VTD (old series: RTD)
VERTICAL CHIP TYPE ALUMINUM ELECTROLYTIC CAPACITORS

ELNA

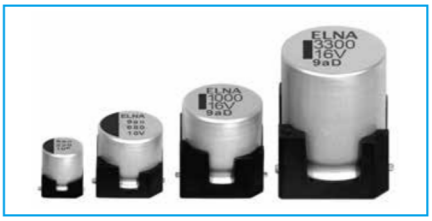
Chip Type 105˚C Use, Low ESR, Long Life, For Vibration Capacitors

GREEN CAP | SMD | Vibration Resistance | Low ESR | 105˚C 5000hours | Anti-cleaning solvent

- Compatible with surface mounting.
- For Vibration resistance. (30G guaranteed)
- Supplied with carrier taping.
- Guaranteed 2000 hours at 105°C.
  (6.3V to 50V 10.0L : 5000 hours)
  (φ12.5 or more : 5000 hours)

Vibration resistance

VTD ⇦ VVD



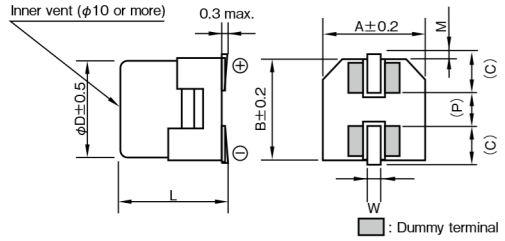
Marking color : Black print

Specifications

Item	Performance
Category temperature range (˚C)	−55 to +105
Tolerance at rated capacitance (%)	±20 (20˚C,120Hz)
Leakage current (μA) (max.)	0.01CV or 3 whichever is larger (after 2 minutes) C : Rated capacitance (μF) , V : Rated voltage (V) (20˚C)
Tangent of loss angle (tanδ)	Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 tanδ (max.): 0.26 / 0.19 / 0.16 / 0.14 / 0.12 / 0.1 / 0.08 / 0.08 / 0.07 0.02 is added to every 1000μF increase over 1000μF (20˚C,120Hz)
Characteristics at high and low temperature	Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Impedance ratio (max.) Z−25˚C/Z+20˚C: 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 Z−40˚C/Z+20˚C: 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 Z−55˚C/Z+20˚C: 8 / 4 / 4 / 3 / 3 / 3 / 3 / 3 / 3 (120Hz)
Endurance (105˚C) (Applied ripple current)	Test time: 2000 hours (φ12.5 or more, 6.3V to 50V 10.0L : 5000 hours) Leakage current: The initial specified value or less Percentage of capacitance change: Within ±30% of initial value Tangent of loss angle: 200% or less of the initial specified value (φ12.5 or more, 6.3V to 50V 10.0L : 300%)
Shelf life (105˚C)	Test time : 1000hours ; other items are same as the endurance. Voltage application treatment : According to JIS C5101-4 4.1
Applicable standards	JIS C5101-1, -18 (IEC 60384-1, -18)

Outline Drawing

Unit : mm



( ) : Reference size

φD	L	A	B	C	W	P	M	Size code
6.3	5.8±0.3	6.6	6.6	2.7	0.5 to 0.8	2.0	0.4±0.2	DC8
6.3	7.7±0.3	6.6	6.6	2.7	0.5 to 0.8	2.0	0.4±0.2	DE7
8	10±0.5	8.4	8.4	3.0	0.7 to 1.1	3.1	0.4±0.2	EH0
10	10±0.5	10.4	10.4	3.3	0.7 to 1.1	4.7	0.4±0.2	FH0
12.5	13.5±0.5	13.0	13.0	4.9	1.0 to 1.4	4.6	0.7±0.3	GL5
16	16.5±0.5	17.0	17.0	5.6	1.0 to 1.4	7.2	0.7±0.3	JP5
16	21.5±0.5	17.0	17.0	5.6	1.0 to 1.4	7.2	0.7±0.3	JU5
18	16.5±0.5	19.0	19.0	6.6	1.0 to 1.4	7.2	0.7±0.3	KP5
18	21.5±0.5	19.0	19.0	6.6	1.0 to 1.4	7.2	0.7±0.3	KU5

Refer to individual page.
(Soldering conditions, Land pattern size, The taping specifications)

Coefficient of Frequency for Rated Ripple Current

Frequency (Hz) / Rated voltage (V)	50・60	120	1k	10k・100k
6.3 to 100	0.50	0.50	0.75	1

Product code system (*For general product)

φ6.3 (example : 6.3V220μF)

RS*	VTD	221	M	1J	DC8	□	U
Category code	Series code	capacitance code	Cap tol. code	Voltage code	Size code	Taping and packing code	Additional code

φ8, φ10 (example : 6.3V1500μF)

RS*	VTD	152	M	1J	FH0	□	SU
Category code	Series code	capacitance code	Cap tol. code	Voltage code	Size code	Taping and packing code	Additional code

φ12.5 or more (example : 6.3V2200μF)

RS*	VTD	222	M	1J	GL5	005	T
Category code	Series code	capacitance code	Cap tol. code	Voltage code	Size code	Taping and packing code	Additional code

- If "Standard (terminal)" type is required, please see the series VVD.
- For details, refer to the various "Product Code System" pages.

