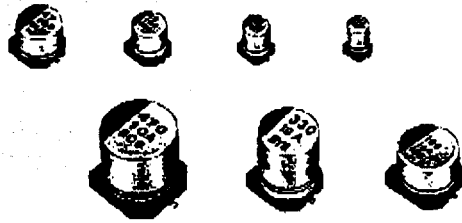


Series VS

Features

- Highly reliable surface mount type
- Life: 2000 hours at +85 °C
- 5.5 mm max. height
- Excellent space factor



Specifications

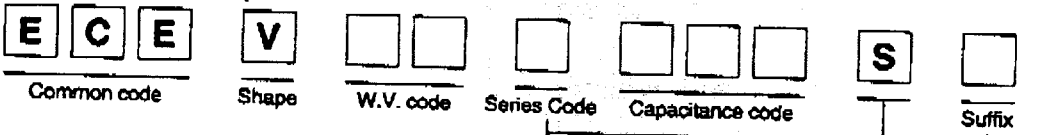
Item	Performance Characteristics							
Operating Temperature Range	-40 to +85 °C							
Rated Working Voltage Range	4 to 50 V DC							
Nominal Capacitance Range	0.1 to 1000 μF							
Capacitance Tolerance	±20 % (120 Hz, +20 °C)							
Leakage Current	$I \leq 0.01 CV$ or $3 [\mu A]$ Whichever is greater measured after 2 minutes application of rated working voltage at +20 °C. (Bi-polar: $I \leq 0.02 CV$ or $6 [\mu A]$)							
Dissipation Factor (120 Hz, +20 °C)	Working voltage [V]	4	6.3	10	16	25	35	50
	D.F. max. (φ3)	0.37	0.28	0.22	0.18	0.16	0.14	0.14
	D.F. max. (φ4~φ6.3)	0.35	0.26	0.20	0.16	0.14	0.12	0.12
	D.F. max. (φ8~φ10)	0.40	0.35	0.26	0.20	0.16	0.14	0.12
	D.F. max. (Miniature)	—	0.35	0.30	0.26	—	—	—
	D.F. max. (Bi-polar)	—	0.52	0.40	0.32	0.28	0.24	0.24
Characteristics at Low Temperature	Impedance ratio max. at 120 Hz							
	Working voltage [V]	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
Endurance	Test conditions Duration : 2000 hours Applied voltage : Rated DC working voltage Ambient temperature : +85 °C Post test requirements at +20 °C Leakage current : ≤ Initial specified value Capacitance change : ±20 % of initial measured value (φ3, 4W.V. and Miniature ±30 %) D.F. : ≤ 200 % of initial specified value							
	Test conditions Duration : 1000 hours Ambient temperature : +85 °C Applied voltage : (None) Post test requirements at +20 °C Leakage current : ≤ Initial specified value Capacitance change : ±20 % of initial measured value (φ3, 4W.V. and Miniature ±30 %) D.F. : ≤ 200 % of initial specified value							
Resistance to Soldering Heat	Test conditions After reflow soldering (Item SOLDERING) The capacitor shall be left at room temperature for before measurement Post test requirements at +20 °C Leakage current : ≤ Initial specified value Capacitance change : ±10% of initial measured value D.F. : ≤ Initial specified value							

