

Film Chip Capacitor

Type: **ECWU(C)**

Stacked metallized PEN film as dielectric with simple mold-less construction

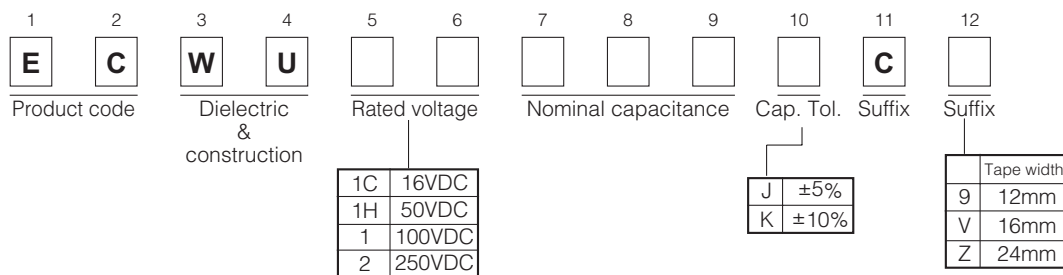
■Features

- Small in size
- Applicable for reflow soldering

■Recommended Applications

- Coupling
- By-pass
- General purpose

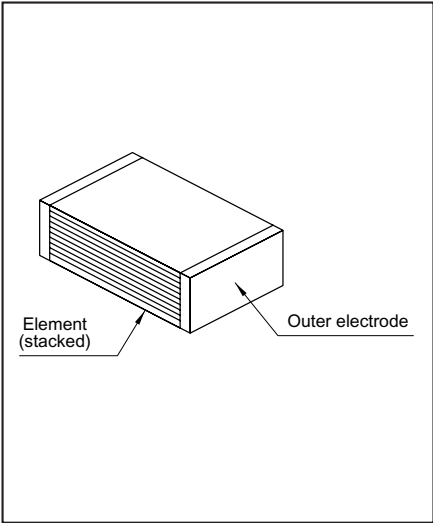
■Explanation of Part Numbers



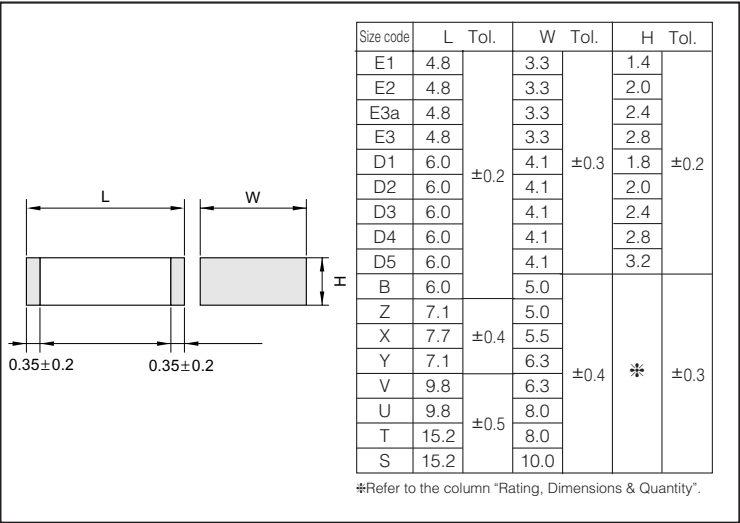
■Specifications

Category temp.range	16VDC, 50VDC : -55 to +105°C	
	100VDC, 250VDC : -40 to +85°C	
Rated voltage	16VDC, 50VDC, 100VDC, 250VDC	
Capacitance range	16VDC	0.12 to 0.47 μ F (E12)
	50VDC	0.056 to 0.22 μ F (E12)
	100VDC	0.012 to 1.0 μ F (E12)
	250VDC	0.001 to 1.0 μ F (E12)
Capacitance tolerance	16VDC, 50VDC	±5%(J)
	100VDC, 250VDC	±10%(K) (100VDC, C≤0.15 μ F ±5%(J), ±10%(K))
Withstand voltage	Between terminals 16VDC, 50VDC : Rated volt. (VDC)×175% 1 to 5s 100VDC, 250VDC : Rated volt. (VDC)×150% 60s	
Dissipation factor	≤1.0% (20°C, 1kHz)	
Insulation resistance	C≤0.33 μ F	16VDC : ≥3000M Ω · (20°C, 10VDC, 60s) 50VDC : ≥3000M Ω · (20°C, 50VDC, 60s) 100VDC, 250VDC : ≥3000M Ω · (20°C, 100VDC, 60s)
	C>0.33 μ F	16VDC : 1000M Ω · μ F min. (20°C, 10VDC, 60s) 100VDC, 250VDC : 1000M Ω · μ F min. (20°C, 100VDC, 60s)
Soldering conditions	Reflow soldering 16VDC, 50VDC : 240°C max. and 30 s max. at more than 210°C (Temp. at cap. surface) 100VDC, 250VDC : 230°C max. and 30 s max. at more than 210°C (Temp. at cap. surface)	

Construction



Dimensions in mm (not to scale)



Taping Specification for Automatic Mounting

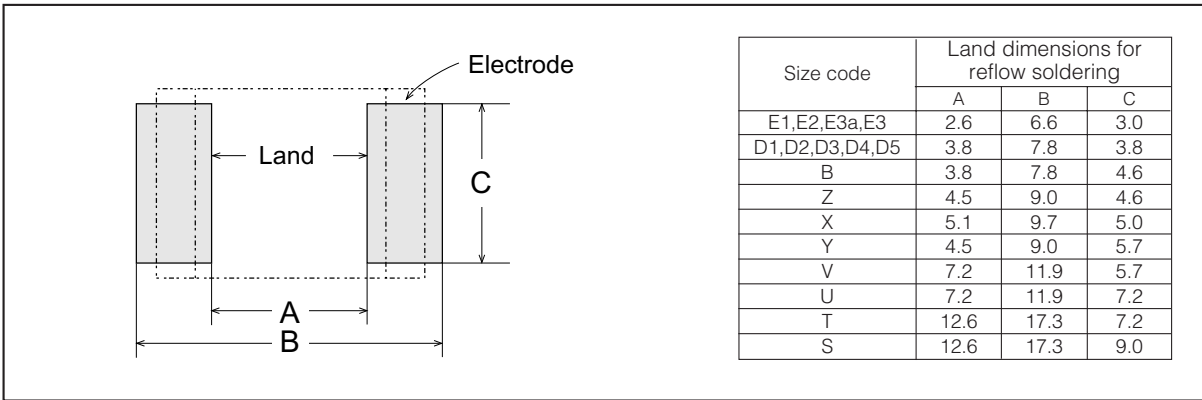
See page 7 for automatic mounting.

