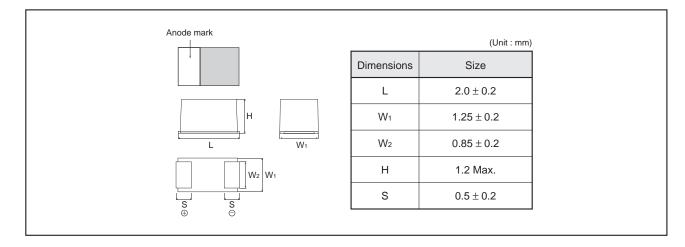


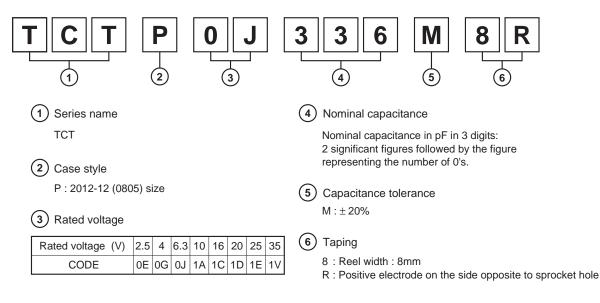
Features

- 1) Bottom electrode configuration results in significantly greater compactness.
- 2) Filet 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



*This specification has possibility of charge, due to underdevelopment product.

Please ask for latest specification to our sales.

•Rated table

					voltage (V.DC)				
(μF)	2.5	4	6.3	10	16	20	25	35	
1.0 (105)								☆ P	
2.2 (225)							Р		
3.3 (335)							☆P		
4.7 (475)						☆P			
10 (106)					Р				
22 (226)				Р					
33 (336)			Р	Р					
47 (476)		Р	Р	☆P					
100 (107)		Р							
150 (157)	☆P	☆P							

Remark) Case size codes (P) in the above show products line-up.

 $\stackrel{\wedge}{\curvearrowright} \text{Under development}$

Marking

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

- (1) Polarity : The polarity should be shown by \Box 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)
е	2.5
g	4
j	6.3
A	10
С	16
D	20
E	25
V	35

Capacitance Code	Nominal Capacitance (μF)
A	1.0
E	1.5
J	2.2
N	3.3
S	4.7
а	10
е	15
j	22
n	33
S	47
ā	100
ē	150
j	220

Visual typical example

voltage code and capacitance code are variable with parts number.

[P case]

EX.)
$$\frac{j}{(1)}$$
 $\frac{n}{(2)}$

(1) voltage code (2) capacitance code



Characteristics

Item		Performance Tes	Test conditions (based on JIS C 5101–1 and JIS C 5101–3)		
Operating Temperature		-55°C to +125°C Voltag	ge reduction when temperature exceeds +85°C		
Maximum operating temperature with no voltage derating		+85°C			
Rated voltage (V.DC)		2.5 4 6.3 10 16 20 25 35 at 85°	De		
Category voltag	e (V.DC)	1.6 2.5 4 6.3 10 13 16 22 at 125	5°C		
Surge voltage (V.DC)	3.2 5.2 8 13 20 26 32 44 at 85°	De		
DC Leakage cu	rrent	" Standard list " As pe	er 4.9 JIS C 5101-1 er 4.5.1 JIS C 5101-3 ge : Rated voltage for 5min		
Capacitance tolerance		±20% As pe Measurements to the second	er 4.7 JIS C 5101-1 er 4.5.2 JIS C 5101-3 uring frequency : 120±12Hz uring voltage : 0.5Vrms +1.5V.DC uring circuit : DC Equivalent series circuit		
Tangent of loss angle (Df, tan δ)		" Standard list " As pe Measu Measu	er 4.8 JIS C 5101-1 er 4.5.3 JIS C 5101-3 uring frequency : 120±12Hz uring voltage : 0.5Vrms +1.5V.DC uring circuit : DC Equivalent series circuit		
Impedance		" Standard list " As pe Measurements Measurements Measure	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 Appearar Soldering heat		The indications should be clear.	As per 4.14 JIS C 5101-1 As per 4.6 JIS C 5101-3		
	L.C.		Dip in the solder bath Solder temp : 260±5°C Duration : 5±0.5s Repetition : 1 After the specimens, leave it at room temperature for over 24h and then measure the sample.		
	⊿C / C				
	Df (tan δ)	Less than 200% of initial limit After t			
Temperature cycle			As per 4.16 JIS C 5101-1 As per 4.10 JIS C 5101-3		
	L.C.		tition : 5 cycles cle : steps 1 to 4) without discontinuation.		
	⊿c / c	Within ±20% of initial value	Temp. Time		
	Df (tan δ)		1 -55±3°C 30±3min. 2 Room temp. 3min. or less 3 125±2°C 30±3min. 4 Room temp. 3min. or less the specimens, leave it at room temperature for 24h and then measure the sample.		
Moisture resistance	Appearance	The indications should be clear. As pe	er 4.22 JIS C 5101-1 er 4.12 JIS C 5101-3		
	L.C.		leaving the sample under such atmospheric tion that the temperature and humidity are		
-	⊿c / c	Within ±20% of initial value 60±2°	°C and 90 to 95% RH, respectively, for 500±12h it at room		
	Df (tan δ)		erature for over 24h and then measure the		

