

### Film Chip Capacitor

Type: **ECWU (V16), (V17)**

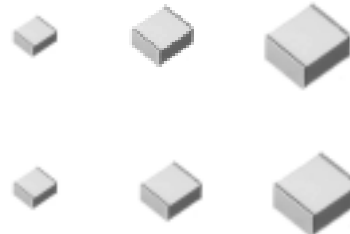
Stacked Metallized PEN film as dielectric with simple mold-less construction

■ **Features**

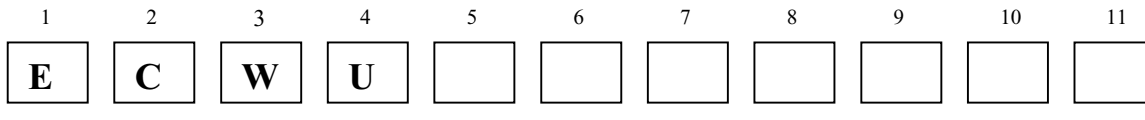
- Small in size
- Applicable for Reflow soldering

■ **Recommended Applications**

- DC Blocking for xDSL
- By-pass
- General purpose



■ **Explanation of Part Numbers**



Product code

Dielectric & construction

Rated Voltage

Capacitance

Rating (Withstand Volt)

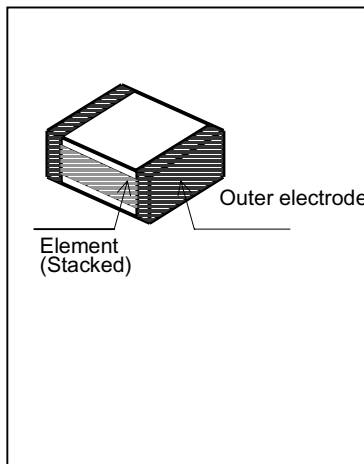
2	250VDC
4	400VDC

V16	250VDC (400VDC 1min)
V17	400VDC (600VDC 1min)

■ **Specification**

Rated Voltage	250VDC, 400VDC
Capacitance range	250VDC : 0.001 to 0.12uF (E12) 400VDC : 0.001 to 0.15uF (E12)
Capacitance tolerance	+/-5%(J)
Withstand voltage	Between terminals 250VDC rating : 400VDC for 60s 400VDC rating : 600VDC for 60s
Dissipation factor	1.0% or less (20 degree C, 1kHz)
Insulation resistance	250VDC : 3000M ohm or more
Soldering condition	Reflow soldering : 230 degree C max. 30sec max. 210 degree C and above (Temp. at caps. surface)

■ **Construction**



Size code	L	W	H
E1	4.8	3.3	1.4
E2	4.8	3.3	2.0
E3a	4.8	3.3	2.4
E3	4.8	3.3	2.8
D1	6.0	4.1	1.8
D2	6.0	4.1	2.0
D3	6.0	4.1	2.4
D4	6.0	4.1	2.8
D5	6.0	4.1	3.2
B	6.0	5.0	
Z	7.1	5.0	
X	7.7	5.5	
Y	7.1	6.3	*
V	9.8	6.3	+/-0.4
U	9.8	8.0	
T	15.2	8.0	
S	15.2	10.0	

\*:Refer to the column "Rating, Dimension & Quantity"

