

KH Series HIGH RELIABILITY

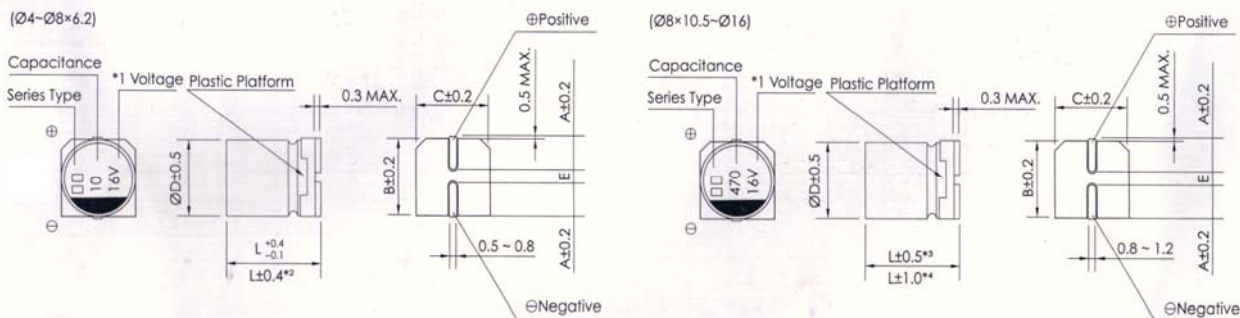
- High temperature range up to +125 °C
- Suitable for automotive equipment
- Load life of 1000~5000 hours
- Comply with the RoHS directive



■ SPECIFICATIONS

Item	Characteristics											
Operating Temperature Range	-40 ~ +125 °C											
Voltage Range	10 ~ 450 V											
Capacitance Range	3.3 ~ 2200 μ F											
Capacitance Tolerance	- 20% ~ + 20% at 20 °C, 120Hz											
Leakage Current	Leakage current(10V~100V) ≤ 0.03CV or 4uA, whichever is greater (after 2 minutes application of rated voltage) Leakage current(160V~450V) ≤ 0.04CV+100μA, whichever is greater (after 2 minute application of rated voltage)											
Dissipation Factor(tanδ)	Measurement frequency:120Hz, Temperature:20°C											
	Rated Voltage (V)	tan δ(max.)	Φ4~Φ10	10	16	25	35	50	63	100	160~250	400,450
			Φ12.5~Φ16	0.24	0.20	0.16	0.14	0.14	0.18	0.18	-	-
Φ12.5~Φ16	0.22	0.18	0.16	0.14	0.12	0.14	0.10	0.20	0.20			
Stability at Low Temperature	Measurement frequency:120Hz											
	Rated Voltage (V)			10	16	25	35~100	160~250	400,450			
	Impedance Ratio ZT/Z20(max.)	Φ4~Φ10	Z(-25 °C) / Z(+20 °C)	5	3	2	2	-	-			
			Z(-40 °C) / Z(+20 °C)	10	8	6	4	-	-			
		Φ12.5~Φ16	Z(-25 °C) / Z(+20 °C)	4	3	2	2	3	6			
Z(-40 °C) / Z(+20 °C)			8	6	4	3	6	10				
Load Life	After 5000 hrs.application of the rated voltage for Φ12.5×16(10~100V),and 2000hrs.forΦ8×10.5Φ10(10~100V),and 1000 hrs .for Φ8×6.2~Φ6.3,as well as 2000 hrs.application of rated voltage for Φ12.5×16(160~450V) at 125 °C, they meet the characteristics listed below.											
	Capacitance Change	Within ±30% of initial value										
	Dissipation Factor	300% or less of initial specified value										
	Leakage Current	initial specified value or less										
Shelf Life	After leaving capacitors under no load at 125 °C for 1000 hours,they meet the specified value for load life characteristics listed above.											
Resistance to Soldering Heat	After reflow soldering and restored at room temperature, they meet the characteristics listed below.											
	Capacitance Change	Within ±10% of initial value										
	Dissipation Factor	initial specified value or less										
	Leakage Current	initial specified value or less										
Marking	Black print on the case top.											

□ DRAWING (Unit: mm) 外形圖



*1. Voltage mark for 6.3V is [6V] 6.3V的產品標識為 [6V]
 *2. Applicable to Ø6.3×7.7 適用於Ø6.3×7.7
 *3. Applicable to Ø8×10.5-Ø10 適用於Ø8×10.5-Ø10
 *4. Applicable to Ø12.5-Ø16 適用於Ø12.5-Ø16

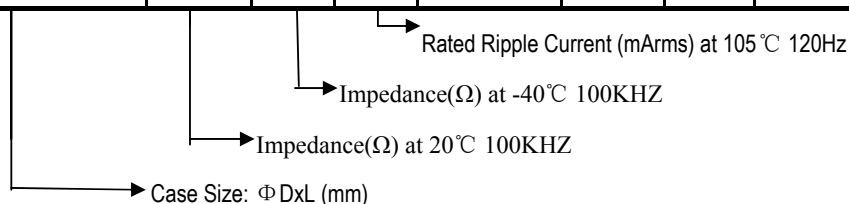
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● DIMENSIONS(Unit:mm)

