VHHL

Surface mount type

series

- High Reliability, High Voltage, High Temperature
- Low ESR, High ripple current
- Load life of 4,000h at 125°C
- Compliance with AEC-Q200

Halogen Less

RoHS compliant

lead-free

SPECIFICATIONS

Items	Characteristics	
Temperature range	-55 to +125°C	
Rated voltage range	16 to 80Vdc	
Capacitance range	22 to 1000μF	
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	$Z_{+125°C}/Z_{+20°C} \leq 1.25$, $Z_{-55°C}/Z_{+20°C} \leq 1.25$ at 100kHz	
Endurance	125°C, 4,000 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 125°C

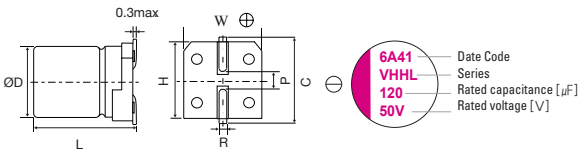
DIMENSIONS

(unit : mm)

μF \ RV(SV)	16 (20)	25 (31)	35 (43)	50 (63)	63 (79)	80 (100)
22					8 x 6.9	
39				8 x 6.9		8 x 11.9
56					8 x 11.9	
68			8 x 6.9			10 x 12.6
100		8 x 6.9			10 x 12.6	
120				8 x 11.9		
180				10 x 12.6		
220	8 x 6.9		8 x 11.9			
270		8 x 11.9				
330			10 x 12.6			
470		10 x 12.6				
560	8 x 11.9					
680						
1000	10 x 12.6					

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

MARKING AND DIMENSIONS

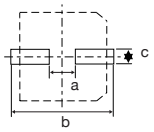


(unit : mm)

Size	ΦD±0.5	L	+0.1 -0.4	W±0.2	H±0.2	C±0.2	R	P±0.2
8 x 6.9	8	6.9		8.3	8.3	9	0.6 to 0.8	3.2
8 x 11.9	8	11.9		8.3	8.3	9	0.8 to 1.1	3.2
10 x 12.6	10	12.6		10.3	10.3	11	0.8 to 1.1	4.6

RECOMMENDED LAND PATTERN DIMENSION OF PCB

(unit : mm)



Size	a	b	c
8 x 6.9	2.8	11.1	1.9
8 x 11.9	2.8	11.1	1.9
10 x 12.6	4.3	13.1	1.9

Conductive Polymer Aluminum Capacitors

STANDARD RATINGS

Rated Voltage [Vdc]	Rated Capacitance [μF]	Size ΦD x L [mm]	ESR (20°C, 100kHz) [mΩ] [max.]	Rated Ripple Current (125°C, 100kHz) [mArms]	Tangent of Loss Angel [max.]	Leakage Current [μA, max.]	Part Number
16	220	8 x 6.9	30	1500	0.1	105	16VHHL220MD7
	560	8 x 11.9	16	3800	0.1	268	16VHHL560MD12
	1000	10 x 12.6	13	4300	0.1	480	16VHHL1000ME12
25	100	8 x 6.9	41	1200	0.1	75	25VHHL100MD7
	270	8 x 11.9	19	3300	0.1	202	25VHHL270MD12
	470	10 x 12.6	15	4100	0.1	352	25VHHL470ME12
35	68	8 x 6.9	44	1200	0.1	71	35VHHL68MD7
	220	8 x 11.9	21	3300	0.1	231	35VHHL220MD12
	330	10 x 12.6	16	3900	0.1	346	35VHHL330ME12
50	39	8 x 6.9	45	1300	0.1	58	50VHHL39MD7
	120	8 x 11.9	25	2900	0.1	180	50VHHL120MD12
	180	10 x 12.6	19	3500	0.1	270	50VHHL180ME12
63	22	8 x 6.9	48	1100	0.1	42	63VHHL22MD7
	56	8 x 11.9	27	2900	0.1	105	63VHHL56MD12
	100	10 x 12.6	24	3000	0.1	189	63VHHL100ME12
80	39	8 x 11.9	35	1600	0.1	93	80VHHL39MD12
	68	10 x 12.6	28	2100	0.1	163	80VHHL68ME12