■ **Rating, Dimension & Quantity / Reel**  
**Capacitance tolerance: +/-5%(J)**

Cap. ( $\mu$ F)	Rated volt. 250VDC (400VDC for 1min.)					Rated volt. 400VDC (600VDC for 1min.)						
	Part No.	Dimensions (mm)			Size code	Quantity	Part No.	Dimensions (mm)			Size code	Quantity
		L	W	H				L	W	H		
0.001	ECWU2102V16	4.8	3.3	1.4	E1	3,000	ECWU4102V17	4.8	3.3	1.4	E1	3,000
0.0012	ECWU2122V16	4.8	3.3	1.4	E1		ECWU4122V17	4.8	3.3	1.4	E1	
0.0015	ECWU2152V16	4.8	3.3	1.4	E1		ECWU4152V17	4.8	3.3	1.4	E1	
0.0018	ECWU2182V16	4.8	3.3	1.4	E1		ECWU4182V17	4.8	3.3	1.4	E1	
0.0022	ECWU2222V16	4.8	3.3	1.4	E1		ECWU4222V17	4.8	3.3	1.4	E1	
0.0027	ECWU2272V16	4.8	3.3	1.4	E1		ECWU4272V17	4.8	3.3	1.4	E1	
0.0033	ECWU2332V16	4.8	3.3	1.4	E1		ECWU4332V17	4.8	3.3	1.4	E1	
0.0039	ECWU2392V16	4.8	3.3	1.4	E1		ECWU4392V17	4.8	3.3	1.4	E1	
0.0047	ECWU2472V16	4.8	3.3	1.4	E1		ECWU4472V17	4.8	3.3	1.4	E1	
0.0056	ECWU2562V16	4.8	3.3	1.4	E1		ECWU4562V17	4.8	3.3	2.0	E2	
0.0068	ECWU2682V16	4.8	3.3	1.4	E1		ECWU4682V17	4.8	3.3	2.0	E2	
0.0082	ECWU2822V16	4.8	3.3	1.4	E1		ECWU4822V17	4.8	3.3	2.4	E3a	
0.01	ECWU2103V16	4.8	3.3	1.4	E1		ECWU4103V17	4.8	3.3	2.8	E3	
0.012	ECWU2123V16	4.8	3.3	1.4	E1		ECWU4123V17	6.0	4.1	2.0	D2	
0.015	ECWU2153V16	4.8	3.3	1.4	E1		ECWU4153V17	6.0	4.1	2.4	D3	
0.018	ECWU2183V16	4.8	3.3	2.0	E2		ECWU4183V17	6.0	4.1	2.8	D4	
0.022	ECWU2223V16	4.8	3.3	2.0	E2		ECWU4223V17	6.0	4.1	3.2	D5	
0.027	ECWU2273V16	4.8	3.3	2.4	E3a		ECWU4273V17	6.0	5.0	3.0	B	
0.033	ECWU2333V16	4.8	3.3	2.8	E3	ECWU4333V17	6.0	5.0	3.6	B		
0.039	ECWU2393V16	6.0	4.1	2.0	D2	ECWU4393V17	7.1	5.0	3.2	Z		
0.047	ECWU2473V16	6.0	4.1	2.4	D3	ECWU4473V17	7.1	5.0	3.8	Z		
0.056	ECWU2563V16	6.0	4.1	2.8	D4	ECWU4563V17	7.1	6.3	3.6	Y		
0.068	ECWU2683V16	6.0	4.1	3.2	D5	ECWU4683V17	7.1	6.3	4.4	Y		
0.082	ECWU2823V16	6.0	5.0	3.2	B	ECWU4823V17	9.8	6.3	3.4	V		
0.1	ECWU2104V16	6.0	5.0	3.8	B	ECWU4104V17	9.8	6.3	4.0	V		
0.12	ECWU2124V16	6.0	5.0	4.5	B	ECWU4124V17	9.8	8.0	3.8	U		
0.15						ECWU4154V17	9.8	8.0	4.6	U		

■ **Example for Land Dimension (mm)**

**Very Important!!**

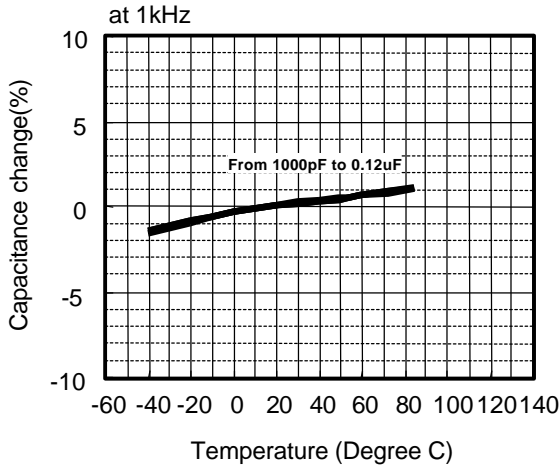
Size code	Pad Layout for Reflow soldering		
	A	B	C
E1,E2,E3a,E3	2.6	6.6	3
D2,D3,D4,D5	3.8	7.8	3.8
B	3.8	7.8	4.6
Z	4.5	9	4.6
X	5.1	9.7	5
Y	4.5	9	5.7
V	7.2	11.9	5.7



