VHH

Surface mount type

series

- High Reliability,High Voltage, High Capacitance
- Low ESR, High ripple current
- Load life of 3,000h at 125°C

Halogen Less

RoHS compliant

lead-free

SPECIFICATIONS

Items	Characteristics	
Temperature range	-55 to +125°C	
Rated voltage range	16 to 50Vdc	
Capacitance range	5.6 to 390μF	
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, 3,000 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

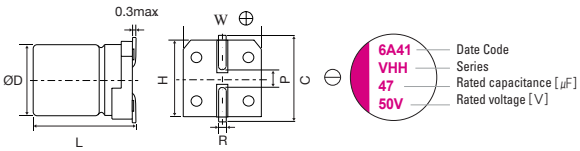
DIMENSIONS

(unit : mm)

μF \ RV(SV)	16 (18.4)	20 (23)	25 (28.7)	35 (40.2)	50 (57.5)
5.6					6.3 x 5.9
10				6.3 x 5.9	8 x 6.9
18				8 x 6.9	
22			6.3 x 5.9		
27					8 x 11.9
33		6.3 x 5.9			
39			8 x 6.9		
47	6.3 x 5.9				10 x 12.6
56		8 x 6.9		8 x 11.9	
82	8 x 6.9				
100				10 x 12.6	
120			8 x 11.9		
150		8 x 11.9			
180			10 x 12.6		
220	8 x 11.9				
270		10 x 12.6			
330			10 x 12.6		
390	10 x 12.6				

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

MARKING AND SIZE LIST

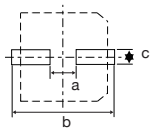


(unit : mm)

Size	ΦD±0.5	L	+0.1 -0.4	W±0.2	H±0.2	C±0.2	R	P±0.2
6.3 x 5.9	6.3	5.9		6.6	6.6	7.3	0.6 to 0.8	2.1
8 x 6.9	8.0	6.9		8.3	8.3	9.0	0.6 to 0.8	3.2
8 x 11.9	8.0	11.9		8.3	8.3	9.0	0.8 to 1.1	3.2
10 x 12.6	10.0	12.6		10.3	10.3	11.0	0.8 to 1.1	4.6

RECOMMENDED LAND PATTERN DIMENSION OF PCB

(unit : mm)



Size	a	b	c
6.3 x 5.9	2.1	9.1	1.6
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 (100kHz)[mArms]		Tangent of Loss Angel [max.]	Leakage Current [μA, max.]	Part Number
				-55 to +105°C	+105 to +125°C			
16	47	6.3 x 5.9	50	1620	512	0.12	150	16VHH47MC6
	82	8 x 6.9	40	2120	670	0.12	262	16VHH82MD7
	220	8 x 11.9	20	3640	1151	0.12	704	16VHH220MD12
	390	10 x 12.6	16	4720	1493	0.12	1248	16VHH390ME12
20	33	6.3 x 5.9	60	1450	459	0.12	132	20VHH33MC6
	56	8 x 6.9	50	1890	598	0.12	224	20VHH56MD7
	150	8 x 11.9	28	3320	1050	0.12	600	20VHH150MD12
	270	10 x 12.6	25	4320	1367	0.12	1080	20VHH270ME12
25	22	6.3 x 5.9	60	1500	474	0.12	110	25VHH22MC6
	39	8 x 6.9	50	1835	580	0.12	195	25VHH39MD7
	120	8 x 11.9	28	2980	943	0.12	600	25VHH120MD12
	180	10 x 12.6	25	3800	1202	0.12	900	25VHH180ME12
	330	10 x 12.6	25	3800	1210	0.12	1650	25VHH330ME12
35	10	6.3 x 5.9	70	1100	340	0.12	70	35VHH10MC6
	18	8 x 6.9	60	1300	400	0.12	126	35VHH18MD7
	56	8 x 11.9	30	2300	700	0.12	392	35VHH56MD12
	100	10 x 12.6	28	3650	1150	0.12	700	35VHH100ME12
50	5.6	6.3 x 5.9	70	1000	310	0.12	56	50VHH5R6MC6
	10	8 x 6.9	60	1200	371	0.12	100	50VHH10MD7
	27	8 x 11.9	35	2100	665	0.12	270	50VHH27MD12
	47	10 x 12.6	30	2600	825	0.12	470	50VHH47ME12