Item		Performance	Test conditions (based on JIS C 5101-1 and JIS C 5101-3)			
Temperature Stability	Temp.	–55°C	As per 4.29 JIS C 5101-1 As per 4.13 JIS C 5101-3			
Stability	⊿c / c	Within 0/-15% of initial value				
	Df (tan δ)	Shall be satisfied the voltage on " Standard list "	_			
	L.C.	-				
	Temp.	+85°C				
	⊿C / C	Within +15/0% of initial value				
	Df (tan δ)	Shall be satisfied the voltage on " Standard list "				
	L.C.	Less than 1000% of initial limit				
	Temp.	+125°C				
	⊿c / c	Within +20/0% of initial value				
	Df (tan δ)	Shall be satisfied the voltage on " Standard list "				
	L.C.	Less than 1250% of initial limit.				
Surge voltage	Appearance	There should be no significant abnormality.	As per 4.26JIS C 5101-1			
	L.C.	Less than 200% of initial limit	As per 4.14JIS C 5101-3 Apply the specified surge voltage via the serial resistance of			
	⊿c / c	Within ±20% of initial value	1kΩ every 5±0.5 min. for 30±5 s. each time in the atmospheric condition of $85\pm2^{\circ}$ C. Repeat this procedure 1,000 times.			
	Df (tan δ)	Less than 200% of initial limit	After the specimens, leave it at room temperature for over 24h and then measure the sample.			
oading at	Appearance	There should be no significant abnormality.	As per 4.23 JIS C 5101-1			
High temperature	L.C.	Less than 200% of initial limit	As per 4.15 JIS C 5101-3 After applying the rated voltage for 1000+36/0 h without			
	⊿c / c	Within ±20% of initial value	discontinuation via the serial resistance of 3Ω or less at a temperature of $85\pm2^\circ$ C, leave the sample at room temperature / humidity for over 24h and measure the value.			
	Df (tan δ)	Less than 200% of initial limit				
Terminal	Capacitance	The measured value should be stable.	As per 4.35 JIS C 5101-1			
strength Appearance		There should be no significant abnormality.	As per 4.9 JIS C 5101-3 A force is applied to the terminal until it bends to 1mm and by a prescribed tool maintain the condition for 5s. (See the figure below) (Unit : mm) f(Apply force) thickness=1.6mm f(Apply force)			
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 5N in the two directions shown in the figure below for 10±1s after mounting the terminal on a circuit board.			

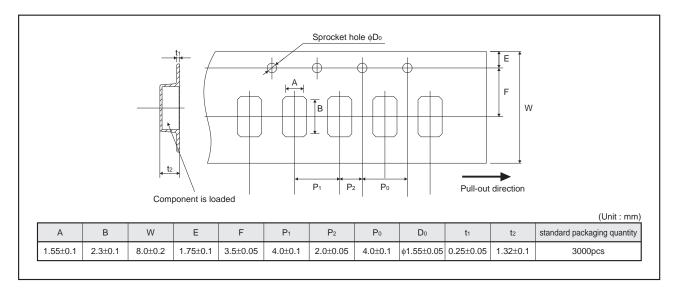
Item		Performance	Test conditions (based on JIS C 5101–1 and JIS C 5101–3)			
Dimensions		Refer to "External dimensions"	Measure using a caliper of JIS B 7507 Class 2 or higher grade.			
Resistance to solvents		The indication should be clear	As per 4.32 JIS C 5101-1 As per 4.18 JIS C 5101-3 Dip in the 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 1 h. 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. Amplitude : 1.5mm			
	Appearance	There should be no significant abnormality.	Time : 2h each in X and Y directions Mounting : The terminal is soldered on a print circuit board.			