Rating, Dimensions & Quantity/Reel

Capacitance tolerance : ±5 % (J), ±10 % (K)

Cap. (μF)	Rated volt. 16VDC						Rated volt. 50VDC						
	Part No	Dimensions (mm)			Size code	Q'ty	Part No	Dimensions (mm)			Size code	Q'ty	
		L	W	H				L	W	H			
0.056							ECWU1H563□C9	4.8	3.3	2.0	E2	3000	
0.068							ECWU1H683□C9	4.8	3.3	2.0	E2		
0.082							ECWU1H823□C9	4.8	3.3	2.4	E3a	2000	
0.1							ECWU1H104□C9	4.8	3.3	2.8	E3		
0.12	ECWU1C124□C9	4.8	3.3	1.4	E1	3000	ECWU1H124□C9	6.0	4.1	1.8	D1	3000	
0.15	ECWU1C154□C9	4.8	3.3	2.0	E2		ECWU1H154□C9	6.0	4.1	2.0	D2		
0.18	ECWU1C184□C9	4.8	3.3	2.0	E2	2000	ECWU1H184□C9	6.0	4.1	2.4	D3	2000	
0.22	ECWU1C224□C9	4.8	3.3	2.4	E3a		ECWU1H224□C9	6.0	4.1	2.8	D4		
0.27	ECWU1C274□C9	6.0	4.1	1.8	D1	3000	↑ Capacitance tolerance code						
0.33	ECWU1C334□C9	6.0	4.1	2.0	D2								
0.39	ECWU1C394□C9	6.0	4.1	2.4	D3								
0.47	ECWU1C474□C9	6.0	4.1	2.8	D4								
↑ Capacitance tolerance code													

Recommended for Land Dimensions (mm)



■ Rating, Dimensions & Quantity/Reel

● Capacitance tolerance : $\pm 5\%$ (J), $\pm 10\%$ (K)

Cap. (μF)	Rated volt. 100VDC						Rated volt. 250VDC							
	Part No	Dimensions (mm)			Size code	Q'ty	Part No	Dimensions (mm)			Size code	Q'ty		
		L	W	H				L	W	H				
0.001	Please use 100VDC rating ECWU(X)						ECWU2102	C9	4.8	3.3	1.4	E1	3000	
0.0012							ECWU2122	C9	4.8	3.3	1.4	E1		
0.0015							ECWU2152	C9	4.8	3.3	1.4	E1		
0.0018							ECWU2182	C9	4.8	3.3	1.4	E1		
0.0022							ECWU2222	C9	4.8	3.3	1.4	E1		
0.0027							ECWU2272	C9	4.8	3.3	1.4	E1		
0.0033							ECWU2332	C9	4.8	3.3	1.4	E1		
0.0039							ECWU2392	C9	4.8	3.3	1.4	E1		
0.0047							ECWU2472	C9	4.8	3.3	1.4	E1		
0.0056							ECWU2562	C9	4.8	3.3	1.4	E1		
0.0068							ECWU2682	C9	4.8	3.3	1.4	E1		
0.0082							ECWU2822	C9	4.8	3.3	1.4	E1		
0.01							ECWU2103	C9	4.8	3.3	1.4	E1		
0.012	ECWU1123	C9	4.8	3.3	1.4	E1	ECWU2123	C9	4.8	3.3	1.4	E1	3000	
0.015	ECWU1153	C9	4.8	3.3	1.4	E1	ECWU2153	C9	4.8	3.3	1.4	E1		
0.018	ECWU1183	C9	4.8	3.3	1.4	E1	ECWU2183	C9	4.8	3.3	2.0	E2		
0.022	ECWU1223	C9	4.8	3.3	1.4	E1	ECWU2223	C9	4.8	3.3	2.0	E2		
0.027	ECWU1273	C9	4.8	3.3	1.4	E1	ECWU2273	C9	4.8	3.3	2.4	E3a		2000
0.033	ECWU1333	C9	4.8	3.3	1.4	E1	ECWU2333	C9	4.8	3.3	2.8	E3		3000
0.039	ECWU1393	C9	4.8	3.3	1.4	E1	ECWU2393	C9	6.0	4.1	2.0	D2		
0.047	ECWU1473	C9	4.8	3.3	2.0	E2	ECWU2473	C9	6.0	4.1	2.4	D3		2000
0.056	ECWU1563	C9	4.8	3.3	2.0	E2	ECWU2563	C9	6.0	4.1	2.8	D4		
0.068	ECWU1683	C9	4.8	3.3	2.4	E3a	ECWU2683	C9	6.0	4.1	3.2	D5		
0.082	ECWU1823	C9	4.8	3.3	2.8	E3	ECWU2823	C9	6.0	5.0	3.2	B	1500	
0.1	ECWU1104	C9	6.0	4.1	1.8	D1	ECWU2104	C9	6.0	5.0	3.8	B		
0.12	ECWU1124	C9	6.0	4.1	2.4	D3	ECWU2124	C9	6.0	5.0	4.5	B		
0.15	ECWU1154	C9	6.0	4.1	2.8	D4	ECWU2154KCV	7.1	6.3	3.5	Y	1000		
0.18	ECWU1184KC9	7.1	5.0	2.0	Z	ECWU2184KCV	7.1	6.3	4.1	Y				
0.22	ECWU1224KC9	7.1	5.0	2.4	Z	ECWU2224KCV	7.1	6.3	5.1	Y				
0.27	ECWU1274KC9	7.1	5.0	2.9	Z	ECWU2274KCV	9.8	6.3	3.9	V				
0.33	ECWU1334KC9	7.1	5.0	3.5	Z	ECWU2334KCV	9.8	6.3	4.8	V				
0.39	ECWU1394KCV	7.7	5.5	3.4	X	ECWU2394KCV	9.8	8.0	4.4	U				
0.47	ECWU1474KCV	7.7	5.5	4.0	X	ECWU2474KCV	9.8	8.0	5.3	U				
0.56	ECWU1564KCV	9.8	6.3	3.0	V	ECWU2564KCZ	15.2	8.0	3.7	T	750			
0.68	ECWU1684KCV	9.8	6.3	3.6	V	ECWU2684KCZ	15.2	8.0	4.4	T				
0.82	ECWU1824KCV	9.8	6.3	4.3	V	ECWU2824KCZ	15.2	10.0	4.2	S				
1.0	ECWU1105KCV	9.8	6.3	5.1	V	ECWU2105KCZ	15.2	10.0	5.1	S				