Surface mount
Series VS

AB

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Part Number System

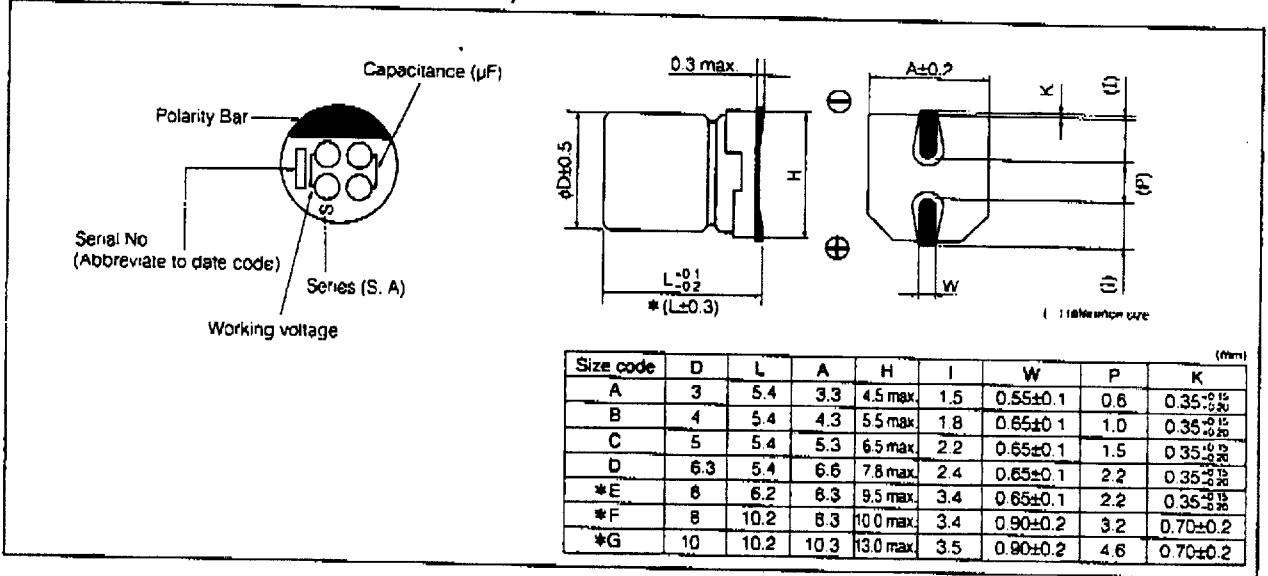


S***S	φ3
A***S	φ4~6.3
A****	φ8~10
A***N	Bi-polar
A***W	Miniature
S***W	Miniature (φ3)

R	12.0 mm width tape
P	16.0/24.0 mm width tape

(See page: 20)

Dimensions in mm (not to scale)



Case Size

Cap. [μF]	W.V. [V.DC]	4 (0G)	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)
0.1	(0R1)							A, B
0.22	(R22)							A, B
0.33	(R33)							A, B
0.47	(R47)							A, B
1	(010)							A, B
2.2	(2R2)						A	B
3.3	(3R3)						A	B
4.7	(4R7)						A, B	B, C
10	(100)				A, B	C	C	D
22	(220)	A	(A) B	(B)	(B) C	D	D	E
33	(330)	B	(B)	(B) C	(C)	D	E	F
47	(470)	B	C	(C)	(C) D		E	G
100	(101)	C	D	D	(D) E	F	G	
220	(221)	D		E	F	G		
330	(331)		E	F	G			
470	(471)		F	G	G			
1000	(102)		G					

(Following Bi-polar type is available on request)

Cap. [μF]	W.V. [V.DC]	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)
0.22	(R22)						B
0.33	(R33)						B
0.47	(R47)						B
1.0	(010)						B
2.2	(2R2)					B	C
3.3	(3R3)				B	C	D
4.7	(4R7)			B	C	C	D
10	(100)		B	C	D	D	
22	(220)	C		D			
33	(330)		D				
47	(470)	D					

*() indicates miniature

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Standard Products

W.V. [V.DC]	Cap. [μ F]	Part No.	D.C.L. [μ A] max.	D.F. max.	Ripple current [mA] rms (120 Hz/+85 °C)	Size code
35	47	ECEV1VA470P	16.4	0.14	165	E
	100	ECEV1VA101P	35.0	0.14	210	G
50	0.1	ECEV1HS0R1SR	3.0	0.14	1	A
		ECEV1HA0R1SR	3.0	0.12	1	B
	0.22	ECEV1HSR22SR	3.0	0.14	2	A
		ECEV1HAR22SR	3.0	0.12	2	B
	0.33	ECEV1HSR33SR	3.0	0.14	3	A
		ECEV1HAR33SR	3.0	0.12	3	B
	0.47	ECEV1HSR47SR	3.0	0.14	5	A
		ECEV1HAR47SR	3.0	0.12	5	B
	1.0	ECEV1HS010SR	3.0	0.14	8	A
		ECEV1HA010SR	3.0	0.12	10	B
	2.2	ECEV1HA2R2SR	3.0	0.12	16	B
	3.3	ECEV1HA3R3SR	3.0	0.12	16	B
	4.7	ECEV1HA4R7SR	3.0	0.12	23	C
	10	ECEV1HA100SP	5.0	0.12	35	D
	22	ECEV1HA220P	11.0	0.12	120	E
	33	ECEV1HA330P	16.5	0.12	110	F
47	ECEV1HA470P	23.5	0.12	130	G	

3/3

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