35	20	25	4
TCTAL1D106M8R	20	13	26	10	$\pm$ 20	2.0	30	15	20	8
TCTAL1D226M8R-V1	20	13	20	22	$\pm$ 20	4.4	35	20	25	4
TCTAL1E475M8R	25	16	32	4.7	$\pm$ 20	1.2	30	15	20	8
TCTAL1V335M8R	35	22	44	3.3	$\pm$ 20	1.2	30	15	20	8

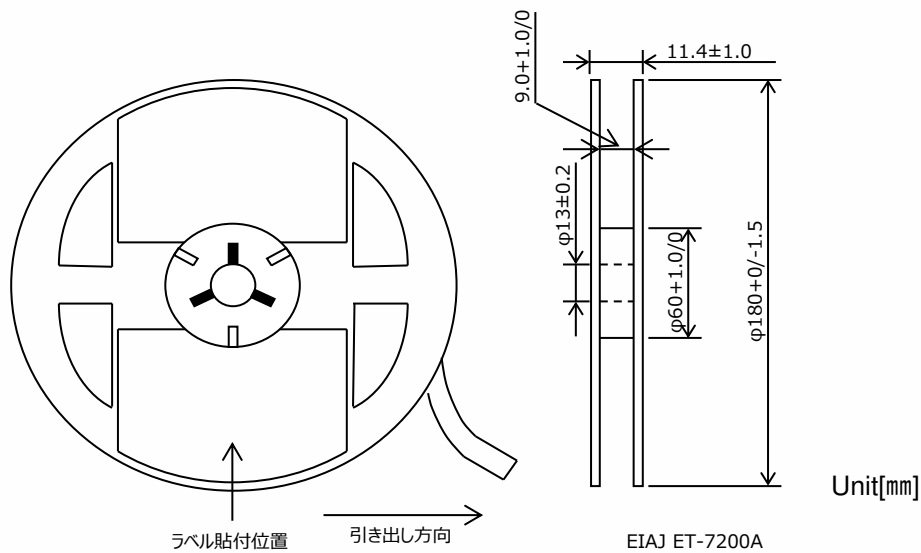
\*Contact us

Please ask for latest specification to our sales.

● Packaging specifications



● Reel dimensions



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