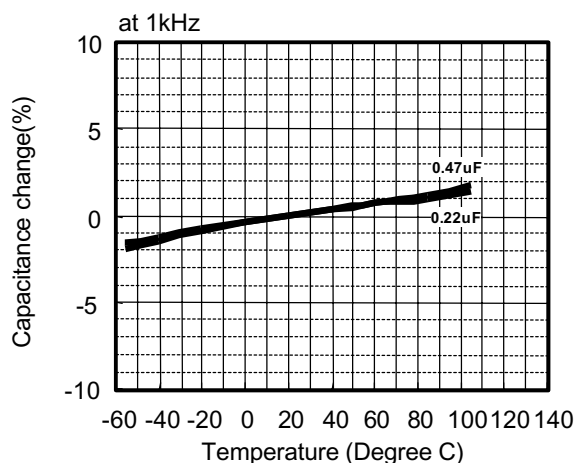
↑ Capacitance tolerance code

* Please contact us regarding capacitance tolerance of $\pm 5\%$ (J).

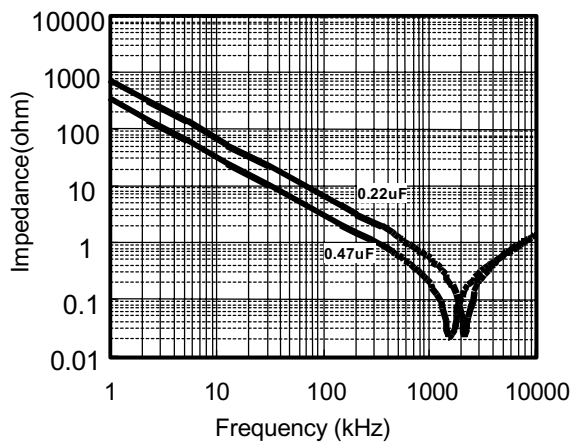
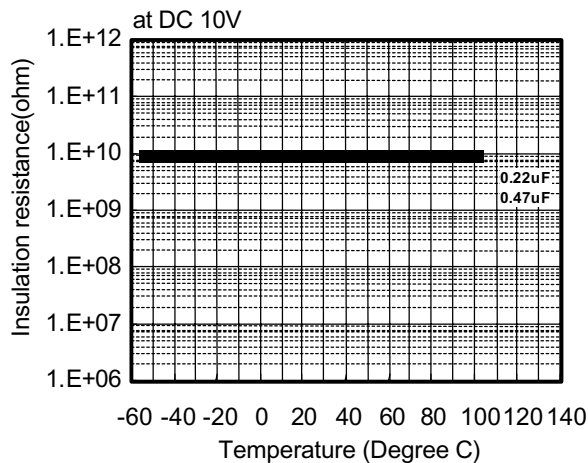
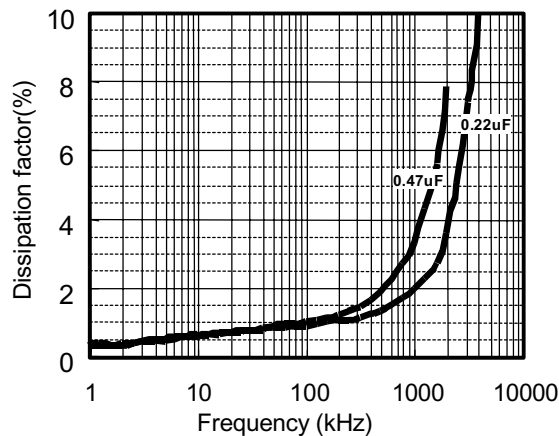
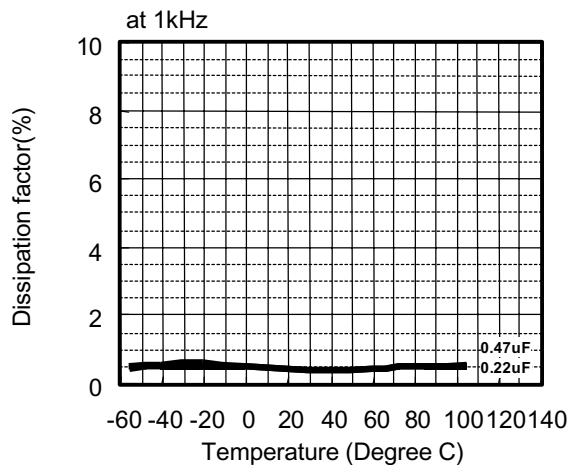
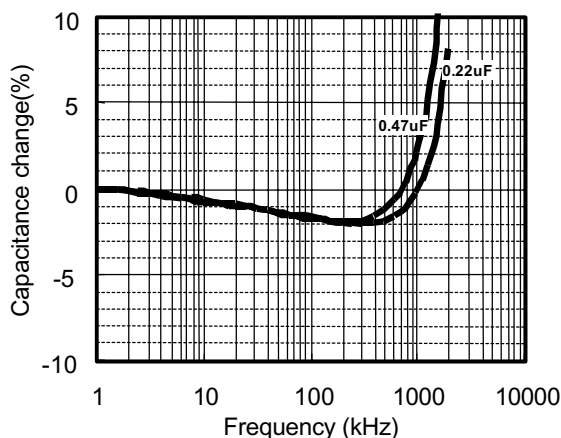
ECWU (C) Type DC16V series (Stacked Metallized Film)