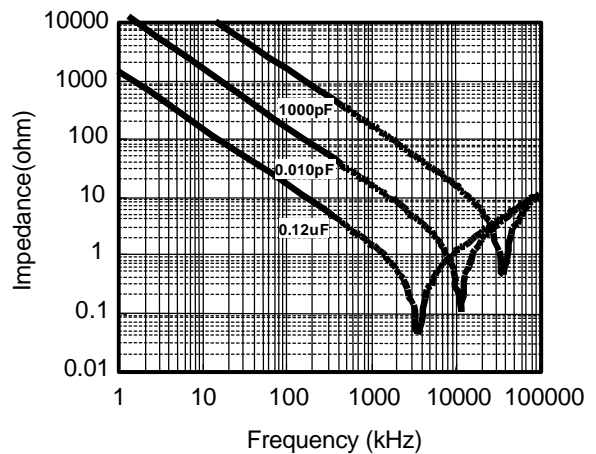
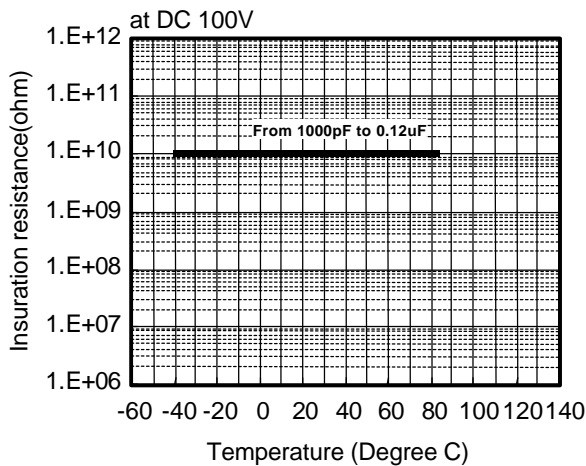
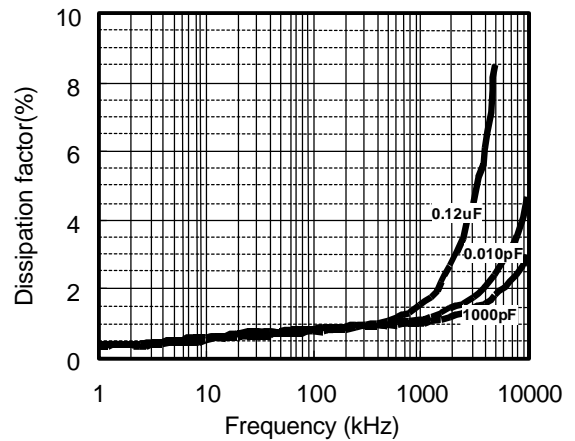
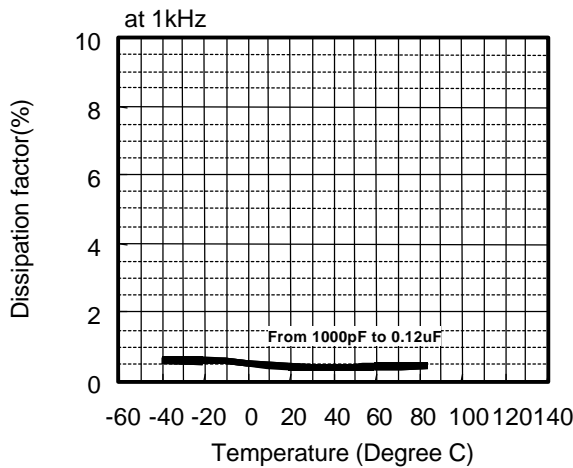
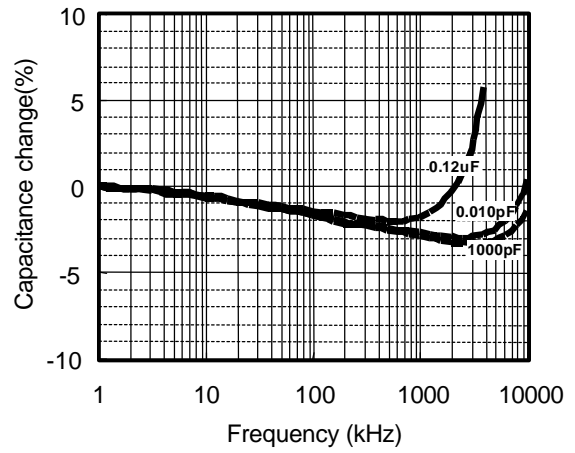
# ECWU (V16) Type (for xDSL) DC250V series (Stacked Metallized Film)

