SHANGHAI YONGMING ELECTRONICS CO., LTD.

Conductive polymer tantalum electrolytic capacitor

CONDUCTIVE POLYMER TANTALUM ELECTROLYTIC CAPACITOR

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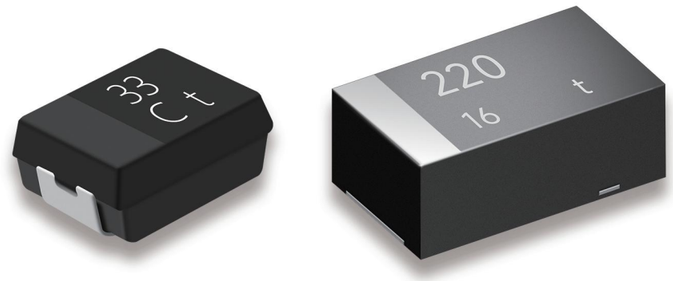

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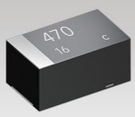
TQD42 Large capacity products  P18

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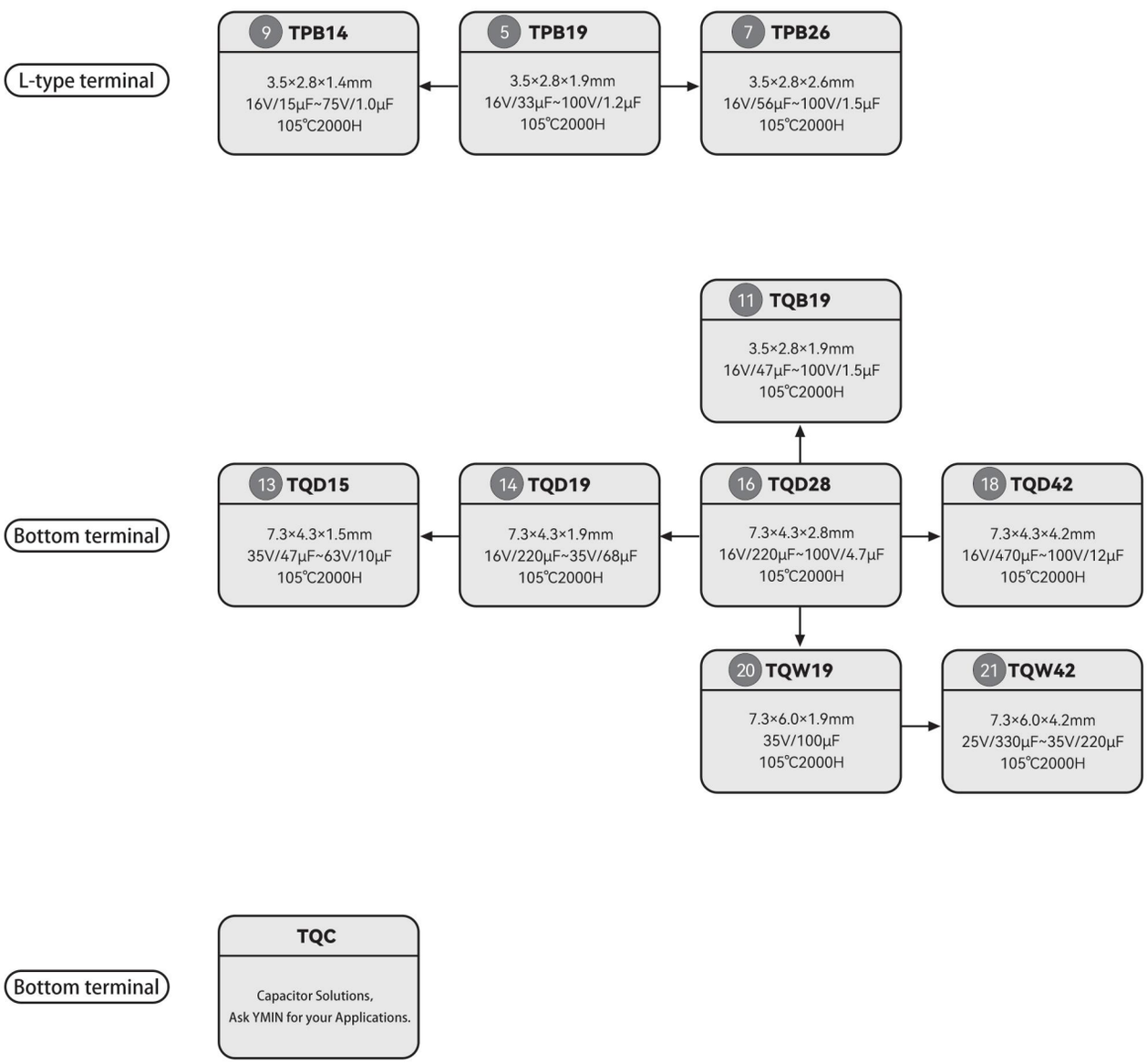
■ Product List

category	series	Features	High pressure resistant products	Large capacity products	low ESR	Miniaturized products	Customized products	Rated Voltage Range (V)	Capacitance Range (μF)	ESR (mΩ)	Operating temperature range (° C)	page number
Conductive polymer Tantalum electrolytic capacitor	TPB19	Standard L-type terminals	●		●			16~100	1.2~33	70~300	-55~+105	5
	TPB26	Large-capacity L-type terminals	●	●	●			16~100	1.5~56	90~300	-55~+105	7
	TPB14	Ultra-thin L-type terminals	●		●	●		16~75	1~15	90~300	-55~+105	9
	TQB19	Standard bottom-side terminals	●		●			16~100	1.5~47	70~300	-55~+105	11
	TQD15	Ultra-thin bottom-side terminals			●	●		35~63	10~47	90~100	-55~+105	13
	TQD19	Thin bottom-side terminals			●	●		16~35	33~220	90~100	-55~+105	14
	TQD28	Standard bottom-side terminals	●		●			16~100	4.7~220	50~100	-55~+105	16
	TQD42	Large-capacity bottom-side terminals	●	●	●			16~100	12~470	70~100	-55~+105	18
	TQW19	Thin bottom-side terminals			●	●		35	100	100	-55~+105	20
	TQW42	Large-capacity bottom-side terminals	●	●	●			25~35	100~330	60~100	-55~+105	21
	TQC	Custom-made products					●	Voltage requirements	Capacity requirements	Customer needs	Temperature requirements	/