Electrical Characteristics (Typical Data)

Temperature Characteristics

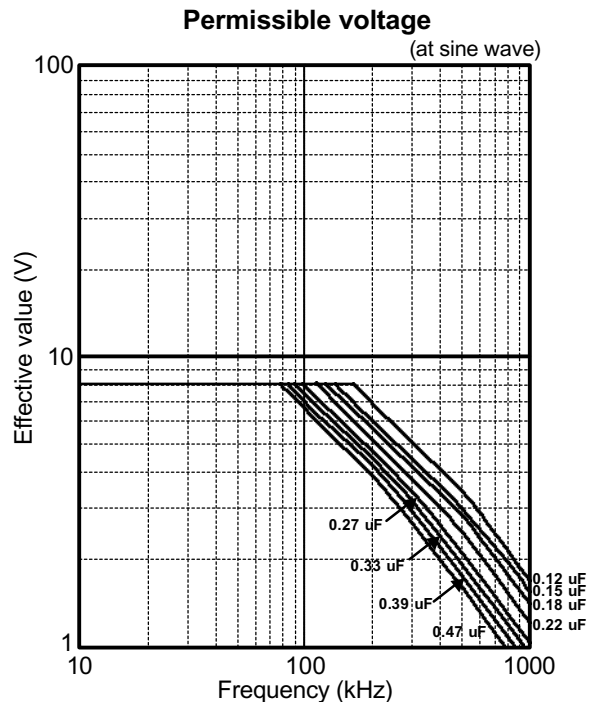
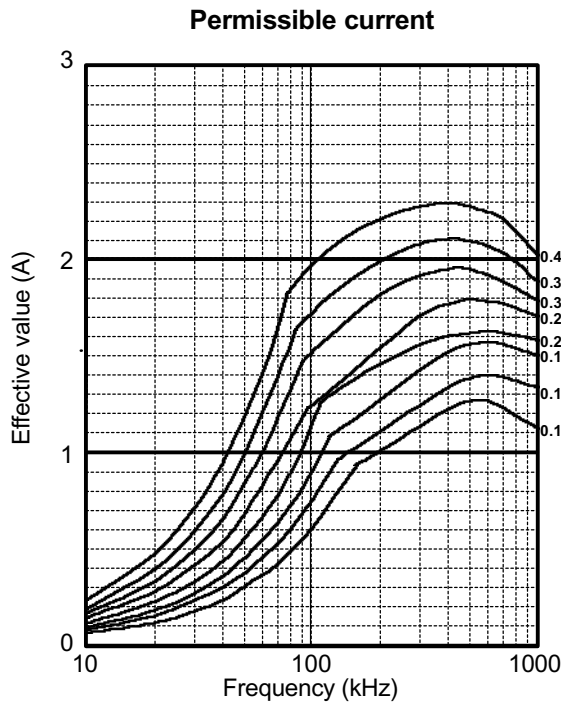


Frequency Characteristics



ECWU (C) Type DC16V series (Stacked Metallized Film)

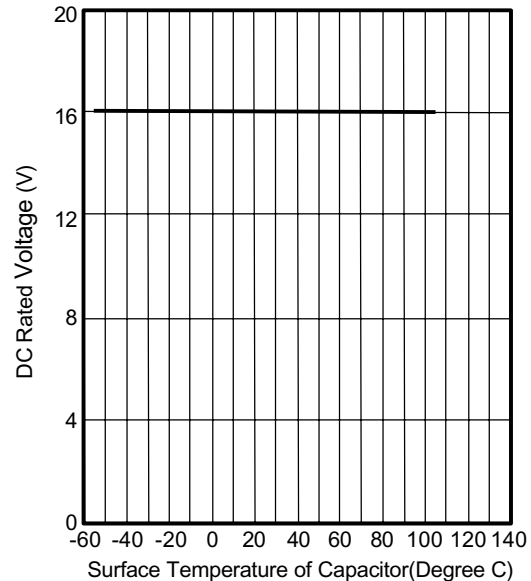
Applicable Specifications



Pulse Handling Capability (dv/dt)
(Max 10000cycles)

Rating Voltage	Capacitance Value(μ F)	Code	dv/dt(V/us)	Current _(0-P) (A)
DC 16V	0.12	124	60	7.2
	0.15	154		9.0
	0.18	184		10.8
	0.22	224		13.2
	0.27	274	40	10.8
	0.33	334		13.2
	0.39	394		15.6
	0.47	474		18.8

Voltage Derating by Temperature



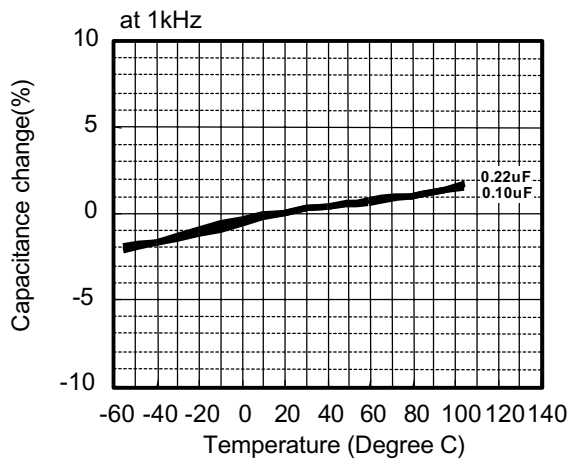
* Please consult Panasonic if your condition exceeds the above spec.