## Electrical Characteristics < Typical Data >

### Temperature Characteristics

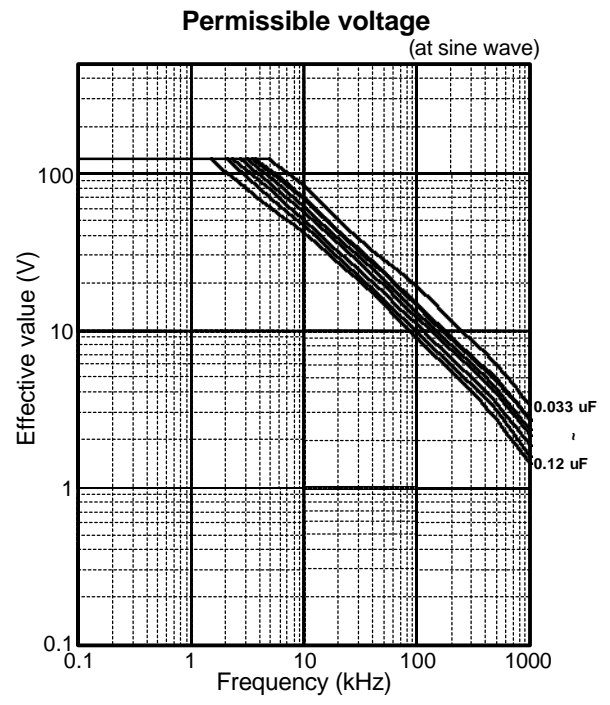
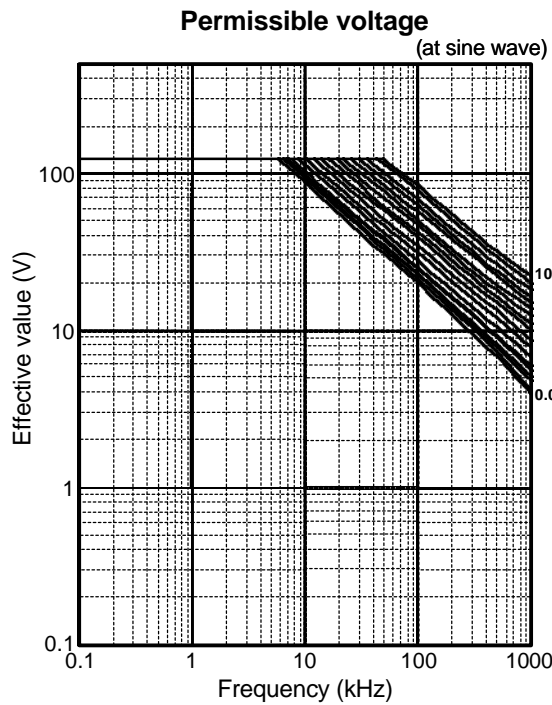
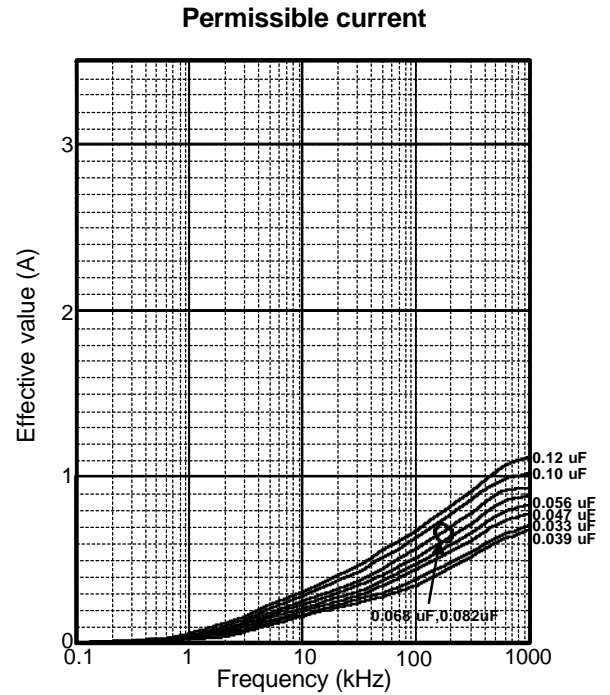
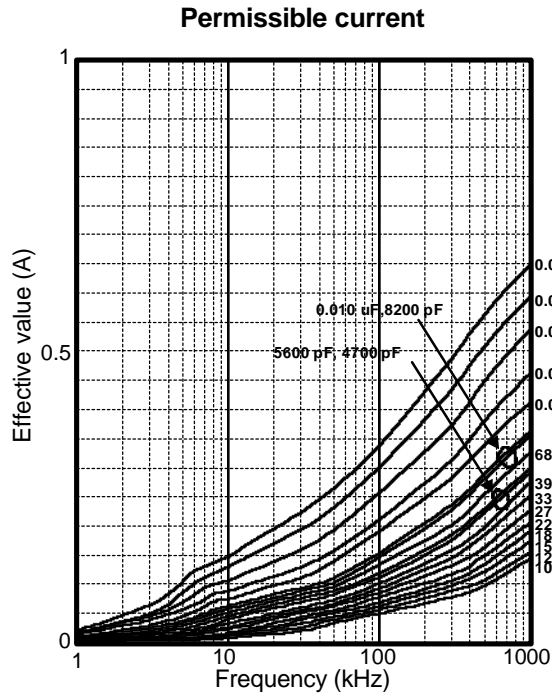