■ Product System Diagram



Capacitor Product Coding Rules

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

series	code
TPB14	TPB
TPB19	TPB
TPB26	TPB
TQB19	TQB
TQD15	TQD
TQD19	TQD
TQD28	TQD
TQD42	TQD
TQW19	TQW
TQW42	TQW

Capacity(μF)	code
1	1R0
1.5	1R5
2.2	2R2
2.7	2R7
3.3	3R3
3.9	3R9
4.7	4R7
5.6	5R6
6.8	6R8
8.2	8R2
10	100
12	120
15	150
22	220
27	270
33	330
39	390
47	470
56	560
68	680
82	820
100	101
120	121
150	151
180	181
220	221
270	271
330	331
390	391
470	471
560	561
680	681
820	821
1000	102
1200	122
1500	152

Capacity range	code
±20%	M

Voltage(V)	code
16	1C
20	1D
25	1E
35	1V
50	1H
63	1J
75	1K
100	2A

size(mm)	code
3.5*2.8*1.4	B14
3.5*2.8*1.9	B19
3.5*2.8*2.6	B26
7.3*4.3*1.5	D15
7.3*4.3*1.9	D19
7.3*4.3*2.8	D28
7.3*4.3*4.0	D40
7.3*4.3*4.2	D42
7.3*6.0*1.9	W19
7.3*6.0*4.2	W42

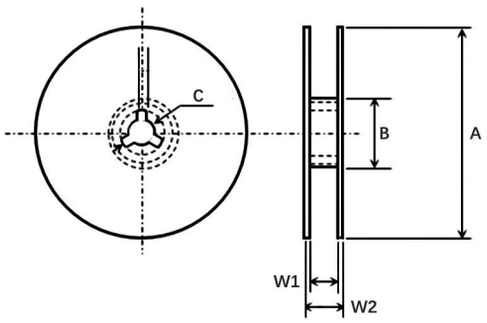
ESR(mΩ)	code
9	009R
11	011R
15	015R
20	020R
21	021R
35	035R
45	045R
70	070R
80	080R
90	090R
100	100R
150	150R
200	200R
300	300R

Rated temperature (℃)	code
85	D
105	N
125	H

Code rules: Add the first two digits to the number of trailing zeros, where R represents the decimal point.

■ Reel Specifications

Unit: mm



Applicable series：TPB14/TPB19/TPB26/TQB19

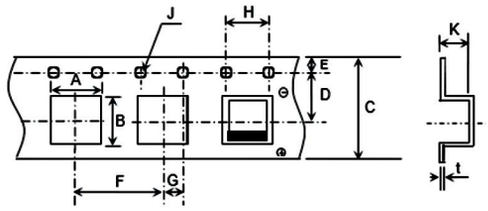
A	B	C	W1	W2
Φ180±2	Φ60±2	Φ13±0.2	9±0.5	11.4±1

Applicable series：TQD15/TQD19/TQD28/TQD42/TQW19/TQW28/TQW42

A	B	C	W1	W2
Φ330±2	Φ80±2	Φ13±0.2	14±0.5	20±1

■ braiding specifications

Unit: mm



series	A±0.1	B±0.1	C±0.3	D±0.05	E±0.1	F±0.1	G±0.05	H±0.1	$J^{+0.1}_{-0}$	K±0.1	t±0.05
TPB14	3.3	3.8	8.0	3.5	1.75	4.0	2.0	4.0	Φ1.5	1.7	0.25
TPB19/TQB19	3.3	3.8	8.0	3.5	1.75	4.0	2.0	4.0	Φ1.5	2.1	0.25
TPB26	3.3	3.8	8.0	3.5	1.75	4.0	2.0	4.0	Φ1.5	3.0	0.25
TQD15	4.5	7.5	12.0	5.5	1.75	8.0	2.0	4.0	Φ1.5	1.7	0.3
TQD19	4.5	7.5	12.0	5.5	1.75	8.0	2.0	4.0	Φ1.5	2.4	0.3
TQD28	4.5	7.5	12.0	5.5	1.75	8.0	2.0	4.0	Φ1.5	3.2	0.3
TQD42	4.5	7.5	12.0	5.5	1.75	8.0	2.0	4.0	Φ1.5	4.6	0.3
TQW19	6.4	7.5	12.0	5.5	1.75	8.0	2.0	4.0	Φ1.5	2.4	0.3
TQW42	6.4	7.5	12.0	5.5	1.75	8.0	2.0	4.0	Φ1.5	4.6	0.3

■ Packaging quantity

unit:pcs

series	size	7-inch reel	13-inch reel
TPB14	3.5*2.8*1.4	2500	N/A
TPB19	3.5*2.8*1.9	2000	N/A
TPB26	3.5*2.8*2.6	1500	N/A
TQB19	3.5*2.8*1.9	2000	N/A
TQD15	7.3*4.3*1.5	1000	4000
TQD19	7.3*4.3*1.9	1000	3000
TQD28	7.3*4.3*2.8	500	2500
TQD42	7.3*4.3*4.2	500	2000
TQW19	7.3*6.0*1.9	500	3000
TQW42	7.3*6.0*4.2	400	1000

TPB19

◆Miniaturized (L3.5×W2.8×H1.9)

◆Low ESR, high ripple current

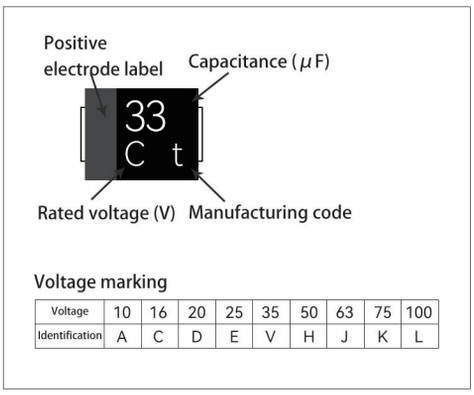
◆High voltage withstand (100V max.)

