

Type TYTP Series

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The TYT series of moulded solid Tantalum chip capacitors is designed for high solder heat resistance and ease of automatic placement. The product is provided with both excellent frequency and impedance characteristics.

The four different product types cover the majority of requirements for this product series.

TYTS series is the standard type used in many industries and TYTM series extends this product range by applying advanced manufacturing technology, thereby allowing reduced sizes and extended value range.

TYTP series allows even further miniaturisation offering many values in an 0805 package size.

The series is completed with the TYTR series which offers a comprehensive range of low ESR products.

Key Features

- Excellent Frequency Characteristics
- Excellent Impedance Characteristics
- Super Compact Size
- Suitable for High Density Packaging
- 2.5V to 20V Ratings
- 10% or 20% Tolerance
- RoHS Compliant

Product Specifications

Product Specifications		Test Conditions JIS C5101-3(1998)						
Operating Temperature Range:	-55°C ~ +125°C							
Rated Voltage:	DC2.5 ~ 20V	85°C						
Surge Voltage:	DC3.2 ~ 26V	85°C						
Derated Voltage:	DC1.6 ~ 13V	125°C						
Capacitance:	0.1 ~ 10µF							
Capacitance Tolerance:	±10% or 20%	Measuring Frequency:120Hz ±10%, Measurement Circuit: Equivalent Series Circuit: Measuring Voltage Max.: 0.5Vrms,+1.5Vdc.						
Leakage Current:	Refer to standard product table	Series Protective Resistor:1000Ω Measuring Voltage: Rated voltage Measuring Time: 5 minutes						
Surge Withstanding Voltage:	ΔC/C ±10% or less tanδ Specified initial value or less LC Specified initial value or less							
Temperature Characteristics:		Specified initial value	-55°C	+85°C	+125°C			
	ΔC/C	—	-12~0%	0~+10%	0~+12%	Step	Temp.°C	Duration
	tanδ Value shown table or less	0.04	<10V 12%	<10V 12%	<10V 15%	1	+25±2	—
		0.06	≥10V 15%	≥10V 15%	≥10V 15%	2	-55±2	30 min.
	LC	0.01CV or 0.5µA or less	—	0.1CV or 5µA or less	0.12CV or 6.0µA or less	3	+25±2	30 min.
				4	+85±2	30 min.		
						5	+125±2	30 min.
						6	+25±2	—
Solder Heat Resistance:	ΔC/C ±5% or less tanδ Specified initial value or less LC Specified initial value or less	Conditioning of Solder Dip: Solder Temperature: 260 ±5°C Dip Duration: 5±0.5s Depth of Immersion: Under Surface 10mm						
Moisture Resistance:	ΔC/C ±10% or less tanδ Specified initial value or less LC Specified initial value or less	40°C 90 ~ 95% RH, 56 Days						
High-Temperature Load:	ΔC/C ±10% or less tanδ Specified initial value or less LC 125% Specified initial value or less	85°C The rated voltage is applied for 2000 hours.						
Thermal Shock:	ΔC/C ±10% or less tanδ 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 30 mins running						
Moisture Resistance Load:	ΔC/C ±10% or less tanδ 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% / 2000h	85°C The rated voltage is applied (through a protective resistor of 1Ω/V).						

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Product Availability Chart

Capacitance		Rated voltage (V.DC)					
		2.5	4.0	6.3	10	16	20
µF	Code						
0.10	104						P
0.15	154						P
0.22	224						P
0.33	334						P
0.47	474					P	P
0.68	684				P	P	P
1.0	105			P	P	P	
1.5	155		P	P	P		
2.2	225	P	P	P	P		
3.3	335	P	P	P	P		
4.7	475	P	P	P	P		
6.8	685	P	P	P			
10	106	P	P	P			