### Frequency Characteristics



**ECWU (V16) Type DC250V series (Stacked Metallized Film)**

**Applicable Specifications**



\* 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<sub>(0-P)</sub> value is calculated using nominal capacitance.



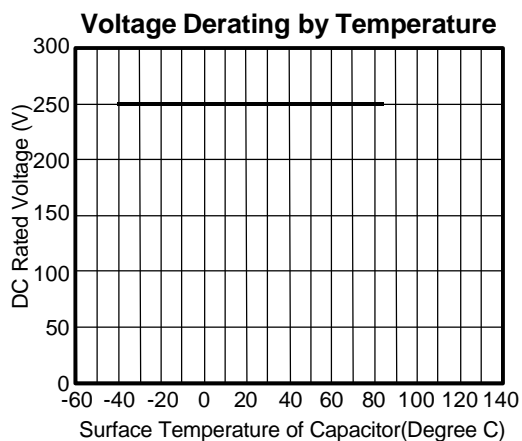
## ECWU (V16) Type DC250V series (Stacked Metallized Film)

### Applicable Specifications

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

Rating Voltage	Capacitance Value(uF)	Code	dv/dt(V/us)	Current <sub>(o,p)</sub> (A)
DC 250V	0.0010	102	615	0.62
	0.0012	122		0.74
	0.0015	152		0.92
	0.0018	182		1.11
	0.0022	222		1.35
	0.0027	272		1.66
	0.0033	332		2.03
	0.0039	392		2.40
	0.0047	472	360	1.69
	0.0056	562		2.02
	0.0068	682		2.45
	0.0082	822		2.95
	0.010	103		3.60
	0.012	123		4.32
	0.015	153		5.40
	0.018	183		6.48
	0.022	223		7.92
	0.027	273		9.72
	0.033	333		11.88

Rating Voltage	Capacitance Value(uF)	Code	dv/dt(V/us)	Current <sub>(o,p)</sub> (A)
DC 250V	0.039	393	240	9.36
	0.047	473		11.28
	0.056	563		13.44
	0.068	683		16.32
	0.082	823		19.68
	0.10	104		24.00
	0.12	124		28.80