◆RoHS compliant (2011/65/EU)

■ Main technical parameters

project	characteristic
Operating temperature range	－55~+105℃
Rated operating voltage	16~100V
Capacity range	1~33μF 120Hz/20℃
Capacity tolerance	±20%（120Hz/20℃）
Loss tangent	Values below the standard product list: 120Hz/20℃
Leakage current	Values below the standard product list: Charging for 5 minutes at rated voltage, 20℃
Equivalent series resistance (ESR)	Values below the standard product list: 100kHz/20℃
Surge voltage (V)	1.15 times the rated voltage
Durability	Under rated temperature, after applying the rated operating voltage for 2000 hours and being placed at 20° C for 16 hours, the product should meet the following requirements: Rate of change of capacitance: ±20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ Initial specification value
High temperature and humidity	After being placed at 60℃ and 90%~95%RH for 500 hours without applying voltage, and then placed at 20℃ for 16 hours, the product should meet the following requirements: Rate of change of capacitance: +40% -20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ 300% of the initial specification value

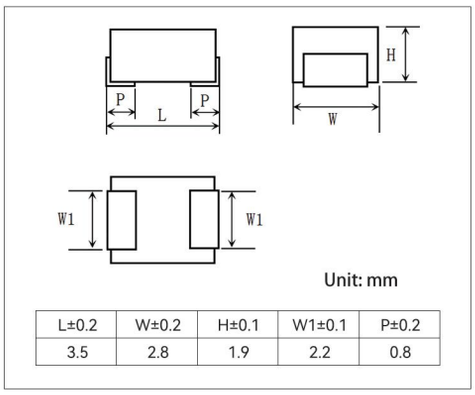
■ logo



Voltage marking

Voltage	10	16	20	25	35	50	63	75	100
Identification	A	C	D	E	V	H	J	K	L

■ External dimensions



Unit: mm

L±0.2	W±0.2	H±0.1	W1±0.1	P±0.2
3.5	2.8	1.9	2.2	0.8

■ Temperature coefficient of rated ripple current

Temperature	-55℃ < T≦45℃	45℃ < T≦85℃	85℃ < T≦105℃
Rated 105℃Product coefficient	1.0	0.7	0.25

Note: The capacitor surface temperature should not exceed the product's maximum operating temperature.

■ Rated ripple current frequency correction factor

Frequency (Hz)	120Hz	1kHz	10kHz	100~300kHz
Correction Factor	0.10	0.45	0.50	1.00

TPB19

■ List of Standard Products

Rated voltage (V)	Rated temperature (°C)	Category Voltage (V)	Category Temperature (°C)	Nominal Capacity (μF)	Product dimensions (mm)			L.C. (μA, 5min)	Tan δ 120Hz	ESR (mΩ 100KHz)	Rated ripple current (mA/r.m.s) 45℃ 100KHz
					L	W	H				
16	105℃	16	105℃	10	3.5	2.8	1.9	16	0.10	100	900
	105℃	16	105℃	15	3.5	2.8	1.9	24	0.10	70	1100
	105℃	16	105℃	33	3.5	2.8	1.9	53	0.10	70	1100
20	105℃	20	105℃	10	3.5	2.8	1.9	20	0.10	100	900
	105℃	20	105℃	22	3.5	2.8	1.9	44	0.10	90	950
25	105℃	25	105℃	10	3.5	2.8	1.9	25	0.10	100	900
	105℃	25	105℃	15	3.5	2.8	1.9	37.5	0.10	100	900
35	105℃	35	105℃	4.7	3.5	2.8	1.9	16.5	0.10	150	800
	105℃	35	105℃	6.8	3.5	2.8	1.9	23.8	0.10	150	800
	105℃	35	105℃	10	3.5	2.8	1.9	35	0.10	150	800
	105℃	35	105℃	12	3.5	2.8	1.9	42	0.10	150	800
50	105℃	50	105℃	2.2	3.5	2.8	1.9	11	0.10	200	750
	105℃	50	105℃	3.3	3.5	2.8	1.9	16.5	0.10	200	750
63	105℃	63	105℃	1.5	3.5	2.8	1.9	9.5	0.10	200	750
	105℃	63	105℃	2.2	3.5	2.8	1.9	13.9	0.10	200	750
75	105℃	75	105℃	1.0	3.5	2.8	1.9	7.5	0.10	300	600
	105℃	75	105℃	1.5	3.5	2.8	1.9	11.3	0.10	300	600
100	105℃	100	105℃	1.2	3.5	2.8	1.9	12	0.10	300	600

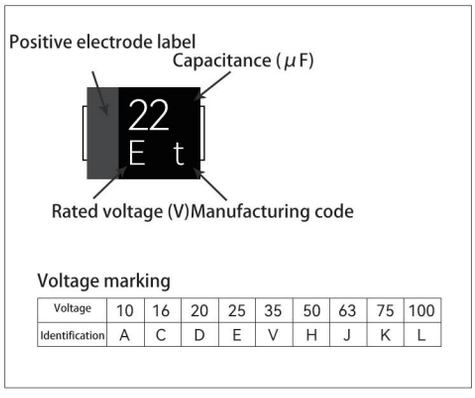
TPB26

◆Large capacity, miniaturized (L3.5×W2.8×H2.6)
◆Low ESR, high ripple current
◆High withstand voltage (100V max.)
◆RoHS compliant (2011/65/EU)

■ Main technical parameters

project	characteristic
Operating temperature range	－55~+105℃
Rated operating voltage	16~100V
Capacity range	1.5~56μF 120Hz/20℃
Capacity tolerance	±20%（120Hz/20℃）
Loss tangent	Values below the standard product list: 120Hz/20℃
Leakage current	Values below the standard product list: Charging for 5 minutes at rated voltage, 20℃
Equivalent series resistance (ESR)	Values below the standard product list: 100kHz/20℃
Surge voltage (V)	1.15 times the rated voltage
Durability	Under rated temperature, after applying the rated operating voltage for 2000 hours and being placed at 20° C for 16 hours, the product should meet the following requirements: Rate of change of capacitance: ±20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ Initial specification value
High temperature and humidity	After being placed at 60℃ and 90%~95%RH for 500 hours without applying voltage, and then placed at 20℃ for 16 hours, the product should meet the following requirements: Rate of change of capacitance: +40% -20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ 300% of the initial specification value

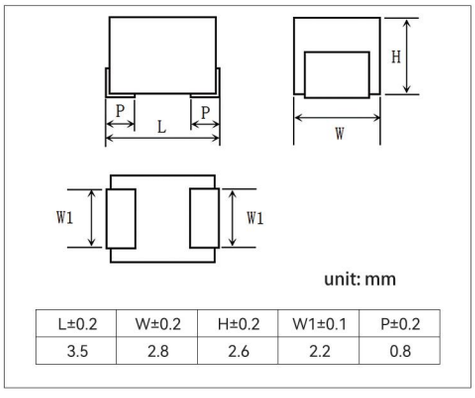
■ logo



Voltage marking

Voltage	10	16	20	25	35	50	63	75	100
Identification	A	C	D	E	V	H	J	K	L

■ External dimensions



unit: mm

L±0.2	W±0.2	H±0.2	W1±0.1	P±0.2
3.5	2.8	2.6	2.2	0.8

■ Temperature coefficient of rated ripple current

Temperature	-55℃ < T≦45℃	45℃ < T≦85℃	85℃ < T≦105℃
Rated 105℃, coefficient	1.0	0.7	0.25

Note: The capacitor surface temperature should not exceed the product's maximum operating temperature.

