PH series

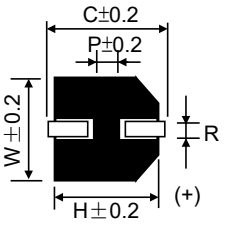
- Super low ESR,Long Life capability
- Rated voltage :4.0~50V.
- Endurance:20,000hours at 105℃
- Applications:DC/DC Converter,Votage Regulators,Decouping Applications for Computer Motherboards,etc.
- ROHS compliant
- Halogen Free compliant

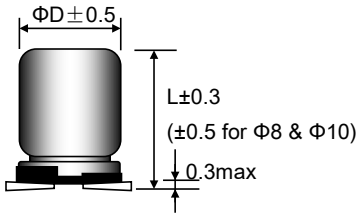
SPECIFICATIONS

Items	Conditions	Characteristics	
Category Temperature Range	—	-55 to +105℃	
Rated Voltage Range	—	4.0~50V	
Capacitance Tolerance	at 20℃,120HZ	±20%(M)	
Surge Voltage	at 105℃	Rated voltage ×1.15V	
Leakage Current	at 20℃ after 2 minutes	I≦0.2CV or 300(μA) Whichever is greater measured,after 2minutes application of rated working voltage at +20℃. Please see the attached characteristics list	
Dissipation Factor (tan δ)	at 20℃,120Hz	Please see the attached characteristics list	
Low Temperature Characteristics (Max. Impedance Ratio)	at -55℃,100kHz	Z(-55℃)/Z(+20℃)	≦ 1.25
	at -25℃,100kHz	Z(-25℃)/Z(+20℃)	≦ 1.15
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃after the rated voltage is applied for 20,000 hours at 105℃.	Appearance	No significant damage.
		Capacitance change	≦±20% of the initial value.
		DF(tanδ)	≦150% of the initial specified value.
		ESR	≦150% of the initial specified value.
		Leakage current	≦The initial specified value.
Damp Heag (Steady State)	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjecting them to subjecting them to store at 60℃, 90 to 95% RH for 1,000 hours ,without DC applied.	Appearance	No significant damage.
		Capacitance change	≦±20% of the initial value.
		DF(tanδ)	≦150% of the initial specified value.
		ESR	≦150% of the initial specified value.
		Leakage current	≦The initial specified value.
Surge Voltage	The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltages specified at 105℃ for 30 seconds through aprotective resistor (R=1kΩ) and discharge for 5 minutes 30seconds	Appearance	No significant damage.
		Capacitance change	≦±20% of the initial value.
		DF(tanδ)	≦150% of the initial specified value.
		ESR	≦150% of the initial specified value.
		Leakage current	≦The initial specified value.

※ Note:If any doubt arises,measure the leakage current after following voltage treatment.
Voltage treatment :DC rated voltage are applied to the capacitors for 120 minutes at 105℃.

MARKING AND DIMENSIONS





(Unit:mm)

Size Code	ΦD	L	W	H	C	R	P
6.3x5.8	6.3	5.8	6.6	6.6	7.3	0.6~0.9	2.1
6.3x7	6.3	7.0	6.6	6.6	7.3	0.6~0.9	2.1
6.3x9.5	6.3	9.5	6.6	6.6	7.3	0.6~0.9	2.1
8x6.7	8.0	6.7	8.3	8.3	9.0	0.8~1.1	3.2
8x9.5	8.0	9.5	8.3	8.3	9.0	0.8~1.1	3.2
8x12	8.0	12.0	8.3	8.3	9.0	0.8~1.1	3.2
10x10.5	10.0	10.5	10.3	10.3	11.0	0.8~1.1	4.6
10x12.5	10.0	12.5	10.3	10.3	11.0	0.8~1.1	4.6

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STANDARD RATINGS

Rated Voltage (S.V.)	Cap (μF)	Size DxL	Leakage current (μA) max. ※2	ESR (mΩ) max. 100k to 300kHz / 20℃	Rated Ripple Current (mA rms) 100kHz / 105℃	D.F. (tanδ) max. 120Hz / 20℃
4 (4.6)	220	6.3x5.8	300	20	2,800	0.12
	560	6.3x9.5	448	20	3,500	0.12
	560	8x6.7	448	18	3,700	0.12
	820	8x9.5	656	15	3,500	0.12
	1200	8x12	960	15	4,450	0.12
	1500	10x10.5	1200	13	4,200	0.12
	2200	10x12.5	1760	13	5,400	0.12
6.3 (7.2)	100	6.3x5.8	300	35	2,400	0.12
	220	6.3x5.8	300	22	2,600	0.12
	470	6.3x9.5	592	22	3,200	0.12
	560	6.3x9.5	705	22	3,200	0.12
	820	8x9.5	1033	20	3,850	0.12
	1000	8x12	1260	20	4,250	0.12
	1200	10x10.5	1512	18	4,350	0.12
	1800	10x12.5	2268	18	5,200	0.12
10 (11.5)	68	6.3x5.8	300	30	2,400	0.12
	100	6.3x5.8	300	30	2,400	0.12
	220	6.3x7	440	30	2,500	0.12
	330	6.3x9.5	660	30	3,150	0.12
	560	8x9.5	1120	25	3,850	0.12
	680	8x12	1360	25	4,150	0.12
	820	10x10.5	1640	20	4,250	0.12
	1000	10x10.5	2000	20	4,250	0.12
	1200	10x12.5	2400	20	5,100	0.12
16 (18.4)	100	6.3x5.8	320	30	2,200	0.12
	220	6.3x9.5	704	30	3,050	0.12
	330	8x9.5	1056	20	3,450	0.12
	470	8x12	1504	22	4,050	0.12
	680	10x10.5	2176	20	4,150	0.12
	820	10x12.5	2624	20	5,100	0.12
25 (28.8)	47	6.3x5.8	300	40	1,500	0.12
	100	6.3x9.5	500	40	2,800	0.12
	180	8x9.5	900	30	3,250	0.12
	220	8x12	1100	30	3,900	0.12
	330	10x10.5	1650	20	4,100	0.12
	470	10x12.5	2350	25	4,500	0.12
35 (40.3)	22	6.3x5.8	300	70	1,450	0.12
	68	6.3x9.5	476	60	1,500	0.12
	120	8x9.5	840	50	1,800	0.12
	150	8x12	1050	50	2,850	0.12
	220	10x10.5	1540	40	2,950	0.12
	270	10x12.5	1890	40	3,200	0.12
50 (57.5)	10	6.3x5.8	300	60	1,400	0.12
	33	6.3x9.5	330	30	1,700	0.12
	47	8x9.5	470	30	2,000	0.12
	68	8x12	680	28	2,200	0.12
	100	10x10.5	1000	30	2,300	0.12
	100	10x12.5	1000	28	2,650	0.12

FREDUENCY COEFFICIENT FOR RIPPLE CURRENT

Frequency	120Hz ≦ f < 1kHz	1kHz ≦ f < 10kHz	10kHz ≦ f < 100kHz	100kHz ≦ f < 500kHz
Coefficient	0.05	0.3	0.7	1.0