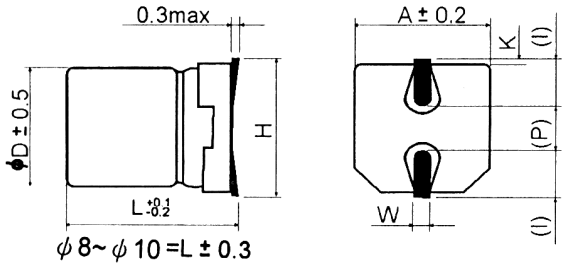
Surface Mount Aluminum Electrolytic Capacitors

Surface Mount 85°C

VCAF

ITEMS	SPECIFICATION							
Capacitance Tolerance (120Hz 20° C)	± 20% (M)							
Rated Working Voltage	4~ 50V							
Temperature Range	- 40~ 85 °C							
Dissipation Factor (tan δ) (120 Hz , 20°C)	W V		4	6.3	10	16	25	35	50
	D.F	Ø 3	0.37	0.28	0.22	0.18	0.16	0.14	0.14
		Ø 4~Ø 6.3	0.35	0.26	0.20	0.16	0.14	0.12	0.12
		Ø 8~Ø 10	0.40	0.35	0.26	0.20	0.16	0.14	0.12
Leakage Current	I ≤ 0.01CV or 3 Whichever is greater							
	After rated voltage applied for 2 minutes Where I : Leakage Current (μA) C : Capacitance (μF) V : Voltage (V)							
Low Temperature Characteristics	Impedance ratio at 120Hz							
	Comparison ZWV		4	6.3	10	16	25	35	50
	- 25 °C+20 °C		7	4	3	2	2	2	2
	- 40 °C+20 °C		15	8	6	4	4	3	3
Load Life	After 2000 hours application of W.V. at 85 °C, the capacitor shall meet the following limits							
	Capacitance Change		≤ ± 20 % of Initial Value					
	Dissipation Factor		≤ 200 % of Initial Specified Value					
	Leakage Current		≤ Initial Specified Value					
Shelf Life	After 500 hours to place at 85 °C without rated voltage applied, the capacitor shall meet the limits as same as load life.							
Others	Satisfied JIS C-5141							



(mm)

ØD	L	A	H	I	W	P	K
3.0	5.4	3.3	4.5 MAX	1.5	0.55 ± 0.1	0.6 ± 0.2	$0.35^{+0.15}_{-0.20}$
4.0	5.4	4.3	5.5 MAX	1.8	0.65 ± 0.1	1.0 ± 0.2	$0.35^{+0.15}_{-0.20}$
5.0	5.4	5.3	6.5 MAX	2.2	0.65 ± 0.1	1.5 ± 0.2	$0.35^{+0.15}_{-0.20}$
6.3	5.4	6.6	7.8 MAX	2.6	0.65 ± 0.1	1.8 ± 0.2	$0.35^{+0.15}_{-0.20}$
8.0	6.2	8.3	9.5 MAX	3.4	0.65 ± 0.1	2.2 ± 0.2	$0.35^{+0.15}_{-0.20}$
8.0	10.2	8.3	10.0 MAX	3.4	0.90 ± 0.2	3.1 ± 0.2	0.70 ± 0.2
10.0	10.2	10.3	12.0 MAX	3.5	0.90 ± 0.2	4.6 ± 0.2	0.70 ± 0.2

RIPPLE CURRENT COEFFICIENTS

Frequency Multipliers

Frequency (Hz)	~60	120	1K	10K~
Coefficient	0.80	1.00	1.15	1.25

Temperature Multipliers

Temp. (°C)	~75	85
Coefficient	1.3	1.0

Surface Mount 85°C

CASE SIZE & MAX RIPPLE CURRENT

CASE SIZE ØDxL (mm) MAX RIPPLE CURRENT (mA/85 °C, 120Hz)

CAP Code	WV / µF	4		6.3		10		16		25		35		50	
		ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA
OR1	0.1													4×5.4	1
R22	0.22													4×5.4	2
R33	0.33													4×5.4	3
R47	0.47													4×5.4	5
010	1.0													4×5.4	10
2R2	2.2											3×5.4	8	4×5.4	16
3R3	3.3											3×5.4	10	4×5.4	16
4R7	4.7									4×5.4	22	4×5.4	22	5×5.4	23
100	10							4×5.4	28	5×5.4	28	5×5.4	30	6.3×5.4	35
220	22	3×5.4	19	4×5.4	20	4×5.4	28	5×5.4	39	6.3×5.4	55	6.3×5.4	60	8×6.2	110
330	33	4×5.4	26	5×5.4	22	5×5.4	43	5×5.4	45	6.3×5.4	65	8×6.2	130	8×10.2	120
470	47	4×5.4	34	5×5.4	46	5×5.4	43	6.3×5.4	70	8×6.2	165	8×6.2	165	10×10.2	130
101	100	5×5.4	61	6.3×5.4	71	6.3×5.4	71	8×6.2	200	8×10.2	180	10×10.2	210		
221	220	6.3×5.4	82	8×6.2	250	8×6.2	250	8×10.2	280	10×10.2	310				
331	330			8×6.2	300	8×10.2	330	10×10.2	380						
471	470			8×10.2	380	10×10.2	400	10×10.2	420						
102	1000			10×10.2	700										