■ Rated ripple current frequency correction factor

Frequency (Hz)	120Hz	1kHz	10kHz	100~300kHz
Correction Factor	0.10	0.45	0.50	1.00

TPB26

■ List of Standard Products

Rated voltage (V)	Rated temperature (° C)	Category Voltage (V)	Category Temperature (° C)	Nominal Capacity (μF)	Product dimensions (mm)			L.C. (μA, 5min)	Tan δ 120Hz	ESR (mΩ 100KHz)	Rated ripple current (mA/r.m.s) 45℃ 100KHz
					L	W	H				
16	105℃	16	105℃	47	3.5	2.8	2.6	75.2	0.10	90	1000
	105℃	16	105℃	56	3.5	2.8	2.6	89.6	0.10	90	1000
20	105℃	20	105℃	33	3.5	2.8	2.6	66	0.10	90	1000
25	105℃	25	105℃	22	3.5	2.8	2.6	55	0.10	100	800
35	105℃	35	105℃	10	3.5	2.8	2.6	35	0.10	200	750
50	105℃	50	105℃	4.7	3.5	2.8	2.6	23.5	0.10	200	750
63	105℃	63	105℃	2.7	3.5	2.8	2.6	17	0.10	200	750
75	105℃	75	105℃	2	3.5	2.8	2.6	15	0.10	300	600
100	105℃	100	105℃	1.5	3.5	2.8	2.6	15	0.10	300	600

TPB14

◆Slim profile (L3.5×W2.8×H1.4)

◆Low ESR, high ripple current

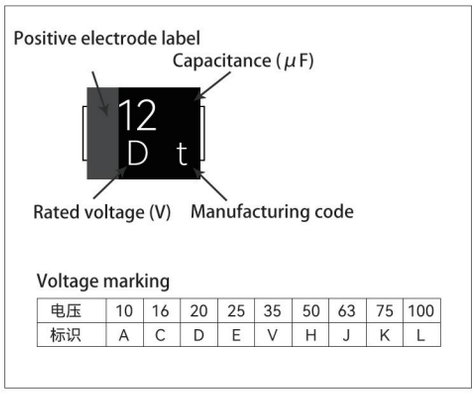
◆High voltage withstand (75V max.)

◆RoHS compliant (2011/65/EU)

■ Main technical parameters

project	characteristic
Operating temperature range	－55~+105℃
Rated operating voltage	16~75V
Capacity range	1~15μF 120Hz/20℃
Capacity tolerance	±20%（120Hz/20℃）
Loss tangent	Values below the standard product list: 120Hz/20℃
Leakage current	Values below the standard product list: Charging for 5 minutes at rated voltage, 20℃
Equivalent series resistance (ESR)	Values below the standard product list: 100kHz/20℃
Surge voltage (V)	1.15 times the rated voltage
Durability	Under rated temperature, after applying the rated operating voltage for 2000 hours and being placed at 20° C for 16 hours, the product should meet the following requirements: Rate of change of capacitance: ±20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ Initial specification value
High temperature and humidity	After being placed at 60℃ and 90%~95%RH for 500 hours without applying voltage, and then placed at 20℃ for 16 hours, the product should meet the following requirements: Rate of change of capacitance: +40% -20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ 300% of the initial specification value

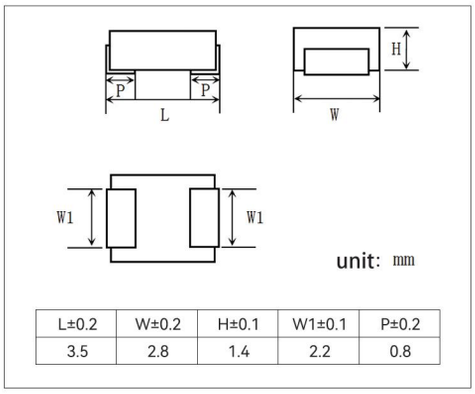
■ logo



Voltage marking

电压	10	16	20	25	35	50	63	75	100
标识	A	C	D	E	V	H	J	K	L

■ External dimensions



L±0.2	W±0.2	H±0.1	W1±0.1	P±0.2
3.5	2.8	1.4	2.2	0.8

■ Temperature coefficient of rated ripple current

Temperature	-55℃ < T≦45℃	45℃ < T≦85℃	85℃ < T≦105℃
Rated 105℃, coefficient	1.0	0.7	0.25

Note: The capacitor surface temperature should not exceed the product's maximum operating temperature.

■ Rated ripple current frequency correction factor

Frequency (Hz)	120Hz	1kHz	10kHz	100~300kHz
Correction Factor	0.10	0.45	0.50	1.00

TPB14

■ List of Standard Products

Rated voltage (V)	Rated temperature (° C)	Category Voltage (V)	Category Temperature (° C)	Nominal Capacity (μF)	Product dimensions (mm)			L.C. (μA, 5min)	Tan δ 120Hz	ESR (mΩ 100KHz)	Rated ripple current (mA/r.m.s) 45℃ 100KHz
					L	W	H				
16	105℃	16	105℃	10	3.5	2.8	1.4	16	0.10	100	800
	105℃	16	105℃	15	3.5	2.8	1.4	24	0.10	90	1000
20	105℃	20	105℃	5.6	3.5	2.8	1.4	11.2	0.10	100	800
	105℃	20	105℃	12	3.5	2.8	1.4	24	0.10	100	800
25	105℃	25	105℃	5.6	3.5	2.8	1.4	14	0.10	100	800
	105℃	25	105℃	10	3.5	2.8	1.4	25	0.10	100	800
35	105℃	35	105℃	3.9	3.5	2.8	1.4	13.7	0.10	200	750
50	105℃	50	105℃	2.2	3.5	2.8	1.4	11	0.10	200	750
63	105℃	63	105℃	1.5	3.5	2.8	1.4	10	0.10	200	750
75	105℃	75	105℃	1	3.5	2.8	1.4	7.5	0.10	300	600

TQB19

◆Miniaturized (L3.5×W2.8×H1.9)

