

Type TYTS 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
- A, B, C & D Case Sizes
- 4V to 50V 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:		DC4 ~ 50V				85°C		
Surge Voltage:		DC5 ~ 65V				85°C		
Derated Voltage:		DC2.5 ~ 33V				125°C		
Capacitance:		0.1 ~ 68µF						
Capacitance Tolerance:		±10% or 20%				Measuring Frequency:120Hz ±10%, Measurement Circuit: Equivalent Series Circuit: Measuring Voltage Max.: 0.5Vrms,+1.5Vdc.		
Leakage Current:		0.01 CV or 0.5µA whichever is greater				Series Protective Resistor:1000Ω Measuring Voltage: Rated voltage Measuring Time: 5 minutes		
Surge Withstanding Voltage:		ΔC/C ±5% 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	—	-10~0%	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	0.12CV	3	+25±2	30 min.
				or	or	4	+85±2	30 min.
				5µA	6.0µA	5	+125±2	30 min.
				or less	or less	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 2 Times Specified initial value or less				85°C The rated voltage is applied for 2000 hours.		
Thermal Shock:		ΔC/C ±5% 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		
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)							
		4.0	6.3	10	16	20	25	35	50
µF	Code								
0.10	104							A	A
0.15	154							A	B
0.22	224							A	B
0.33	334							A	B
0.47	474						A	B	C
0.68	684					A		B	C
1.0	105				A			B	C
1.5	155			A			B	C	D
2.2	225		A			B		C	D
3.3	335	A			B			C	
4.7	475			B			C	D	
6.8	685		B			C		D	
10	106	B			C		D		
15	156			C		D			
22	226		C		D				
33	336	C		D					
47	476		D						
68	686	D							

Standard Product Table

Rated Voltage V.DC	Capacitance		Case Code	DC Leakage Current mA*	Dissipation Factor (%)*	ESR (Ω)	Part Number**
	µF	Code					
4.0	3.3	335	A	0.5	6	9.0	TYTSA0G335(x)TRF
4.0	10	106	B	0.5	6	6.0	TYTSB0G106(x)TRF
4.0	33	336	C	1.3	6	2.2	TYTSC0G336(x)TRF
4.0	68	686	D	2.7	6	1.1	TYTSD0G686(x)TRF
6.3	2.2	225	A	0.5	6	9.0	TYTSA0J225(x)TRF
6.3	6.8	685	B	0.5	6	5.0	TYTSB0J685(x)TRF
6.3	22	226	C	1.39	6	1.8	TYTSC0J226(x)TRF
6.3	47	476	D	2.96	6	0.8	TYTSD0J476(x)TRF
10	1.5	155	A	0.5	6	10	TYTSA1A155(x)TRF
10	4.7	475	B	0.5	6	5.0	TYTSB1A475(x)TRF
10	15	156	C	1.5	6	2.2	TYTSC1A156(x)TRF
10	33	336	D	3.3	6	1.1	TYTSD1A336(x)TRF
16	1.0	105	A	0.5	4	11	TYTSA1C105(x)TRF
16	3.3	335	B	0.5	6	3.5	TYTSB1C335(x)TRF
16	10	106	C	1.6	6	2.0	TYTSC1C106(x)TRF
16	22	226	D	3.5	6	1.1	TYTSD1C226(x)TRF
20	0.68	684	A	0.5	4	12	TYTSA1D684(x)TRF
20	2.2	225	B	0.5	6	3.5	TYTSB1D225(x)TRF
20	6.8	685	C	1.4	6	2.0	TYTSC1D685(x)TRF
20	15	156	D	3.0	6	1.1	TYTSD1D156(x)TRF
25	0.47	474	A	0.5	4	14	TYTSA1E474(x)TRF
25	1.5	155	B	0.5	6	5.0	TYTSB1E155(x)TRF
25	4.7	475	C	1.2	6	2.4	TYTSC1E475(x)TRF
25	10	106	D	2.5	6	1.2	TYTSD1E106(x)TRF
35	0.1	104	A	0.5	4	24	TYTSA1V104(x)TRF
35	0.15	154	A	0.5	4	21	TYTSA1V154(x)TRF
35	0.22	224	A	0.5	4	18	TYTSA1V224(x)TRF
35	0.33	334	A	0.5	4	15	TYTSA1V334(x)TRF
35	0.47	474	B	0.5	4	10	TYTSB1V474(x)TRF
35	0.68	684	B	0.5	4	8.0	TYTSB1V684(x)TRF
35	1.0	105	B	0.5	4	6.5	TYTSB1V105(x)TRF
35	1.5	155	C	0.5	6	4.5	TYTSC1V155(x)TRF
35	2.2	225	C	0.8	6	3.5	TYTSC1V225(x)TRF
35	3.3	335	C	1.2	6	2.5	TYTSC1V335(x)TRF
35	4.7	475	D	1.6	6	1.5	TYTSD1V475(x)TRF