* Part Numbering System on Page B32

Surface Mount Aluminum Electrolytic Capacitors

Surface Mount 105°C

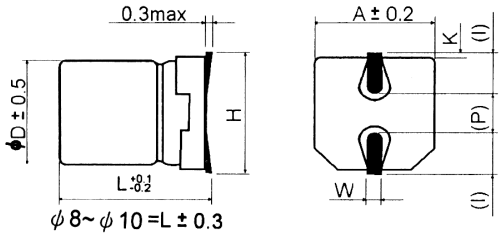
VCA Series

- Surface mount lead terminals.
- Low profile vertical chip, 105'C

SPECIFICATION

ITEMS	SPECIFICATION							
Capacitance Tolerance (120Hz ,20° C)	± 20% (M)							
Rated Working Voltage	6.3~ 50V							
Temperature Range	- 40~ 105 °C							
Dissipation Factor (tan δ) (120 Hz , 20C)	W V		6.3	10	16	25	35	50
	D.F	Ø 3	0.32	0.24	0.18	0.16	0.14	0.14
		Ø 4~Ø 6.3	0.30	0.22	0.16	0.14	0.12	0.12
		Ø 8~Ø 10	0.35	0.26	0.20	0.16	0.14	0.12
Leakage Current	1≤ 0.01CV or 3 Whichever is greater,							
	After rated voltage applied for 2 minutes Where I : Leakage Current (μA) C : Capacitance (μF) V : Voltage (V)							
Low Temperature Characteristics	Impedance ratio at 120Hz							
	Comparison Z\WV		6.3	10	16	25	35	50
	- 25 °C/20 °C		4	3	2	2	2	2
	- 40 °C/20 °C		8	6	4	4	3	3
Load Life	After 1000 hours application of W.V. at 105°C, the capacitor shall meet the following limits							
	Capacitance Change		≤±20 % of Initial Value					
	Dissipation Factor		≤200 % of Initial Specified Value					
	Leakage Current		≤Initial Specified Value					
Shelf Life	After 500 hours to place at 105 °C without rated voltage applied, the capacitor shall meet the limits as same as load life.							
Others	Satisfied JIS C-5141							

DIMENSIONS IN MM (NOT TO SCALE)



(mm)

ØD	L	A	H	I	W	P	K
4.0	5.8	4.3	5.5 MAX	1.8	0.65 ± 0.1	1.0± 0.2	0.35 +0.15 -0.20
5.0	5.8	5.3	6.5 MAX	2.2	0.65 ± 0.1	1.5± 0.2	0.35 +0.15 -0.20
6.3	5.8	6.6	7.8 MAX	2.6	0.65 ± 0.1	1.8± 0.2	0.35 +0.15 -0.20
8.0	6.2	8.3	9.5 MAX	3.4	0.65 ± 0.1	2.2± 0.2	0.35 +0.15 -0.20
8.0	10.2	8.3	10.0 MAX	3.4	0.90 ± 0.2	3.1± 0.2	0.70 ± 0.2
10.0	10.2	10.3	12.0 MAX	3.5	0.90 ± 0.2	4.6± 0.2	0.70 ± 0.2

( ) reference size

RIPPLE CURRENT COEFFICIENTS

Frequency Multipliers

Frequency (Hz)	~60	120	1K	10K~
Coefficient	0.85	1.00	1.15	1.25

Temperature Multipliers

Temperature (°C)	~ 75	85	105
Coefficient	1.75	1.4	1.0

Surface Mount 105°C

CASE SIZE & MAX RIPPLE CURRENT

CASE SIZE ØDxL (mm) MAX RIPPLE CURRENT (mA/120 C, 120Hz)

CAP Code	WV / µF	6.3		10		16		25		35		50	
		ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA
0R1	0.1											4×5.4	1
R22	0.22											4×5.4	2
R33	0.33											4×5.4	3
R47	0.47											4×5.4	5
010	1.0											4×5.4	10
2R2	2.2											4×5.4	16
3R3	3.3											4×5.4	16
4R7	4.7							4×5.4	22	4×5.4	22	5×5.4	23
100	10					4×5.4	28	5×5.4	28	5×5.4	30	6.3×5.4	35
220	22	4×5.4	29			5×5.4	39	6.3×5.4	55	6.3×5.4	60	8×6.2	70
330	33	5×5.4	43	5×5.4	43	6.3×5.4	65	6.3×5.4	65	8×6.2	84	8×10.2	91
470	47	5×5.4	46	6.3×5.4	70	6.3×5.4	70	8×6.2	91	8×10.2	98	10×10.2	100
101	100	6.3×5.4	71	8×6.2	110	8×10.2	130	8×10.2	130	10×10.2	160		
221	220	8×10.2	160	8×10.2	160	10×10.2	210						
331	330	8×10.2	230	10×10.2	230	10×10.2	230						
471	470			10×10.2	270								