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

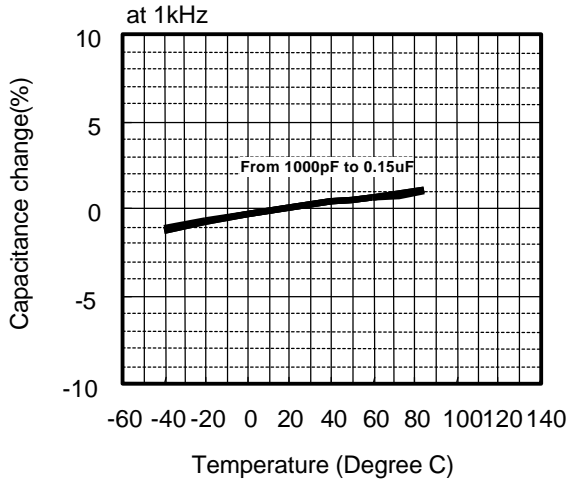
\*Permissible voltage graph is the case of sine waveform. When you use this product, peak voltage must not exceed DC rated voltage.

\*The current<sub>(o,p)</sub> value is calculated using nominal capacitance.

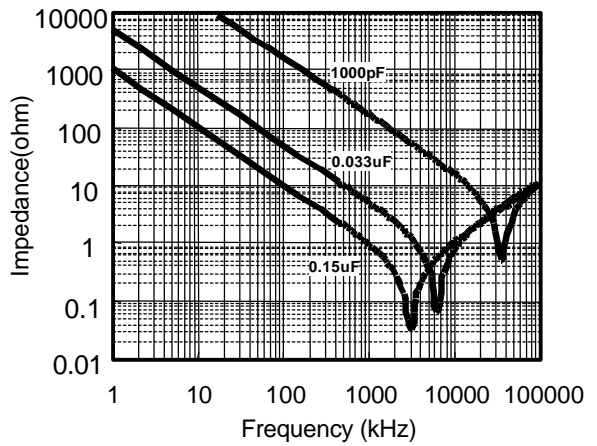
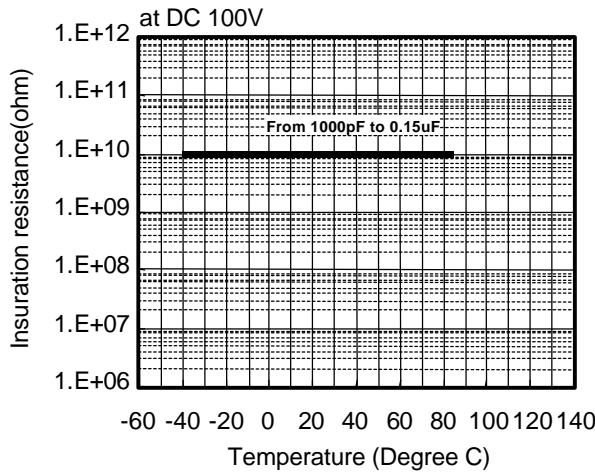
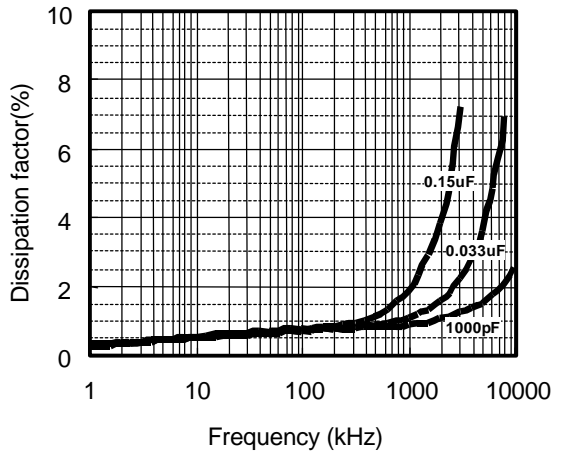
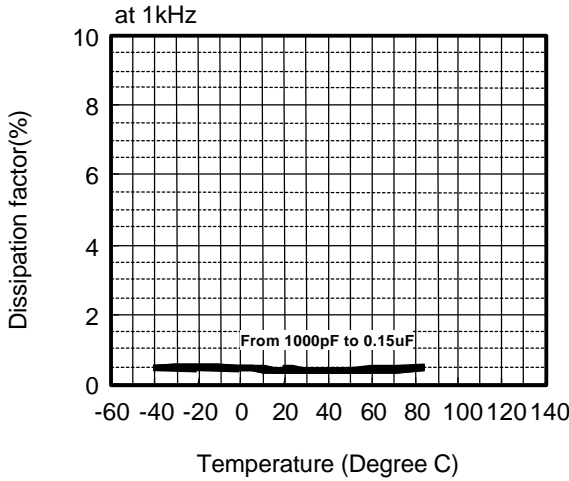
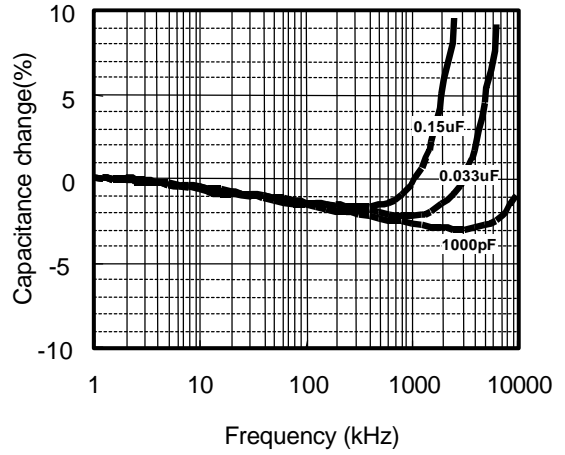
**ECWU (V17) Type(for xDSL) DC400V series (Stacked Metallized Film)**