◆Bottom-side terminals, low ESL

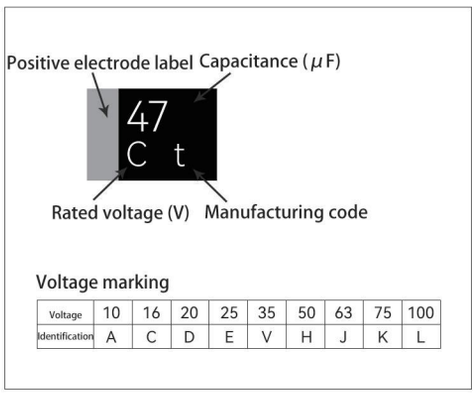
◆Low ESR, high ripple current

◆RoHS compliant (2011/65/EU)

■ Main technical parameters

project	characteristic
Operating temperature range	－55~+105℃
Rated operating voltage	16~100V
Capacity range	1.5~56μF 120Hz/20℃
Capacity tolerance	±20%（120Hz/20℃）
Loss tangent	Values below the standard product list: 120Hz/20℃
Leakage current	Values below the standard product list: Charged for 5 minutes at rated voltage, 20℃
Equivalent series resistance (ESR)	Values below the standard product list: 100kHz/20℃
Surge voltage (V)	1.15 times the rated voltage
Durability	Under rated temperature, after applying the rated operating voltage for 2000 hours and being placed at 20° C for 16 hours, the product should meet the following requirements: Rate of change of capacitance: ±20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ Initial specification value
High temperature and humidity	After being placed at 60℃ and 90%~95%RH for 500 hours without applying voltage, and then placed at 20℃ for 16 hours, the product should meet the following requirements: Rate of change of capacitance: +40% -20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ 300% of the initial specification value

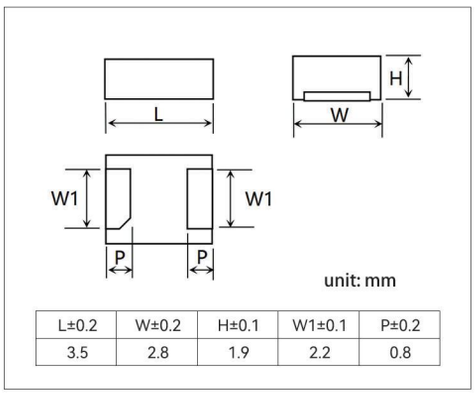
■ logo



Voltage marking

Voltage	10	16	20	25	35	50	63	75	100
Identification	A	C	D	E	V	H	J	K	L

■ External dimensions



L±0.2	W±0.2	H±0.1	W1±0.1	P±0.2
3.5	2.8	1.9	2.2	0.8

■ Temperature coefficient of rated ripple current

Temperature	-55℃ < T≦45℃	45℃ < T≦85℃	85℃ < T≦105℃
Rated 105℃, coefficient	1.0	0.7	0.25

Note: The capacitor surface temperature should not exceed the product's maximum operating temperature.

■ Rated ripple current frequency correction factor

Frequency (Hz)	120Hz	1kHz	10kHz	100~300kHz
Correction Factor	0.10	0.45	0.50	1.00

TQB19

■ List of Standard Products

Rated voltage (V)	Rated temperature (° C)	Category Voltage (V)	Category Temperature (° C)	Nominal Capacity (μF)	Product dimensions (mm)			L.C. (μA, 5min)	Tan δ 120Hz	ESR (mΩ 100KHz)	Rated ripple current (mA/r.m.s) 45℃ 100KHz
					L	W	H				
16	105℃	16	105℃	47	3.5	2.8	1.9	75.2	0.10	70	1100
20	105℃	20	105℃	27	3.5	2.8	1.9	54	0.10	90	950
25	105℃	25	105℃	27	3.5	2.8	1.9	67.5	0.10	100	900
35	105℃	35	105℃	15	3.5	2.8	1.9	52.5	0.10	150	800
50	105℃	50	105℃	3.9	3.5	2.8	1.9	19.5	0.10	200	750
63	105℃	63	105℃	2.7	3.5	2.8	1.9	17	0.10	200	750
75	105℃	75	105℃	1.8	3.5	2.8	1.9	13.5	0.10	300	600
100	105℃	100	105℃	1.5	3.5	2.8	1.9	15	0.10	300	600

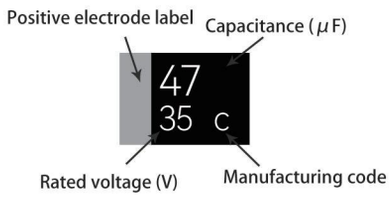
TQD15

◆Slim profile (L7.3×W4.3×H1.5)
◆Bottom-side terminals, low ESL
◆Low ESR, high ripple current
◆RoHS compliant (2011/65/EU)

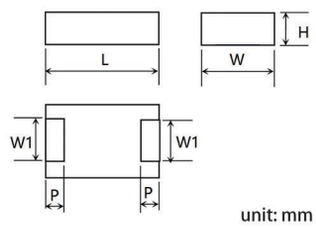
■ Main technical parameters

project	characteristic
Operating temperature range	－55~+105℃
Rated operating voltage	35~63V
Capacity range	10~47μF 120Hz/20℃
Capacity tolerance	±20%（120Hz/20℃）
Loss tangent	Values below the standard product list: 120Hz/20℃
Leakage current	Values below the standard product list: Charged for 5 minutes at rated voltage, 20℃
Equivalent series resistance (ESR)	Values below the standard product list: 100kHz/20℃
Surge voltage (V)	1.15 times the rated voltage
Durability	Under rated temperature, after applying the rated operating voltage for 2000 hours and being placed at 20° C for 16 hours, the product should meet the following requirements: Rate of change of capacitance: ±20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ Initial specification value
High temperature and humidity	After being placed at 60℃ and 90%~95%RH for 500 hours without applying voltage, and then placed at 20℃ for 16 hours, the product should meet the following requirements: Rate of change of capacitance: +40% -20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ 300% of the initial specification value

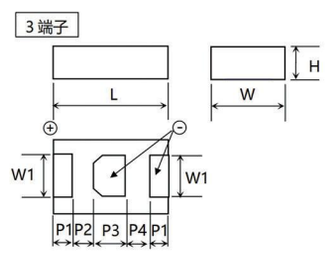
■ logo



■ External dimensions



L±0.2	W±0.2	H±0.1	W1±0.1	P±0.2
7.3	4.3	1.5	2.4	1.3



L±0.3	W±0.2	H±0.1	W1±0.1	P1±0.2	P2±0.2	P3±0.2	P4±0.2
7.3	4.3	1.5	2.4	1.3	1.6	2.0	1.6

■ Temperature coefficient of rated ripple current

Temperature	-55℃ < T≦45℃	45℃ < T≦85℃	85℃ < T≦105℃
Rated 105℃, coefficient	1.0	0.7	0.25

Note: The capacitor surface temperature should not exceed the product's maximum operating temperature.