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Standard Product Table (continued)

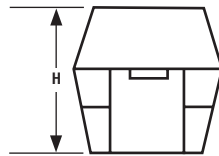
Rated Voltage V.DC	Capacitance		Case Code	DC Leakage Current mA*	Dissipation Factor (%)*	ESR (Ω)	Part Number**
	μF	Code					
35	6.8	685	D	2.4	6	1.3	TYTSD1V685(x)TRF
50	0.1	104	A	0.5	4	22	TYTSA1H104(x)TRF
50	0.15	154	B	0.5	4	17	TYTSB1H154(x)TRF
50	0.22	224	B	0.5	4	14	TYTSB1H224(x)TRF
50	0.33	334	B	0.5	4	12	TYTSB1H334(x)TRF
50	0.47	474	C	0.5	4	8.0	TYTSC1H474(x)TRF
50	0.68	684	C	0.5	4	7.0	TYTSC1H684(x)TRF
50	1.0	105	C	0.5	4	5.5	TYTSC1H105(x)TRF
50	1.5	155	D	0.8	6	4.0	TYTSD1H155(x)TRF
50	2.2	225	D	1.1	6	2.5	TYTSD1H225(x)TRF

*DCL and DF measured at 20°C

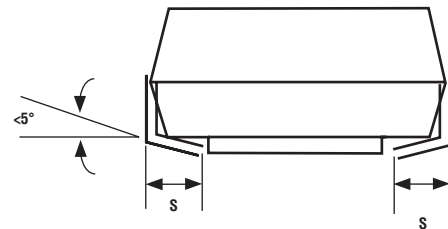
** (x) = tolerance where K = 10%, M = 20%

Dimensions

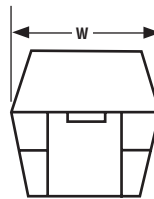
Anode (+) End View



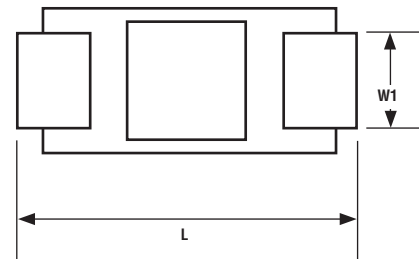
Side View



Cathode (-) End View



Bottom View



Case Code	Dimensions (mm)				
	L	W	H	S	W1
A	3.2±0.2	1.6±0.2	1.6±0.2	0.8±0.3	1.2±0.1
B	3.5±0.2	2.8±0.2	1.9±0.2	0.8±0.3	2.2±0.1
C	6.0±0.3	3.2±0.3	2.5±0.3	1.3±0.3	2.2±0.1
D	7.3±0.3	4.3±0.3	2.8±0.3	1.3±0.3	2.4±0.1

How to Order

TYTS Series	A Case Code	0G Voltage Code	105 Capacitance	K Tolerance	TRF Packaging
TYTS	A, B, C or D	0G (4.0V) 0J (6.3V) 1A (10V) 1C (16V) 1D (20V) 1E (25V) 1V (35V) 1H (50V)	eg. 105	K (10%) M (20%)	TRF = 7" Reels (A and B Case 2000) (C and D Case 500)