•Standard products list

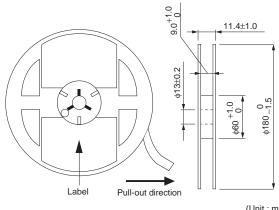
Part No.	Rated voltage 85°C	Category voltage 125°C	Surge voltage 85°C	Cap. 120Hz	Tolerance	Leakage current 25°C		Df 120Hz (%)		Impedance 100kHz
	(V)	(V)	(V)	(μF)	(%)	1WV.60s (μΑ)	–55°C	25°C 85°C	125°C	(Ω)
* TCT P 0E 157 M8R	2.5	1.6	3.2	150	± 20	18.8	60	30	40	4.0
TCT P 0G 476 M8R	4	2.5	5	47	± 20	1.9	30	20	30	4.0
TCT P 0G 107 M8R	4	2.5	5	100	± 20	20.0	60	30	40	4.0
* TCT P 0J 157 M8R	4	2.5	5	150	± 20	60.0	-	-	-	-
TCT P 0J 336 M8R	6.3	4	8	33	± 20	2.1	30	20	30	4.0
TCT P 0J 476 M8R	6.3	4	8	47	± 20	14.8	60	30	40	4.0
TCT P 1A 226 M8R	10	6.3	13	22	± 20	2.2	30	20	30	5.0
TCT P 1A 336 M8R	10	6.3	13	33	± 20	16.5	60	30	40	4.0
* TCT P 1A 476 M8R	10	6.3	13	47	± 20	23.5	60	30	40	4.0
TCT P 1C 106 M8R	16	10	20	10	± 20	1.6	30	20	30	6.0
* TCT P 1D 475 M8R	20	13	26	4.7	± 20	1.0	30	20	30	6.0
TCT P 1E 225 M8R	25	16	32	2.2	± 20	0.6	30	20	30	8.0
* TCT P 1E 335 M8R	25	16	32	3.3	± 20	0.9	30	20	30	8.0
* TCT P 1V 105 M8R	35	22	44	1.0	± 20	0.5	30	20	30	8.0

* = Under development

Packaging specifications



•Reel dimensions



(Unit : mm) EIAJ ET-7200A



Notice

Precaution on using ROHM Products

1. Our Products are designed and manufactured for application in ordinary electronic equipments (such as AV equipment, OA equipment, telecommunication equipment, home electronic appliances, amusement equipment, etc.). If you intend to use our Products in devices requiring extremely high reliability (such as medical equipment ^(Note 1), transport equipment, traffic equipment, aircraft/spacecraft, nuclear power controllers, fuel controllers, car equipment including car accessories, safety devices, etc.) and whose malfunction or failure may cause loss of human life, bodily injury or serious damage to property ("Specific Applications"), please consult with the ROHM sales representative in advance. Unless otherwise agreed in writing by ROHM in advance, ROHM shall not be in any way responsible or liable for any damages, expenses or losses incurred by you or third parties arising from the use of any ROHM's Products for Specific Applications.