*Permissible voltage graph is the case of sine waveform. When you use this product, peak voltage must not exceed DC rated voltage.

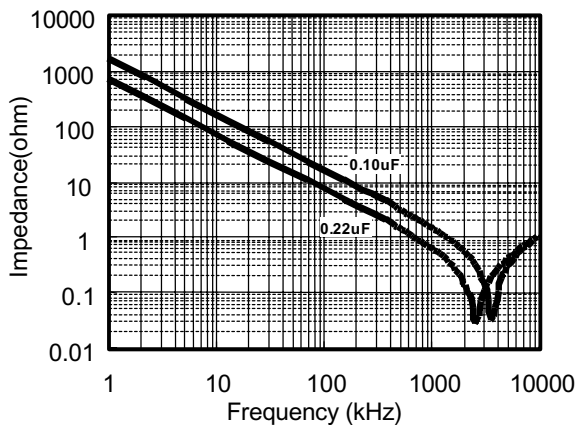
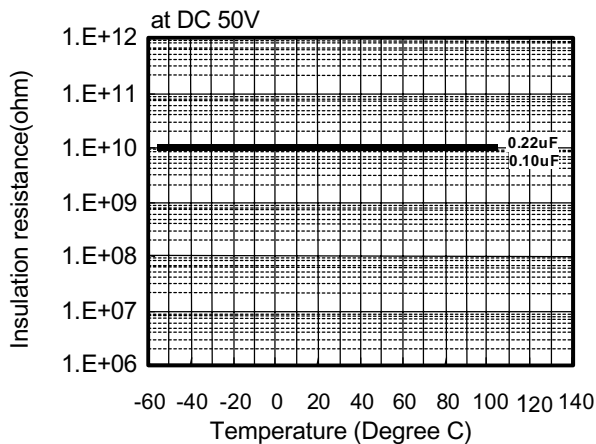
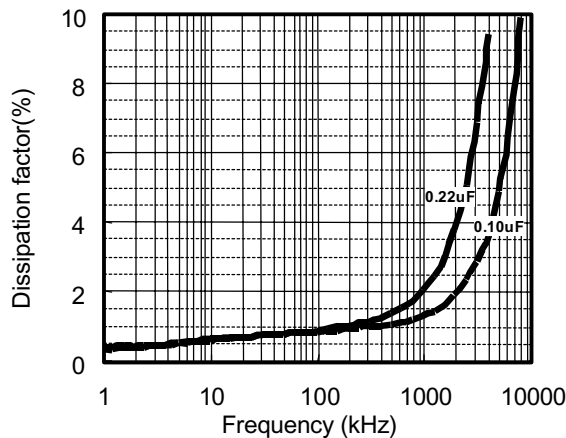
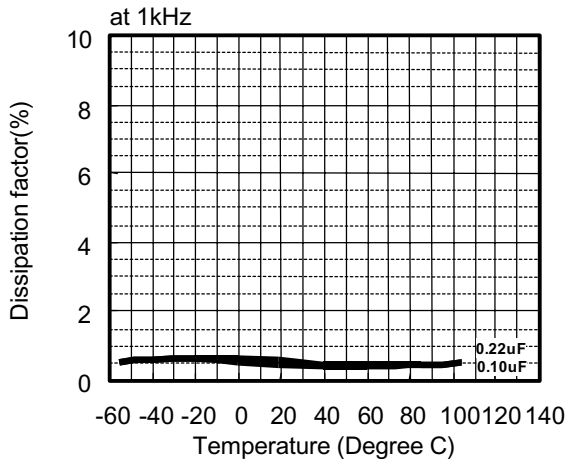
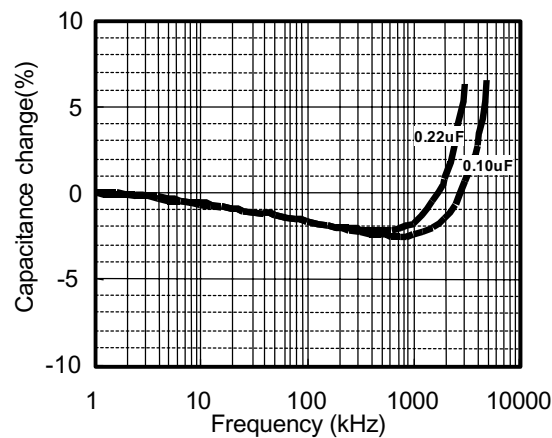
*The current_(0-P) value is calculated using nominal capacitance.

ECWU (C) Type DC50V series (Stacked Metallized Film)
Electrical Characteristics (Typical Data)