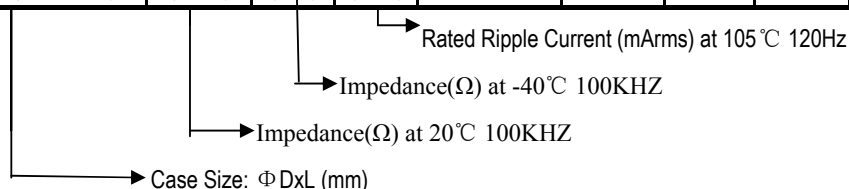
(ΦDxL)	4x5.4	5x5.4	6.3x5.4	6.3x7.7	8x6.2	8x10.5	10x10.5	10x13.5	12.5x13.5	12.5x16	16x16.5
A	1.8	2.1	2.4	2.4	3.3	2.9	3.2	3.2	4.7	4.7	5.5
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	13.0	13.0	17.0
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	13.0	13.0	17.0
E±0.2	1.0	1.3	2.2	2.2	3.1	3.1	4.4	4.4	4.4	4.4	6.7
L	5.4	5.4	5.4	7.7	6.2	10.5	10.5	13.5	13.5	16.0	16.5

■ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE

VV(Vdc)		10				16				25			
μF													
33	330									6.3x5.8	3.3	66	45
47	470					6.3x5.8	3.3	66	43	6.3x7.7 (8x6.2)	2.3	46	68
100	101	6.3x7.7 (8x6.2)	2.3	46	72	8x10.5	1	20	115	8x10.5	1.0	20	126
220	221	8x10.5	1.0	20	136	10x10.5	0.7	13.4	175	10x10.5	0.7	13.4	211
330	331	10x10.5	0.7	13.4	188	10x13.5	0.5	9.5	280	12.5x13.5 (10.5x13.5)	0.14 (0.5)	2.1 (9.5)	750 (270)
470	471	10x13.5	0.5	9.5	300	12.5x13.5	0.14	2.1	750	12.5x13.5	0.14	2.1	750
680	681					16x16.5 (12.5x13.5)	0.10 (0.14)	1.5 (2.1)	1000 (750)	16x16.5	0.10	1.5	1000
1000	102	12.5x16 (12.5x13.5)	0.11 (0.14)	1.5 (2.1)	900 (750)								
2200	222	16x16.5	0.10	1.5	1000								

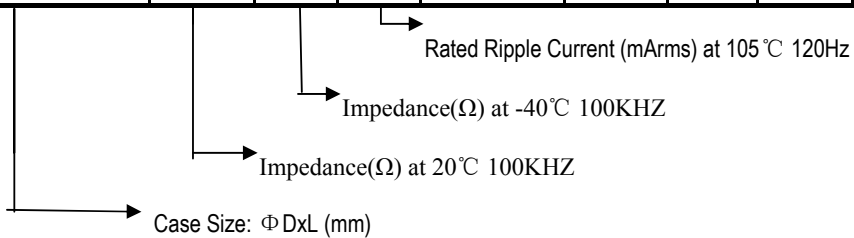


VV(Vdc)		35				50			
μF									
10	100	6.3x5.8	3.3	66	38	6.3x7.7 (6.3x5.8)	2.3 (3.3)	46 (66)	50 (38)
22	220	6.3x5.8	3.3	66	39	6.3x7.7 (8x6.2)	2.3 (2.3)	46 (46)	50 (50)
33	330	6.3x7.7 (8x6.2)	2.3 (2.3)	46 (46)	62 (62)	8x10.5	1.0	20	83
47	470	8x10.5	1.0	20	92	10x10.5	0.7	13.4	111
100	101	10x10.5	0.7	13.4	151	12.5x13.5	0.23	3.5	550
220	221	12.5x13.5 (10x13.5)	0.14 (0.5)	2.1 (9.5)	750 (260)	16x16.5 (12.5x13.5)	0.15 (0.23)	2.3 (3.5)	850 (550)
330	331	12.5x13.5	0.14	2.1	750	16x16.5 (12.5x16)	0.15 (0.18)	2.3 (2.7)	850 (700)
470	471	16x16.5 (12.5x16)	0.10 (0.11)	1.5 (1.5)	1000 (900)				

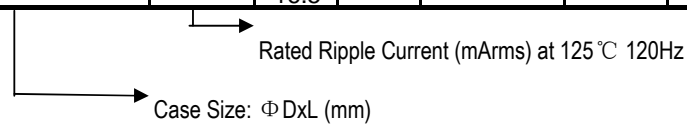


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VV(Vdc) μF		63				100			
		10	100	6.3×7.7 (8×6.2)	2.3	115 (115)	42 (42)	8×10.5	1.00
22	220	8×10.5	1.0	50	56	10×10.5	0.70	35	63
33	330	10×10.5	0.7	35	77	10×13.5	0.45	22.5	130
47	470	10×13.5	0.45	22.5	150	12.5×13.5	0.33	16.5	450
68	680					12.5×16	0.26	13	550
100	101	12.5×13.5	0.25	12.5	500	16×16.5	0.24	12	650
220	221	12.5×16	0.20	10	600				
330	331	16×16.5	0.18	9	820				



VV(Vdc) μF		160		200		250		400		450	
		3.3	3R3								
4.7	4R7							12.5×13.5	70	16×16.5	85
3.8	6R8							16×16.5	100		
10	100	12.5×13.5	100	12.5×13.5	100	12.5×16	110				
22	220	16×16.5	180	16×16.5	180						



□ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

Frequency		50HZ	120HZ	1KHZ	10KHZ~	100KHZ~
Coefficient	10~100μF	0.35	0.40	0.75	0.90	1.00
	220~470μF	0.35	0.50	0.85	0.94	1.00
	680~2200μF	0.40	0.60	0.85	0.95	1.00

Frequency		50HZ	120HZ	300HZ	1KHZ	10KHZ~	100KHZ~
Coefficient	160~450v	0.75	1.00	1.25	1.50	1.75	1.80