■ Rated ripple current frequency correction factor

Frequency (Hz)	120Hz	1kHz	10kHz	100~300kHz
Correction Factor	0.10	0.45	0.50	1.00

■ List of Standard Products

Rated voltage (V)	Rated temperature (° C)	Category Voltage (V)	Category Temperature (° C)	Nominal Capacity (μF)	Product dimensions (mm) L	W	H	L.C. (μA, 5min)	Tan δ 120Hz	ESR (mΩ 100KHz)	Rated ripple current (mA/r.m.s) 45℃ 100KHz
35	105℃	35	105℃	47	7.3	4.3	1.5	164.5	0.10	100	1400
	105℃	35	105℃	47	7.3	4.3	1.5	164.5	0.10	120	1200
63	105℃	63	105℃	10	7.3	4.3	1.5	63	0.10	100	1400

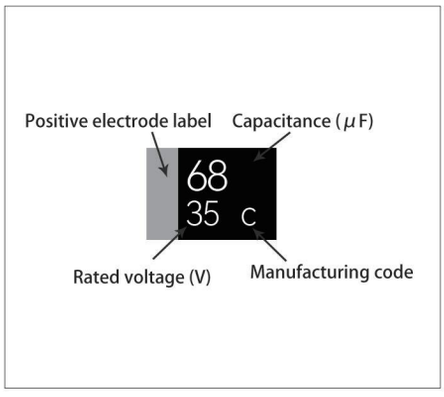
TQD19

- ◆ Ultra-thin design (L7.3×W4.3×H1.9)
- ◆ Bottom-mounted terminals, low ESL
- ◆ Low ESR, high ripple current
- ◆ RoHS compliant (2011/65/EU)

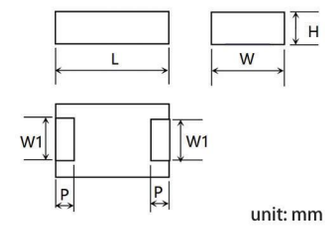
■ Main technical parameters

project	characteristic
Operating temperature range	－55~+105℃
Rated operating voltage	16~35V
Capacity range	33~220μF 120Hz/20℃
Capacity tolerance	±20%（120Hz/20℃）
Loss tangent	Values below the standard product list: 120Hz/20℃
Leakage current	Values below the standard product list: Charged for 5 minutes at rated voltage, 20℃
Equivalent series resistance (ESR)	Values below the standard product list: 100kHz/20℃
Surge voltage (V)	1.15 times the rated voltage
Durability	Under rated temperature, after applying the rated operating voltage for 2000 hours and being placed at 20° C for 16 hours, the product should meet the following requirements: Rate of change of capacitance: ±20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ Initial specification value
High temperature and humidity	After being placed at 60℃ and 90%~95%RH for 500 hours without applying voltage, and then placed at 20℃ for 16 hours, the product should meet the following requirements: Rate of change of capacitance: +40% -20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ 300% of the initial specification value

■ logo

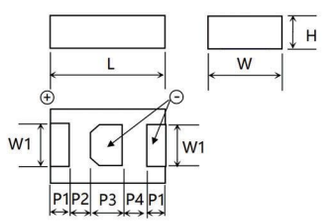


■ External dimensions



unit: mm

L±0.2	W±0.2	H±0.1	W1±0.1	P±0.2
7.3	4.3	1.9	2.4	1.3



L±0.3	W±0.2	H±0.1	W1±0.1	P1±0.2	P2±0.2	P3±0.2	P4±0.2
7.3	4.3	1.9	2.4	1.3	1.6	2.0	1.6

■ Temperature coefficient of rated ripple current

Temperature	-55℃ < T≦45℃	45℃ < T≦85℃	85℃ < T≦105℃
Rated 105℃, coefficient	1.0	0.7	0.25

Note: The capacitor surface temperature should not exceed the product's maximum operating temperature.

■ Rated ripple current frequency correction factor

Frequency (Hz)	120Hz	1kHz	10kHz	100~300kHz
Correction Factor	0.10	0.45	0.50	1.00

TQD19

■ List of Standard Products

Rated voltage (V)	Rated temperature (° C)	Category Voltage (V)	Category Temperature (° C)	Nominal Capacity (μF)	Product dimensions (mm)			L.C. (μA, 5min)	Tan δ 120Hz	ESR (mΩ 100KHz)	Rated ripple current (mA/r.m.s) 45℃ 100KHz
					L	W	H				
16	105℃	16	105℃	100	7.3	4.3	1.9	160	0.10	50	2200
	105℃	16	105℃	220	7.3	4.3	1.9	352	0.10	50	2200
25	105℃	25	105℃	33	7.3	4.3	1.9	82.5	0.10	60	1900
	105℃	25	105℃	100	7.3	4.3	1.9	250	0.10	60	1900
35	105℃	35	105℃	68	7.3	4.3	1.9	238	0.10	100	1400
	105℃	35	105℃	68	7.3	4.3	1.9	238	0.10	120	1200

TQD28

◆Slim profile (L7.3×W4.3×H2.8)

◆Bottom-side terminals, low ESL

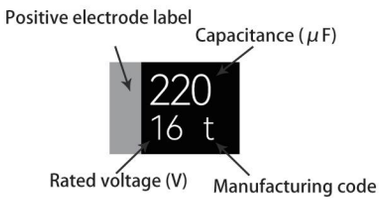
◆Low ESR, high ripple current

◆RoHS compliant (2011/65/EU)

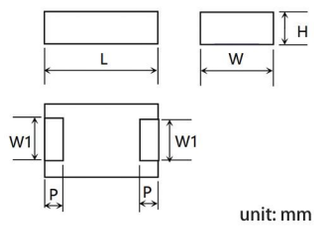
■ Main technical parameters

project	characteristic
Operating temperature range	－55~+105℃
Rated operating voltage	16~100V
Capacity range	4.7~220μF 120Hz/20℃
Capacity tolerance	±20%（120Hz/20℃）
Loss tangent	Values below the standard product list: 120Hz/20℃
Leakage current	Values below the standard product list: Charging for 5 minutes at rated voltage, 20℃
Equivalent series resistance (ESR)	Values below the standard product list: 100kHz/20℃
Surge voltage (V)	1.15 times the rated voltage
Durability	Under rated temperature, after applying the rated operating voltage for 2000 hours and being placed at 20° C for 16 hours, the product should meet the following requirements: Rate of change of capacitance: ±20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ Initial specification value
High temperature and humidity	After being placed at 60℃ and 90%~95%RH for 500 hours without applying voltage, and then placed at 20℃ for 16 hours, the product should meet the following requirements: Rate of change of capacitance: +40% -20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ 300% of the initial specification value

