

Code in front of series have been extracted from product code, which describes the segment of products, such as type and features.

- Compatible with surface mounting, low ESR, long life capacitors.
- Environmental : GREEN CAP™ , RoHS compliance.
- Supplied with carrier taping.
- Guaranteed 2000 hours at 105°C.  
(6.3V to 50V 10.0L :5000 hours)  
(φ12.5 : 5000 hours)



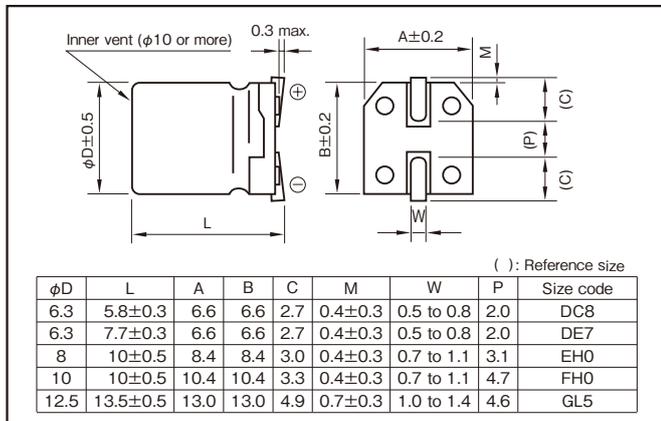
Marking color : Black print

### 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	
	tanδ (max.)	0.26	0.19	0.16	0.14	0.12	0.10	0.08	
0.02 is added to every 1000μF increase over 1000μF. (20°C,120Hz)									
Characteristics at high and low temperature	Impedance ratio (max.)	Rated voltage (V)	6.3	10	16	25	35	50	63
		Z-25°C/Z+20°C	2	2	2	2	2	2	2
		Z-40°C/Z+20°C	3	3	3	3	3	3	3
Z-55°C/Z+20°C 8 4 4 3 3 3 3 3 (120Hz)									
Endurance (105°C) (Applied ripple current)	Test time	2000 hours (φ12.5, 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 the loss angle	200% or less of the initial specified value (φ12.5, 6.3V to 50V 10.0L : 300% or less)							
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



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

### Coefficient of Frequency for Rated Ripple Current

Frequency (Hz)	50 · 60	120	1k	10k · 100k	
Rated voltage (V)	6.3 to 63	0.50	0.50	0.75	1

### Product code system (\*For general product)

φ10 or less (example : 16V100μF)

RS*	VVD	101	M	1E	DC8	002	U
Category code	Series code	capacitance code	Cap tol. code	Voltage code	Size code	Taping and packing code	Additional code

φ12.5 (example : 16V1000μF)

RS*	VVD	102	M	1E	GL5	005	T
Category code	Series code	capacitance code	Cap tol. code	Voltage code	Size code	Taping and packing code	Additional code

- If "For Vibration Resistance" type is required, please see the series VTD.
- For details, refer to the various "Product Code System" pages.

Code in front of series have been extracted from product code, which describes the segment of products, such as type and features.

### Standard Ratings

Rated voltage (V) Rated capacitance (μF)	Item	6.3 (1J)				10 (1L)				16 (1E)			
		Case φ D × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mAmps)	Case φ D × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mAmps)	Case φ D × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mAmps)
47	—	—	—	—	—	—	—	—	—	6.3 × 5.8	DC8	0.36	250
100	6.3 × 5.8	DC8	0.36	250	—	—	—	—	—	6.3 × 5.8	DC8	0.36	250
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
330	6.3 × 7.7	DE7	0.30	300	8 × 10	EH0	0.16	600	—	8 × 10	EH0	0.16	600
470	8 × 10	EH0	0.16	600	8 × 10	EH0	0.16	600	—	8 × 10	EH0	0.16	600
680	—	—	—	—	8 × 10	EH0	0.16	600	—	10 × 10	FH0	0.090	850
1000	8 × 10	EH0	0.16	600	10 × 10	FH0	0.090	850	—	12.5 × 13.5	GL5	0.054	1160
1500	10 × 10	FH0	0.090	850	12.5 × 13.5	GL5	0.054	1160	—	12.5 × 13.5	GL5	0.054	1160
2200	12.5 × 13.5	GL5	0.054	1160	12.5 × 13.5	GL5	0.054	1160	—	—	—	—	—

Rated voltage (V) Rated capacitance (μF)	Item	25 (1T)				35 (1G)				50 (1U)			
		Case φ D × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mAmps)	Case φ D × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mAmps)	Case φ D × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mAmps)
10	—	—	—	—	—	—	—	—	—	6.3 × 5.8	DC8	0.86	170
22	—	—	—	—	—	—	—	—	—	6.3 × 5.8	DC8	0.86	170
33	6.3 × 5.8	DC8	0.36	250	6.3 × 5.8	DC8	0.36	250	—	6.3 × 7.7	DE7	0.66	195
47	6.3 × 5.8	DC8	0.36	250	6.3 × 5.8	DC8	0.36	250	—	6.3 × 7.7	DE7	0.66	195
100	6.3 × 7.7	DE7	0.30	300	6.3 × 7.7	DE7	0.30	300	8 × 10	EH0	0.34	350	
					8 × 10	EH0	0.16	600					
220	8 × 10	EH0	0.16	600	8 × 10	EH0	0.16	600	10 × 10	FH0	0.20	700	
330	8 × 10	EH0	0.16	600	10 × 10	FH0	0.090	850	12.5 × 13.5	GL5	0.12	900	
470	10 × 10	FH0	0.090	850	12.5 × 13.5	GL5	0.054	1160	—	—	—	—	
680	12.5 × 13.5	GL5	0.054	1160	12.5 × 13.5	GL5	0.054	1160	—	—	—	—	
1000	12.5 × 13.5	GL5	0.054	1160	—	—	—	—	—	—	—	—	

Rated voltage (V) Rated capacitance (μF)	Item	63 (4E)			
		Case φ D × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mAmps)
10	6.3 × 5.8	DC8	1.5	80	
22	6.3 × 7.7	DE7	1.2	120	
33	8 × 10	EH0	0.65	250	
47	8 × 10	EH0	0.65	250	
68	8 × 10	EH0	0.65	250	
100	10 × 10	FH0	0.35	400	
	12.5 × 13.5	GL5	0.16	600	
220	12.5 × 13.5	GL5	0.16	600	

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