Standard Product Table

Rated Voltage V.DC	Capacitance		Case Code	DC Leakage Current mA*	Dissipation Factor (%)*	ESR (Ω)	Part Number**
	µF	Code					
2.5	2.2	225	P	0.5	6	35	TYTPOE225(x)TRF
2.5	3.3	335	P	0.5	6	25	TYTPOE335(x)TRF
2.5	4.7	475	P	0.5	6	20	TYTPOE475(x)TRF
2.5	6.8	685	P	0.5	6	10	TYTPOE685(x)TRF
2.5	10	106	P	0.5	6	6.5	TYTPOE106(x)TRF
4.0	1.5	155	P	0.5	6	30	TYTPOG155(x)TRF
4.0	2.2	225	P	0.5	6	25	TYTPOG225(x)TRF
4.0	3.3	335	P	0.5	6	20	TYTPOG335(x)TRF
4.0	4.7	475	P	0.5	6	10	TYTPOG475(x)TRF
4.0	6.8	685	P	0.5	6	7.0	TYTPOG685(x)TRF
4.0	10	106	P	0.5	6	15	TYTPOG106(x)TRF
6.3	1.0	105	P	0.5	4	25	TYTPOJ105(x)TRF
6.3	1.5	155	P	0.5	6	25	TYTPOJ155(x)TRF
6.3	2.2	225	P	0.5	6	20	TYTPOJ225(x)TRF
6.3	3.3	335	P	0.5	6	12	TYTPOJ335(x)TRF
6.3	4.7	475	P	0.5	6	7.0	TYTPOJ475(x)TRF
6.3	6.8	685	P	0.5	6	15	TYTPOJ685(x)TRF
6.3	10	106	P	0.6	6	10	TYTPOJ106(x)TRF
10	0.68	684	P	0.5	4	30	TYTTP1A684(x)TRF
10	1.0	105	P	0.5	4	25	TYTTP1A105(x)TRF
10	1.5	155	P	0.5	6	25	TYTTP1A155(x)TRF
10	2.2	225	P	0.5	6	15	TYTTP1A225(x)TRF
10	3.3	335	P	0.5	6	10	TYTTP1A335(x)TRF
10	4.7	475	P	0.5	6	15	TYTTP1A475(x)TRF
16	0.47	474	P	0.5	4	25	TYTTP1C474(x)TRF
16	0.68	684	P	0.5	4	25	TYTTP1C684(x)TRF
16	1.0	105	P	0.5	4	20	TYTTP1C105(x)TRF
20	0.1	104	P	0.5	4	25	TYTTP1D104(x)TRF
20	0.15	154	P	0.5	4	25	TYTTP1D154(x)TRF
20	0.22	224	P	0.5	4	25	TYTTP1D224(x)TRF
20	0.33	334	P	0.5	4	25	TYTTP1D334(x)TRF
20	0.47	474	P	0.5	4	25	TYTTP1D474(x)TRF
20	0.68	684	P	0.5	4	25	TYTTP1D684(x)TRF

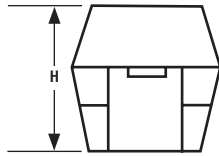
*DCL and DF measured at 20°C

** (x) = tolerance where K = 10%, M = 20%

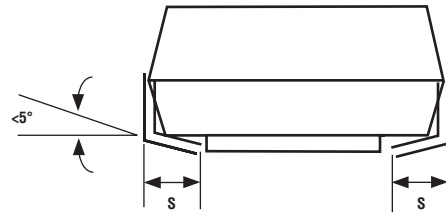
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Dimensions

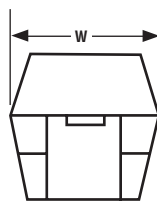
Anode (+) End View



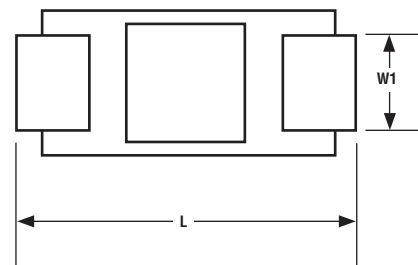
Side View



Cathode (-) End View



Bottom View



Case Code	Dimensions (mm)				
	L	W	H	S	W1
P	2.0±0.2	1.25±0.2	1.2±0.2	0.5±0.3	1.2±0.2

How to Order

TYTP	P	OE	105	K	TRF
Series	Case Code	Voltage Code	Capacitance	Tolerance	Packaging
TYTP	P	OE (2.5V) OG (4.0V) OJ (6.3V) 1A (10V) 1C (16V) 1D (20V)	eg. 105	K (10%) M (20%)	TRF = 7" Reels (P Case 3000)