**Electrical Characteristics < Typical Data >**

**Temperature Characteristics**



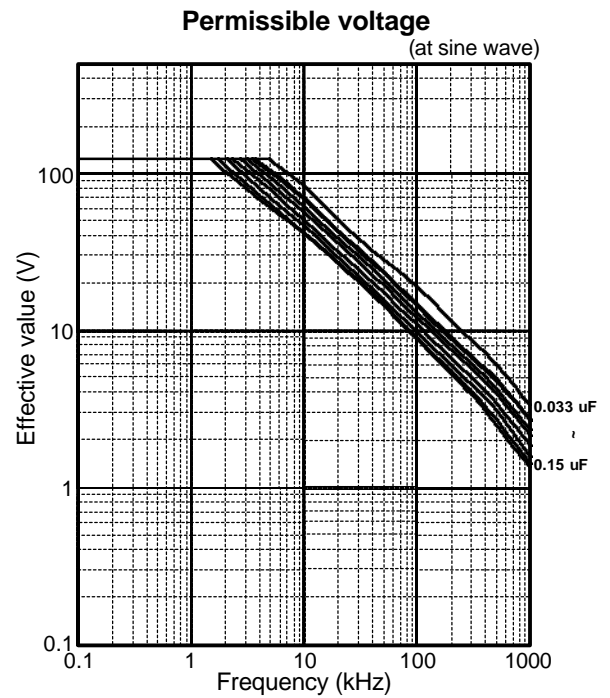
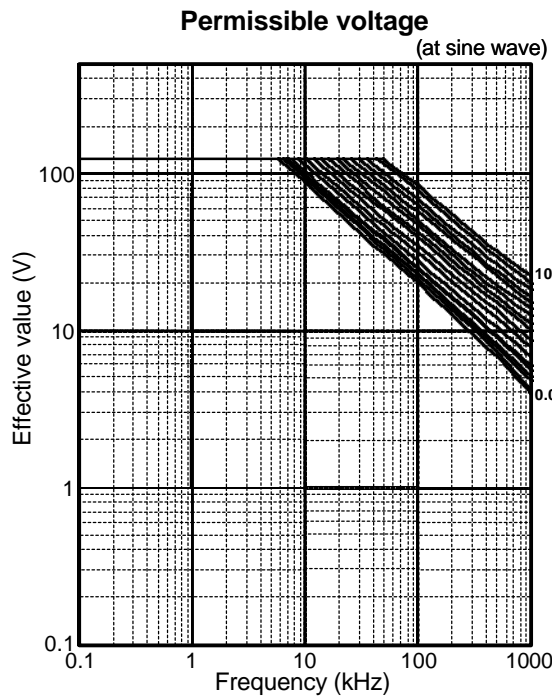
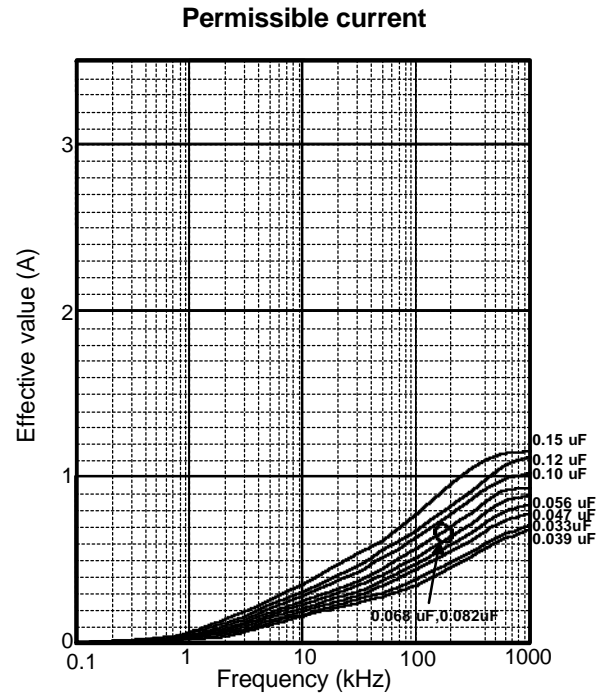
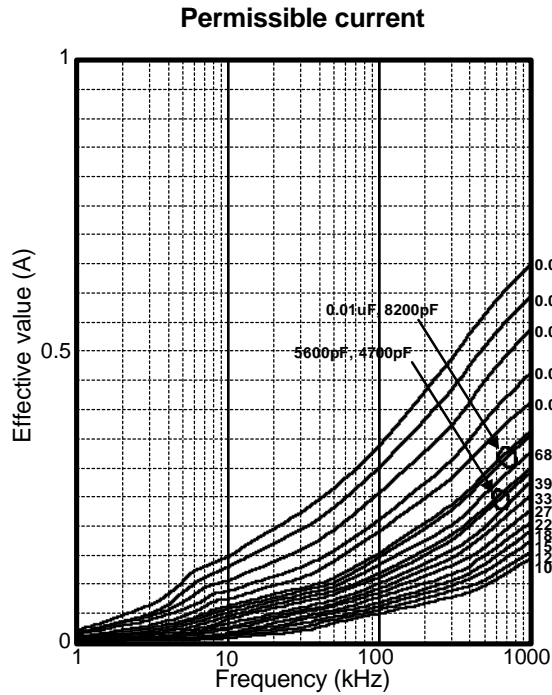
**Frequency Characteristics**





