VHVL

Surface mount type

series

High Rated Voltage,
High Capacitance
Low ESR, High ripple current
Load life of 10,000h at 105°C

LEAD FREE

Halogen Less

RoHS COMPLIANT

• Specifications

Items	Characteristics	
Temperature range	-55 to +105°C	
Rated voltage range	16 to 50Vdc	
Capacitance range	10 to 1,500μF	
Capacitance tolerance	±20% [M] (at 20°C, 120Hz)	
Tangent of loss angle	Less than or equal to the value of Standard Ratings (at 20°C, 120Hz)	
Leakage current	Less than or equal to the value of Standard Ratings (at 20°C, after 2 minutes)	
ESR	Less than or equal to the value of Standard Ratings	
Characteristics of impedance	$Z_{+105°C}/Z_{+20°C} \leq 1.25$, $Z_{-55°C}/Z_{+20°C} \leq 1.25$ at 100kHz	
Endurance	105°C, 10,000 hrs at rated voltage	
	Appearance	No significant damage
	Capacitance change	Within±20% of the initial value
	Tangent of loss angle (tanδ)	≤150% of the initial specified value
	ESR(mΩ)	≤150% of the initial specified value
	Leakage current	≤The initial specified value
Damp Heat (Steady State)	60°C, 90 to 95% RH, 1,000 hrs, No-applied Voltage	
	Appearance	No significant damage
	Capacitance change	Within±20% of the initial value
	Tangent of loss angle (tanδ)	≤150% of the initial specified value
	ESR(mΩ)	≤150% of the initial specified value
	Leakage current	≤The initial specified value
Resistance to soldering heat	VPS (230°C, 75s)	
	Appearance	No significant damage
	Capacitance change	Within±10% of the initial value
	Tangent of loss angle (tanδ)	≤130% of the initial specified value
	ESR(mΩ)	≤130% of the initial specified value
	Leakage current	≤The initial specified value

*In case of some problems for measured values, measure after applying rated voltage for 120 minutes at 105°C

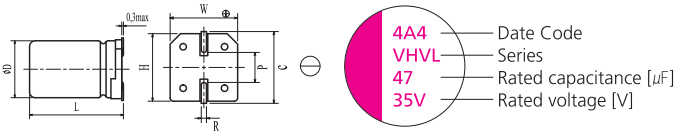
• Size List

(unit: mm)

μF \ RV (SV)	16 (18.4)	20 (23)	25 (28.7)	32 (36.8)	35 (40.2)	50 (57.5)
10						6.3×5.9
18						8×6.9
22				6.3×5.9	6.3×5.9	8×6.9
27			5×5.9			
39					8×6.9	8×11.9
47			6.3×5.9		8×6.9	8×11.9
56		5×5.9	6.3×5.9			8×11.9
68				8×6.9		10×12.6
82	5×5.9		8×6.9		8×11.9	
100			8×6.9			10×12.6
120		6.3×5.9		8×11.9	10×12.6	
150					10×12.6	
180	6.3×5.9	8×6.9	8×11.9		10×12.6	
220				10×12.6		
270	8×6.9					
330			10×12.6			
390		8×11.9				
560	8×11.9	10×12.6				
1000	10×12.6					
1500	10×12.6					

RV: Rated Voltage [V] SV: Surge Voltage [V] (at room temperature)

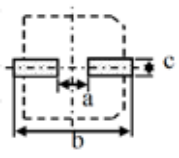
• Marking and Dimensions



(unit: mm)

Size	ØD±0.5	L +0.1 -0.4	W±0.2	H±0.2	C±0.2	R	P±0.2
5×5.9	5.0	5.9	5.3	5.3	6.0	0.6~0.8	1.4
6.3×5.9	6.3	5.9	6.6	6.6	7.3	0.6~0.8	2.1
8×6.9	8.0	6.9	8.3	8.3	9.0	0.6~0.8	3.2
8×11.9	8.0	11.9	8.3	8.3	9.0	0.8~1.1	3.2
10×12.6	10.0	12.6	10.3	10.3	11.0	0.8~1.1	4.6