* Part Numbering System and Page B32

Surface Mount Aluminum Electrolytic Capacitors

Surface Mount Bi-Polar 85°C

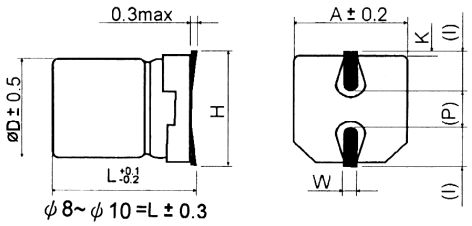
• Bi-Polar chip type, 85°C.

VCAFBP Series

SPECIFICATION

ITEM	SPECIFICATION						
Capacitance Tolerance (120Hz 20° C)	±20% (M)						
Rated Working Voltage	6.3~ 50V						
Operation Temperature Range	- 40 ~ + 85 °C						
Dissipation Factor (tan δ) (120 Hz 20° C)	W.V	6.3	10	16	25	35	50
	D.F	0.52	0.40	0.32	0.28	0.24	0.24
Leakage Current	I ≤ 0.02CV or 6 (μA) Whichever is greater						
	After rated voltage applied for 2 minutes Where I : Leakage Current (μA) C : Capacitance (μF) V : Voltage (V)						
Low Temperature Characteristics	Impedance ratio at 120Hz						
	Comparison Z/WV	6.3	10	16	25	35	50
	- 25 °C/+20 °C	4	3	2	2	2	2
	- 40 °C/+20 °C	8	6	4	4	3	3
Load Life	After 1000 hours application of W.V. at 85 °C, the capacitor shall meet the following limits						
	Capacitance Change	≤±25 % of Initial Value					
	Dissipation Factor	≤200 % of Initial Specified Value					
	Leakage Current	≤Initial Specified Value					
Shelf Life	After 500 hours to place at 85 °C without rated voltage applied, the capacitor shall meet the limits as same as load life.						
Others	Satisfied JIS C-5141						

DIMENSIONS (unit:mm)



( ) reference size

(mm)

ØD	L	A	H	I	W	P	K
3.0	5.4	3.3	4.5 MAX	1.5	0.55±0.1	0.6±0.2	0.35 +0.15 -0.20
4.0	5.4	4.3	5.5 MAX	1.8	0.65±0.1	1.0±0.2	0.35 +0.15 -0.20
5.0	5.4	5.3	6.5 MAX	2.2	0.65±0.1	1.5±0.2	0.35 +0.15 -0.20
6.3	5.4	6.6	7.8 MAX	2.6	0.65±0.1	1.8±0.2	0.35 +0.15 -0.20
8.0	6.2	8.3	9.5 MAX	3.4	0.65±0.1	2.2±0.2	0.35 +0.15 -0.20
8.0	10.2	8.3	10.0 MAX	3.4	0.90±0.2	3.1±0.2	0.70±0.2
10.0	10.2	10.3	12.0 MAX	3.5	0.90±0.2	4.6±0.2	0.70±0.2

RIPPLE CURRENT COEFFICIENTS

Frequency Multipliers

Frequency (Hz)	~60	120	1K	10K~
Coefficient	0.85	1.00	1.10	1.20

Temperature Multipliers

Temperature (°C)	~75	85
Coefficient	1.25	1.0

Surface Mount Aluminum Electrolytic Capacitors

Surface Mount Bi-Polar 85°C

CASE SIZE & MAX RIPPLE CURRENT

CASE SIZE ØDxL (mm) MAX RIPPLE CURRENT (mA/85 C, 120Hz)

CAP Code	WV / µF	6.3		10		16		25		35		50	
		ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA
R22	0.22											4×5.4	2
R33	0.33											4×5.4	3
R47	0.47											4×5.4	5
010	1.0											4×5.4	10
2R2	2.2									4×5.4	12	5×5.4	16
3R3	3.3							4×5.4	12	5×5.4	21	5×5.4	21
4R7	4.7					4×5.4	20	5×5.4	21	5×5.4	22	6.3×5.4	31
100	10			4×5.4	25	5×5.4	25	6.3×5.4	28	6.3×5.4	30		
220	22	5×5.4	29	6.3×5.4	39	6.3×5.4	39						
330	33	6.3×5.4	43	6.3×5.4	43								
470	47	6.3×5.4	46										

Part Numbering System

VCAF	2R2	M	3x5.4	10	13
Type	**Capacitance**	**Tolerance**	**Size**	**Voltage**	**T&R**
VCAF VCA VCAFBP	.1µf ↓ 1000µf	M 20%	3x5.4 4x5.4 5x5.4 6.3x5.4 8x6.2 8x10.2 10x10.2	4 volts 6.3 10 16 25 35 50	13 15