(Note1) Medical Equipment Classification of the Specific Applications

JAPAN	USA	EU	CHINA
CLASSⅢ		CLASS II b	
		CLASSⅢ	CLASSII

- 2. ROHM designs and manufactures its Products subject to strict quality control system. However, semiconductor products can fail or malfunction at a certain rate. Please be sure to implement, at your own responsibilities, adequate safety measures including but not limited to fail-safe design against the physical injury, damage to any property, which a failure or malfunction of our Products may cause. The following are examples of safety measures:
 - [a] Installation of protection circuits or other protective devices to improve system safety
 - [b] Installation of redundant circuits to reduce the impact of single or multiple circuit failure
- 3. Our Products are designed and manufactured for use under standard conditions and not under any special or extraordinary environments or conditions, as exemplified below. Accordingly, ROHM shall not be in any way responsible or liable for any damages, expenses or losses arising from the use of any ROHM's Products under any special or extraordinary environments or conditions. If you intend to use our Products under any special or extraordinary environments or conditions (as exemplified below), your independent verification and confirmation of product performance, reliability, etc, prior to use, must be necessary:
 - [a] Use of our Products in any types of liquid, including water, oils, chemicals, and organic solvents
 - [b] Use of our Products outdoors or in places where the Products are exposed to direct sunlight or dust
 - [C] Use of our Products in places where the Products are exposed to sea wind or corrosive gases, including Cl₂, H₂S, NH₃, SO₂, and NO₂
 - [d] Use of our Products in places where the Products are exposed to static electricity or electromagnetic waves
 - [e] Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
 - [f] Sealing or coating our Products with resin or other coating materials
 - [g] Use of our Products without cleaning residue of flux (even if you use no-clean type fluxes, cleaning residue of flux is recommended); or Washing our Products by using water or water-soluble cleaning agents for cleaning residue after soldering
 - [h] Use of the Products in places subject to dew condensation
- 4. The Products are not subject to radiation-proof design.
- 5. Please verify and confirm characteristics of the final or mounted products in using the Products.
- 6. In particular, if a transient load (a large amount of load applied in a short period of time, such as pulse. is applied, confirmation of performance characteristics after on-board mounting is strongly recommended. Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.
- 7. De-rate Power Dissipation (Pd) depending on Ambient temperature (Ta). When used in sealed area, confirm the actual ambient temperature.
- 8. Confirm that operation temperature is within the specified range described in the product specification.
- 9. ROHM shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.

Precaution for Mounting / Circuit board design

- 1. When a highly active halogenous (chlorine, bromine, etc.) flux is used, the residue of flux may negatively affect product performance and reliability.
- 2. In principle, the reflow soldering method must be used on a surface-mount products, the flow soldering method must be used on a through hole mount products. If the flow soldering method is preferred on a surface-mount products, please consult with the ROHM representative in advance.

For details, please refer to ROHM Mounting specification

Precautions Regarding Application Examples and External Circuits

- 1. If change is made to the constant of an external circuit, please allow a sufficient margin considering variations of the characteristics of the Products and external components, including transient characteristics, as well as static characteristics.
- 2. You agree that application notes, reference designs, and associated data and information contained in this document are presented only as guidance for Products use. Therefore, in case you use such information, you are solely responsible for it and you must exercise your own independent verification and judgment in the use of such information contained in this document. ROHM shall not be in any way responsible or liable for any damages, expenses or losses incurred by you or third parties arising from the use of such information.

Precaution for Electrostatic

This Product is electrostatic sensitive product, which may be damaged due to electrostatic discharge. Please take proper caution in your manufacturing process and storage so that voltage exceeding the Products maximum rating will not be applied to Products. Please take special care under dry condition (e.g. Grounding of human body / equipment / solder iron, isolation from charged objects, setting of lonizer, friction prevention and temperature / humidity control).

Precaution for Storage / Transportation

- 1. Product performance and soldered connections may deteriorate if the Products are stored in the places where:
 - [a] the Products are exposed to sea winds or corrosive gases, including Cl2, H2S, NH3, SO2, and NO2
 - [b] the temperature or humidity exceeds those recommended by ROHM
 - [c] the Products are exposed to direct sunshine or condensation
 - [d] the Products are exposed to high Electrostatic
- 2. Even under ROHM recommended storage condition, solderability of products out of recommended storage time period may be degraded. It is strongly recommended to confirm solderability before using Products of which storage time is exceeding the recommended storage time period.
- 3. Store / transport cartons in the correct direction, which is indicated on a carton with a symbol. Otherwise bent leads may occur due to excessive stress applied when dropping of a carton.
- 4. Use Products within the specified time after opening a humidity barrier bag. Baking is required before using Products of which storage time is exceeding the recommended storage time period.

Precaution for Product Label

QR code printed on ROHM Products label is for ROHM's internal use only.

Precaution for Disposition

When disposing Products please dispose them properly using an authorized industry waste company.

Precaution for Foreign Exchange and Foreign Trade act

Since concerned goods might be fallen under listed items of export control prescribed by Foreign exchange and Foreign trade act, please consult with ROHM in case of export.

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- 3. The information contained in this document is provided on an "as is" basis and ROHM does not warrant that all information contained in this document is accurate an d/or error-free. ROHM shall not be in an y way responsible or liable for any damages, expenses or losses incurred by you or third parties resulting from inaccuracy or errors of or concerning such information.



TCTP0G476M8R - Web Page

Distribution Inventory

Part Number	TCTP0G476M8R
Package	ТСТР
Unit Quantity	3000
Minimum Package Quantity	3000
Packing Type	Taping
Constitution Materials List	inquiry
RoHS	Yes