■ logo

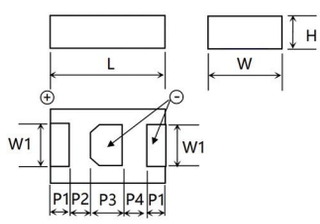


■ External dimensions



unit: mm

L±0.3	W±0.2	H±0.2	W1±0.1	P±0.2
7.3	4.3	2.8	2.4	1.3



L±0.3	W±0.2	H±0.2	W1±0.1	P1±0.2	P2±0.2	P3±0.2	P4±0.2
7.3	4.3	2.8	2.4	1.3	1.6	2.0	1.6

■ Temperature coefficient of rated ripple current

Temperature	-55℃ < T≦45℃	45℃ < T≦85℃	85℃ < T≦105℃
Rated 105℃, coefficient	1.0	0.7	0.25

Note: The capacitor surface temperature should not exceed the product's maximum operating temperature.

■ Rated ripple current frequency correction factor

Frequency (Hz)	120Hz	1kHz	10kHz	100~300kHz
Correction Factor	0.10	0.45	0.50	1.00

TQD28

■ List of Standard Products

Rated voltage (V)	Rated temperature (° C)	Category Voltage (V)	Category Temperature (° C)	Nominal Capacity (μF)	Product dimensions (mm)			L.C. (μA, 5min)	Tan δ 120Hz	ESR (mΩ 100KHz)	Rated ripple current (mA/r.m.s) 45℃ 100KHz
					L	W	H				
16	105℃	16	105℃	150	7.3	4.3	2.8	240	0.10	50	2300
	105℃	16	105℃	220	7.3	4.3	2.8	352	0.10	50	2300
20	105℃	20	105℃	100	7.3	4.3	2.8	200	0.10	55	2200
25	105℃	25	105℃	68	7.3	4.3	2.8	170	0.10	60	2000
	105℃	25	105℃	100	7.3	4.3	2.8	250	0.10	60	2000
100	105℃	100	105℃	4.7	7.3	4.3	2.8	47	0.10	100	1900

TQD42

◆Slim profile (L7.3×W4.3×H4.2)

◆Bottom terminals, low ESL

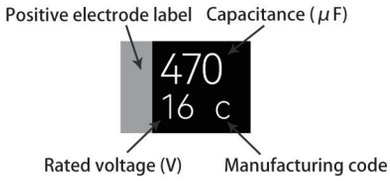
◆High voltage withstand (100V max.)

◆RoHS compliant (2011/65/EU)

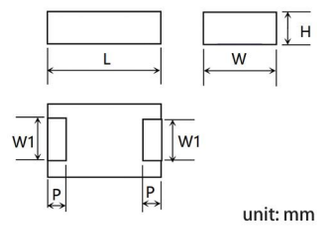
■ Main technical parameters

project	characteristic
Operating temperature range	－55~+105℃
Rated operating voltage	16~100V
Capacity range	12~470μF 120Hz/20℃
Capacity tolerance	±20%（120Hz/20℃）
Loss tangent	Values below the standard product list: 120Hz/20℃
Leakage current	Values below the standard product list: Charged for 5 minutes at rated voltage, 20℃
Equivalent series resistance (ESR)	Values below the standard product list: 100kHz/20℃
Surge voltage (V)	1.15 times the rated voltage
Durability	Under rated temperature, after applying the rated operating voltage for 2000 hours and being placed at 20° C for 16 hours, the product should meet the following requirements: Rate of change of capacitance: ±20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ Initial specification value
High temperature and humidity	After being placed at 60℃ and 90%~95%RH for 500 hours without applying voltage, and then placed at 20℃ for 16 hours, the product should meet the following requirements: Rate of change of capacitance: +40% -20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ 300% of the initial specification value

■ logo

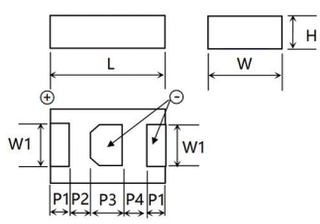


■ External dimensions



unit: mm

L±0.3	W±0.2	H±0.2	W1±0.1	P±0.2
7.3	4.3	4.2	2.4	1.3



L±0.3	W±0.2	H±0.2	W1±0.1	P1±0.2	P2±0.2	P3±0.2	P4±0.2
7.3	4.3	4.2	2.4	1.3	1.6	2.0	1.6

■ Temperature coefficient of rated ripple current

Temperature	-55℃ < T≦45℃	45℃ < T≦85℃	85℃ < T≦105℃
Rated 105℃, coefficient	1.0	0.7	0.25

Note: The capacitor surface temperature should not exceed the product's maximum operating temperature.

■ Rated ripple current frequency correction factor

Frequency (Hz)	120Hz	1kHz	10kHz	100~300kHz
Correction Factor	0.10	0.45	0.50	1.00

TQD42

■ List of Standard Products

Rated voltage (V)	Rated temperature (° C)	Category Voltage (V)	Category Temperature (° C)	Nominal Capacity (μF)	Product dimensions (mm)			L.C. (μA, 5min)	Tan δ 120Hz	ESR (mΩ 100KHz)	Rated ripple current (mA/r.m.s) 45℃ 100KHz
					L	W	H				
16	105℃	16	105℃	470	7.3	4.3	4.2	752	0.10	70	2400
35	105℃	35	105℃	100	7.3	4.3	4.2	350	0.10	100	2000
50	105℃	50	105℃	47	7.3	4.3	4.2	235	0.10	100	2000
	105℃	50	105℃	68	7.3	4.3	4.2	340	0.10	100	2000
63	105℃	63	105℃	22	7.3	4.3	4.2	138.6	0.10	100	2000
	105℃	63	105℃	33	7.3	4.3	4.2	208	0.10	100	2000
100	105℃	100	105℃	12	7.3	4.3	4.2	12	0.10	100	2000

TQW19

◆Slim profile (L7.3×W6.0×H1.9)

◆Bottom-side terminals, low ESL

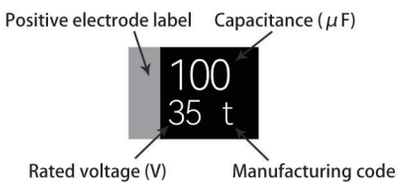
◆Low ESR, high ripple current

◆RoHS compliant (2011/65/EU)