Temperature Characteristics

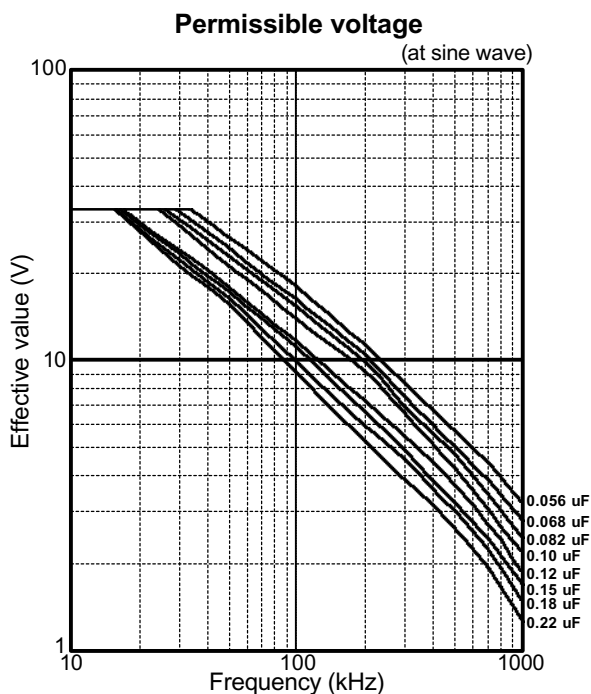
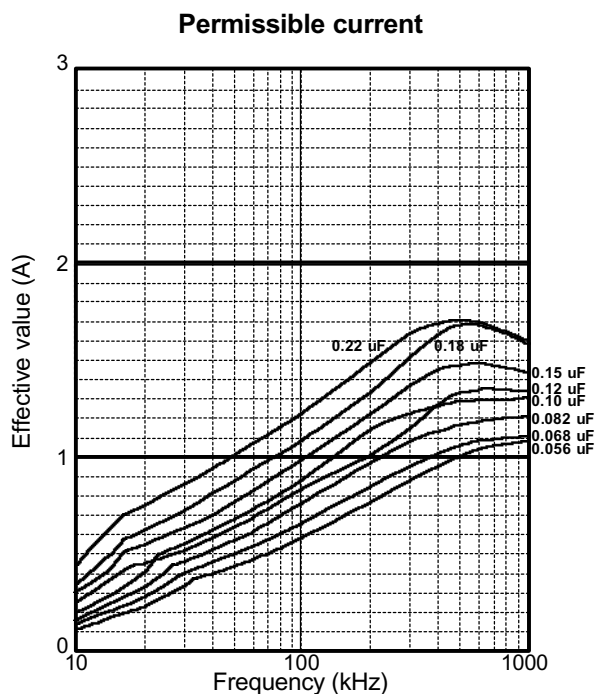


Frequency Characteristics



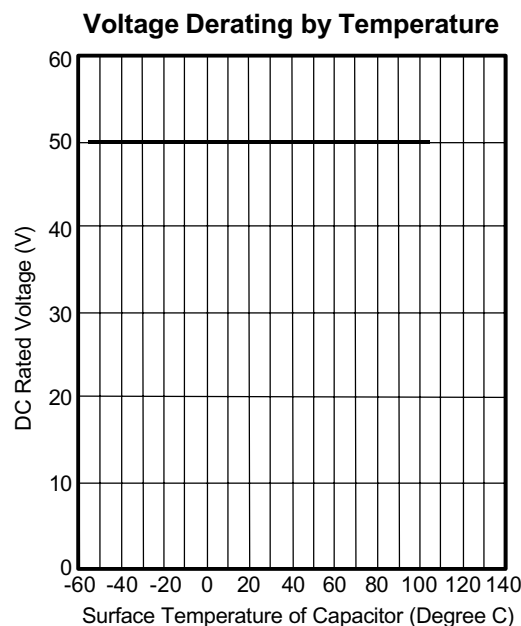
ECWU (C) Type DC50V series (Stacked Metallized Film)

Applicable Specifications



Pulse Handling Capability (dv/dt) (Max 10000 cycles)

Rating Voltage	Capacitance Value(μ F)	Code	dv/dt(V/us)	Current _(0-P) (A)
DC 50V	0.056	563	190	10.6
	0.068	683		12.9
	0.082	823		15.6
	0.10	104		19.0
	0.12	124	130	15.6
	0.15	154		19.5
	0.18	184		23.4
	0.22	224		28.6



* Please consult Panasonic if your condition exceeds the above spec.

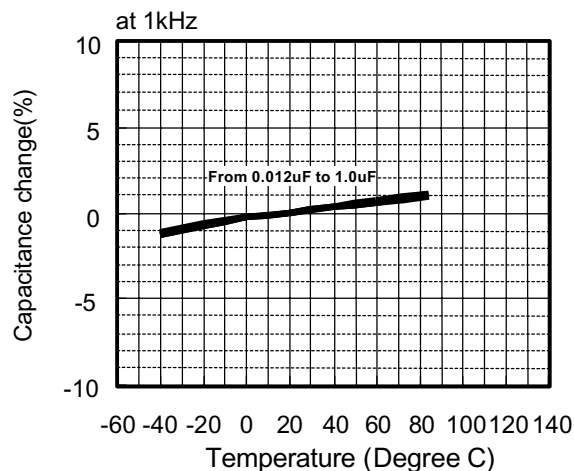
*Permissible voltage graph is the case of sine waveform. When you use this product, peak voltage must not exceed DC rated voltage.

*The current_(0-P) value is calculated using nominal capacitance.