NOTE : Design, Specifications are subject to change without notice.
It is recommended that you shall obtain technical specifications from ELNA to ensure that the component is suitable for your use.

Standard Ratings

Rated voltage (V) / Item / Rated capacitance (μF)	6.3 (1J)				10 (1L)				16 (1E)				25 (1T)				35 (1G)			
	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)
33	–	–	–	–	–	–	–	–	–	–	–	–	6.3×5.8	DC8	0.36	250	6.3×5.8	DC8	0.36	250
47	–	–	–	–	–	–	–	–	6.3×5.8	DC8	0.36	250	6.3×5.8	DC8	0.36	250	6.3×5.8	DC8	0.36	250
100	–	–	–	–	–	–	–	–	6.3×5.8	DC8	0.36	250	6.3×7.7	DE7	0.30	300	6.3×7.7	DE7	0.30	300
																	8×10	EH0	0.16	600
220	6.3×5.8	DC8	0.36	250	6.3×7.7	DE7	0.30	300	6.3×7.7	DE7	0.30	300	8×10	EH0	0.16	600	8×10	EH0	0.16	600
330	6.3×7.7	DE7	0.30	300	8×10	EH0	0.16	600	8×10	EH0	0.16	600	8×10	EH0	0.16	600	10×10	FH0	0.090	850
470	8×10	EH0	0.16	600	8×10	EH0	0.16	600	8×10	EH0	0.16	600	10×10	FH0	0.090	850	12.5×13.5	GL5	0.054	1160
680	8×10	EH0	0.16	600	10×10	FH0	0.090	850	10×10	FH0	0.090	850	12.5×13.5	GL5	0.054	1160	12.5×13.5	GL5	0.054	1160
1000	8×10	EH0	0.16	600	10×10	FH0	0.090	850	12.5×13.5	GL5	0.054	1160	12.5×13.5	GL5	0.054	1160	16×16.5	JP5	0.044	1620
1500	10×10	FH0	0.090	850	12.5×13.5	GL5	0.054	1160	12.5×13.5	GL5	0.054	1160	16×16.5	JP5	0.044	1620	18×16.5	KP5	0.040	1840
2200	12.5×13.5	GL5	0.054	1160	12.5×13.5	GL5	0.054	1160	16×16.5	JP5	0.044	1620	16×21.5	JU5	0.038	1920	18×21.5	KU5	0.036	2080
									18×16.5	KP5	0.040	1840	18×16.5	KP5	0.040	1840				
3300	16×16.5	JP5	0.044	1620	16×16.5	JP5	0.044	1620	16×21.5	JU5	0.038	1920	18×21.5	KU5	0.036	2080	–	–	–	–
									18×16.5	KP5	0.040	1840					–	–	–	–
4700	18×16.5	KP5	0.040	1840	18×21.5	KU5	0.036	2080	18×21.5	KU5	0.036	2080	–	–	–	–	–	–	–	–
6800	18×16.5	KP5	0.040	1840	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8200	18×21.5	KU5	0.036	2080	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Rated voltage (V) / Item / Rated capacitance (μF)	50 (1U)				63 (4E)				80 (1R)				100 (1H)			
	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)
10	6.3×5.8	DC8	0.86	170	–	–	–	–	–	–	–	–	–	–	–	–
22	6.3×5.8	DC8	0.86	170	–	–	–	–	8×10	EH0	0.90	130	8×10	EH0	1.30	130
33	6.3×7.7	DE7	0.66	195	8×10	EH0	0.65	250	8×10	EH0	0.90	130	10×10	FH0	0.70	200
47	6.3×7.7	DE7	0.66	195	8×10	EH0	0.65	250	10×10	FH0	0.50	200	–	–	–	–
68	–	–	–	–	8×10	EH0	0.65	250	–	–	–	–	–	–	–	–
100	8×10	EH0	0.32	350	10×10	FH0	0.35	400	12.5×13.5	GL5	0.18	550	16×16.5	JP5	0.17	700
					12.5×13.5	GL5	0.16	600								
220	10×10	FH0	0.18	700	12.5×13.5	GL5	0.16	600	16×16.5	JP5	0.16	720	18×16.5	KP5	0.15	800
330	12.5×13.5	GL5	0.12	900	16×16.5	JP5	0.14	800	18×16.5	KP5	0.13	830	18×21.5	KU5	0.13	940
470	16×16.5	JP5	0.080	1000	18×16.5	KP5	0.12	900	18×21.5	KU5	0.11	1000	–	–	–	–
680	16×16.5	JP5	0.080	1000	18×21.5	KU5	0.10	1050	–	–	–	–	–	–	–	–
1000	18×16.5	KP5	0.076	1100	–	–	–	–	–	–	–	–	–	–	–	–

(Note) Rated ripple current : 105℃ , 100kHz
ESR : 20℃ , 100kHz

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