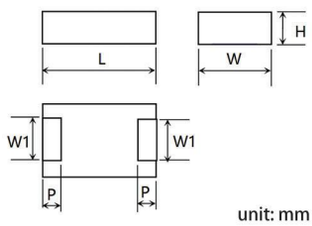
■ Main technical parameters

project	characteristic
Operating temperature range	－55~+105℃
Rated operating voltage	35V
Capacity range	100μF 120Hz/20℃
Capacity tolerance	±20%（120Hz/20℃）
Loss tangent	Values below the standard product list: 120Hz/20℃
Leakage current	Values below the standard product list: Charged for 5 minutes at rated voltage, 20℃
Equivalent series resistance (ESR)	Values below the standard product list: 100kHz/20℃
Surge voltage (V)	1.15 times the rated voltage
Durability	Under rated temperature, after applying the rated operating voltage for 2000 hours and being placed at 20° C for 16 hours, the product should meet the following requirements: Rate of change of capacitance: ±20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ Initial specification value
High temperature and humidity	After being placed at 60℃ and 90%~95%RH for 500 hours without applying voltage, and then placed at 20℃ for 16 hours, the product should meet the following requirements: Rate of change of capacitance: +40% -20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ 300% of the initial specification value

■ logo

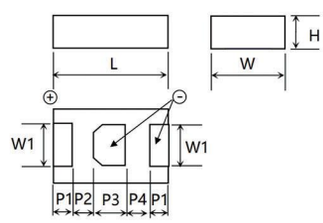


■ External dimensions



unit: mm

L±0.3	W±0.3	H±0.1	W1±0.1	P±0.2
7.3	6.0	1.9	4.1	1.3



L±0.3	W±0.3	H±0.1	W1±0.1	P1±0.2	P2±0.2	P3±0.2	P4±0.2
7.3	6.0	1.9	4.1	1.3	1.6	2.0	1.6

■ Temperature coefficient of rated ripple current

Temperature	-55℃ < T≦45℃	45℃ < T≦85℃	85℃ < T≦105℃
Rated 105℃, coefficient	1.0	0.7	0.25

Note: The capacitor surface temperature should not exceed the product's maximum operating temperature.

■ Temperature coefficient of rated ripple current

Temperature	120Hz	1kHz	10kHz	100~300kHz
Rated 105℃, coefficient	0.10	0.45	0.50	1.00

■ List of Standard Products

Rated voltage (V)	Rated temperature (° C)	Category Voltage (V)	Category Temperature (° C)	Nominal Capacity (μF)	Product dimensions (mm) L	W	H	L.C. (μA, 5min)	Tan δ 120Hz	ESR (mΩ 100KHz)	Rated ripple current (mA/r.m.s) 45℃ 100KHz
35	105℃	35	105℃	100	7.3	6.0	1.9	164.5	0.10	100	2000

TQW42

◆Slim profile (L7.3×W6.0×H1.9)

◆Bottom-side terminals, low ESL

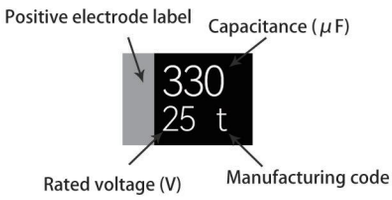
◆Low ESR, high ripple current

◆RoHS compliant (2011/65/EU)

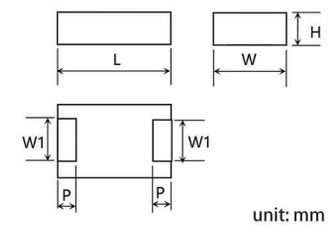
■ Main technical parameters

project	characteristic
Operating temperature range	－55~+105℃
Rated operating voltage	25~35V
Capacity range	100~330μF 120Hz/20℃
Capacity tolerance	±20%（120Hz/20℃）
Loss tangent	Values below the standard product list: 120Hz/20℃
Leakage current	Values below the standard product list: Charged for 5 minutes at rated voltage, 20℃
Equivalent series resistance (ESR)	Values below the standard product list: 100kHz/20℃
Surge voltage (V)	1.15 times the rated voltage
Durability	Under rated temperature, after applying the rated operating voltage for 2000 hours and being placed at 20° C for 16 hours, the product should meet the following requirements: Rate of change of capacitance: ±20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ Initial specification value
高温高湿	After being placed at 60℃ and 90%~95%RH for 500 hours without applying voltage, and then placed at 20℃ for 16 hours, the product should meet the following requirements: Rate of change of capacitance: +40% -20% of the initial value Loss tangent: ≦ 150% of the initial specification value Leakage current: ≦ 300% of the initial specification value

■ logo

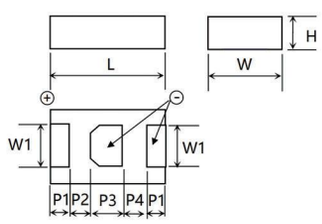


■ External dimensions



unit: mm

L±0.3	W±0.3	H±0.2	W1±0.1	P±0.2
7.3	6.0	4.2	4.1	1.3



L±0.3	W±0.3	H±0.2	W1±0.1	P1±0.2	P2±0.2	P3±0.2	P4±0.2
7.3	6.0	4.2	4.1	1.3	1.6	2.0	1.6

■ Temperature coefficient of rated ripple current

Temperature	-55℃ < T≦45℃	45℃ < T≦85℃	85℃ < T≦105℃
Rated 105℃, coefficient	1.0	0.7	0.25

Note: The capacitor surface temperature should not exceed the product's maximum operating temperature.

■ Temperature coefficient of rated ripple current

Temperature	120Hz	1kHz	10kHz	100~300kHz
Rated 105℃, coefficient	0.10	0.45	0.50	1.00

■ List of Standard Products

Rated voltage (V)	Rated temperature (° C)	Category Voltage (V)	Category Temperature (° C)	Nominal Capacity (μF)	Product dimensions (mm) L	W	H	L.C. (μA, 5min)	Tan δ 120Hz	ESR (mΩ 100KHz)	Rated ripple current (mA/r.m.s) 45℃ 100KHz
25	105℃	25	105℃	330	7.3	6.0	4.2	825	0.10	60	2500
35	105℃	35	105℃	100	7.3	6.0	4.2	350	0.10	100	2050
	105℃	35	105℃	150	7.3	6.0	4.2	525	0.10	100	2050
	105℃	35	105℃	220	7.3	6.0	4.2	770	0.10	100	2050