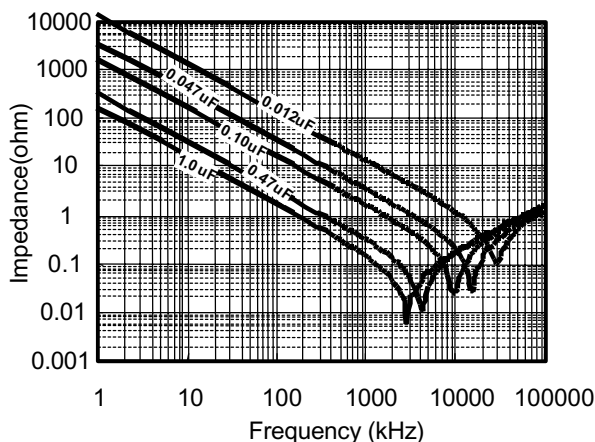
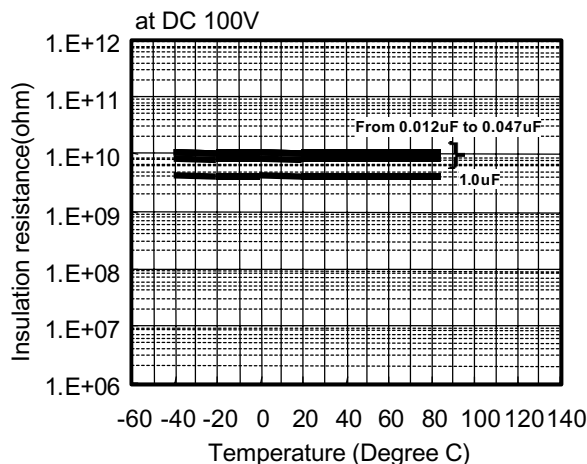
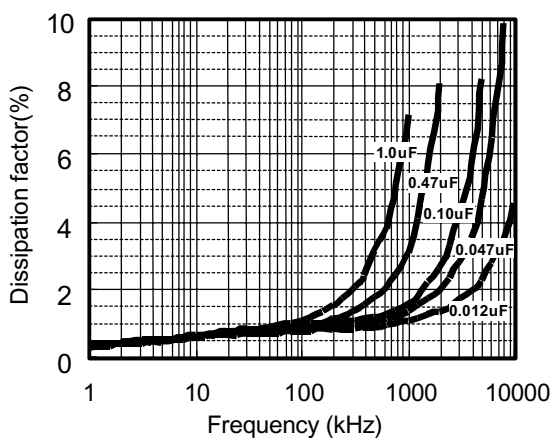
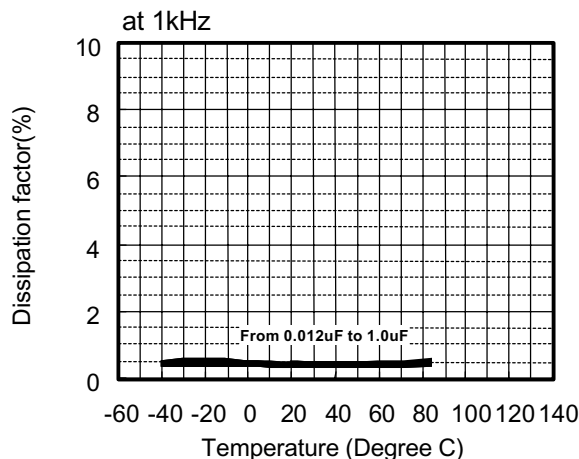
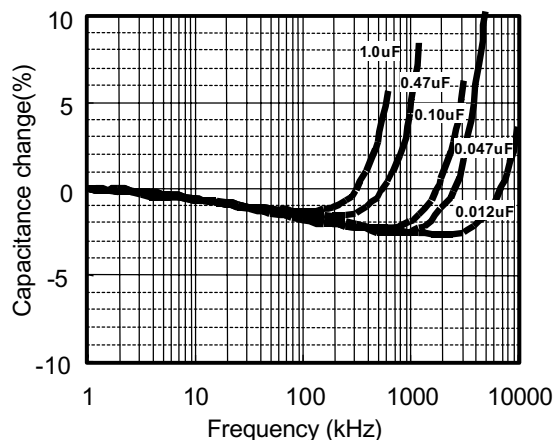
ECWU (C) Type DC100V series (Stacked Metallized Film)

Electrical Characteristics (Typical Data)

Temperature Characteristics



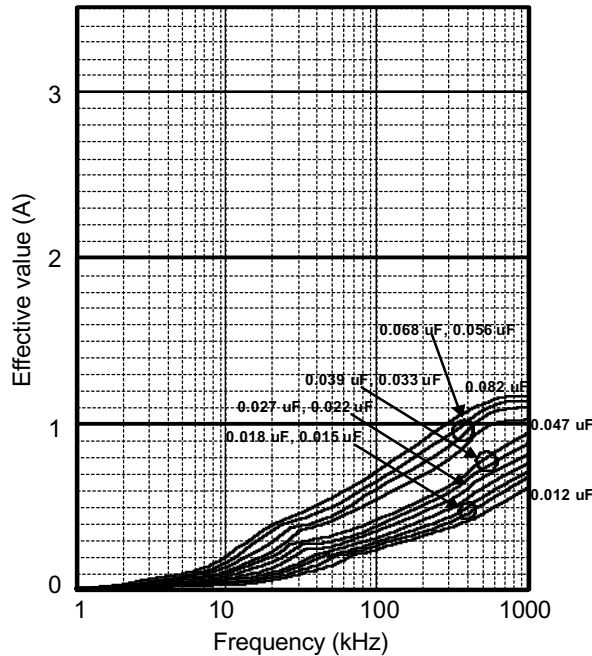
Frequency Characteristics



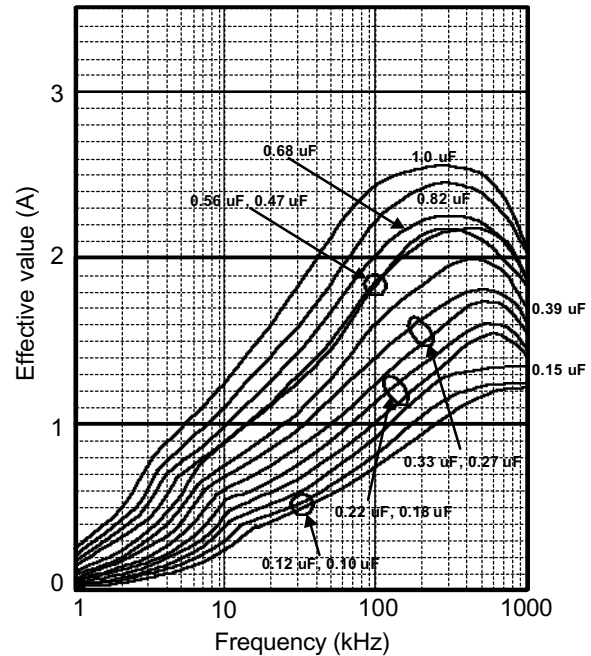
ECWU (C) Type DC100V series (Stacked Metallized Film)