• Recommended Land Pattern Dimension of PCB



(unit: mm)

Size	a	b	c
5×5.9	1.4	7.4	1.6
6.3×5.9	2.1	9.1	1.6
8×6.9	2.8	11.1	1.9
8×11.9	2.8	11.1	1.9
10×12.6	4.3	13.1	1.9

• Standard Ratings

Rated Voltage [Vdc]	Rated Capacitance [μF]	Size ØD x L [mm]	ESR (20°C, 100kHz) [mΩ] [max.]	Rated Ripple Current (105°C, 100kHz) [mArms]	Tangent of Loss Angel [max]	Leakage Current [μA, max]	Part Number
16	82	5 x 5.9	27	3000	0.12	262	16VHVL82MB6
	180	6.3 x 5.9	22	3300	0.12	576	16VHVL180MC6
	270	8 x 6.9	22	3300	0.12	864	16VHVL270MD7
	560	8 x 11.9	14	4950	0.12	1792	16VHVL560MD12
	1000	10 x 12.6	12	5400	0.12	3200	16VHVL1000ME12
	1500	10 x 12.6	12	5400	0.12	4800	16VHVL1500ME12
20	56	5 x 5.9	30	2800	0.12	224	20VHVL56MB6
	120	6.3 x 5.9	25	3200	0.12	480	20VHVL120MC6
	180	8 x 6.9	25	3200	0.12	720	20VHVL180MD7
	390	8 x 11.9	14	4950	0.12	1560	20VHVL390MD12
	560	10 x 12.6	12	5400	0.12	2240	20VHVL560ME12
25	27	5 x 5.9	40	2450	0.12	135	25VHVL27MB6
	47	6.3 x 5.9	30	2800	0.12	235	25VHVL47MC6
	56	6.3 x 5.9	30	2800	0.12	280	25VHVL56MC6
	82	8 x 6.9	28	3000	0.12	410	25VHVL82MD7
	100	8 x 6.9	25	3200	0.12	500	25VHVL100MD7
	180	8 x 11.9	16	4650	0.12	900	25VHVL180MD12
	330	10 x 12.6	14	5000	0.12	1650	25VHVL330ME12
32	22	6.3 x 5.9	35	2700	0.12	141	32VHVL22MC6
	68	8 x 6.9	25	3200	0.12	435	32VHVL68MD7
	120	8 x 11.9	20	4000	0.12	768	32VHVL120MD12
	220	10 x 12.6	18	4650	0.12	1408	32VHVL220ME12
35	22	6.3 x 5.9	35	2600	0.12	154	35VHVL22MC6
	39	8 x 6.9	30	2800	0.12	273	35VHVL39MD7
	47	8 x 6.9	30	2800	0.12	329	35VHVL47MD7
	82	8 x 11.9	20	4000	0.12	574	35VHVL82MD12
	120	10 x 12.6	18	4400	0.12	840	35VHVL120ME12
	150	10 x 12.6	18	4400	0.12	1050	35VHVL150ME12
	180	10 x 12.6	18	4400	0.12	1260	35VHVL180ME12
50	10	6.3 x 5.9	40	2500	0.12	100	50VHVL10MC6
	18	8 x 6.9	35	2700	0.12	180	50VHVL18MD7
	22	8 x 6.9	35	2700	0.12	220	50VHVL22MD7
	39	8 x 11.9	25	3800	0.12	390	50VHVL39MD12
	47	8 x 11.9	25	3800	0.12	470	50VHVL47MD12
	56	8 x 11.9	25	3800	0.12	560	50VHVL56MD12
	68	10 x 12.6	20	4300	0.12	680	50VHVL68ME12
	100	10 x 12.6	20	4300	0.12	1000	50VHVL100ME12