Applicable Specifications

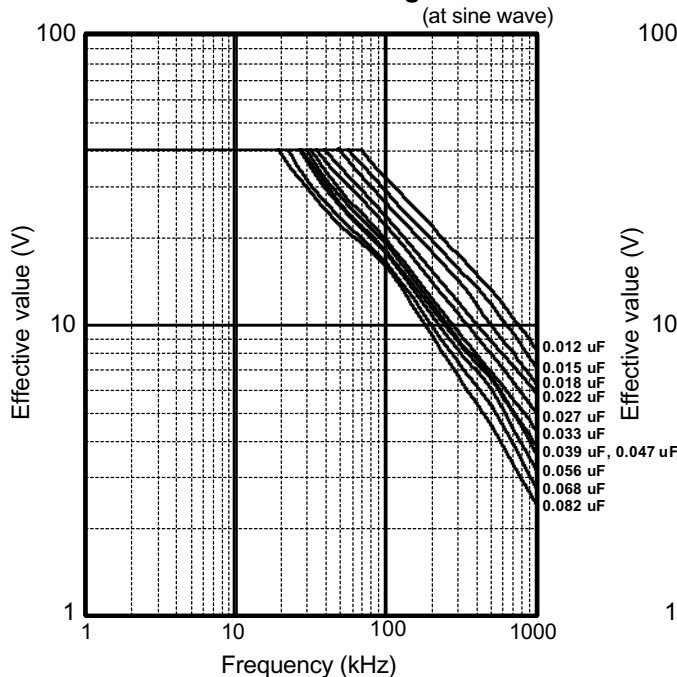
Permissible current



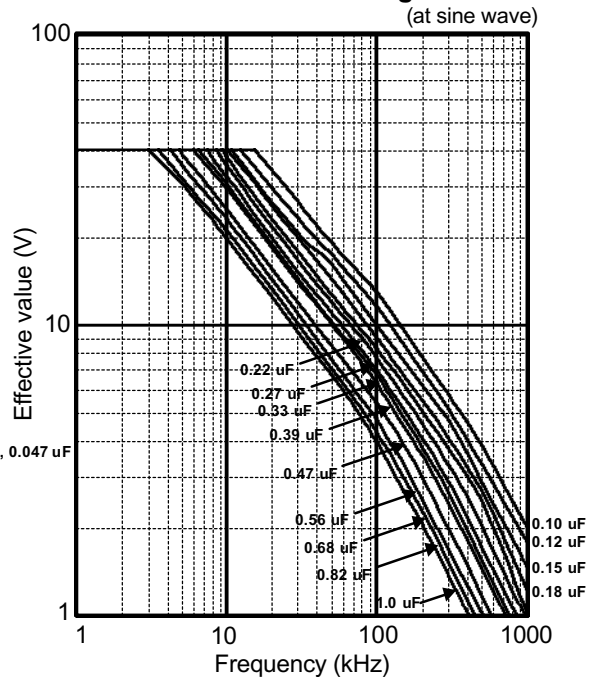
Permissible current



Permissible voltage



Permissible voltage



* Please consult Panasonic if your condition exceeds the above spec.

*Permissible voltage graph is the case of sine waveform. When you use this product, peak voltage must not exceed DC rated voltage.

*The current value (Aop) is calculated using "nominal capacitance." In fact, it changes by the tolerance of a capacitance value, capacitance change, etc.

ECWU (C) Type DC100V series (Stacked Metallized Film)

Applicable Specifications

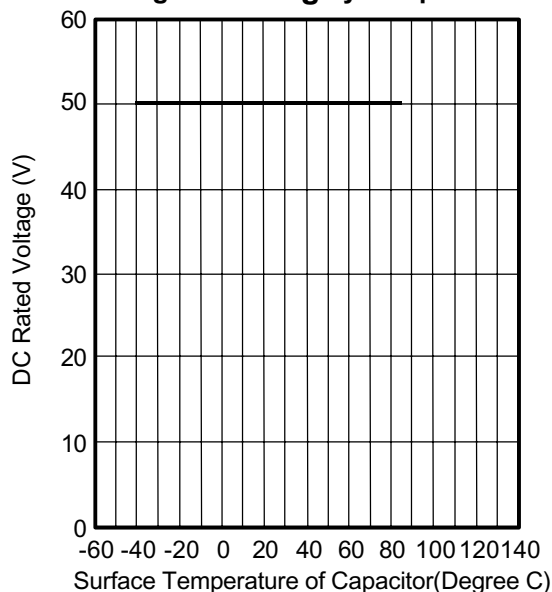
Pulse Handling Capability (dv/dt)
(Max 10000 cycles)

Rating Voltage	Capacitance Value(uF)	Code	dv/dt(V/us)	Current _(0-P) (A)
DC 100V	0.012	123	320	3.8
	0.015	123		4.8
	0.018	183		5.8
	0.022	223		7.0
	0.027	273		8.6
	0.033	333		10.6
	0.039	393		12.5
	0.047	473		15.0
	0.056	563		17.9
	0.68	683		21.8
	0.82	823		26.2

Pulse Handling Capability (dv/dt)
(Max 10000 cycles)

Rating Voltage	Capacitance Value(uF)	Code	dv/dt(V/us)	Current _(0-P) (A)
DC 100V	0.10	104	210	21.0
	0.12	124		25.2
	0.15	154		31.5
	0.18	184	120	21.6
	0.22	224		26.4
	0.27	274		32.4
	0.33	334		39.6
	0.39	394	100	39.0
	0.47	474		47.0
	0.56	564		39.2
	0.68	684	70	47.6
	0.82	824		57.4
	1.0	105		70.0

Voltage Derating by Temperature



* Please consult Panasonic if your condition exceeds the above spec.

*Permissible voltage graph is the case of sine waveform. When you use this product, peak voltage must not exceed DC rated voltage.

*The current_(0-P) value is calculated using nominal capacitance.