**ECWU (V17) Type DC400V series (Stacked Metallized Film)**

**Applicable Specifications**



\* 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<sub>(0-P)</sub> value is calculated using nominal capacitance.



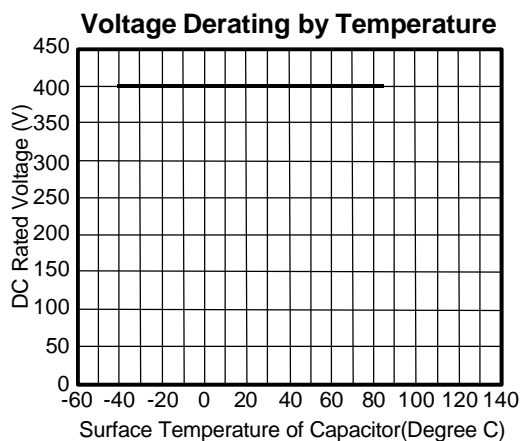
## ECWU (V17) Type DC400V series (Stacked Metallized Film)

### Applicable Specifications

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

Rating Voltage	Capacitance Value(uF)	Code	dv/dt(V/us)	Current <sub>(o,p)</sub> (A)
DC 400V	0.0010	102	615	0.62
	0.0012	122		0.74
	0.0015	152		0.92
	0.0018	182		1.11
	0.0022	222		1.35
	0.0027	272		1.66
	0.0033	332		2.03
	0.0039	392		2.40
	0.0047	472	360	1.69
	0.0056	562		2.02
	0.0068	682		2.45
	0.0082	822		2.95
	0.010	103	240	3.60
	0.012	123		2.88
	0.015	153		3.60
	0.018	183		4.32
	0.022	223		5.28
	0.027	273		6.48
	0.033	333		7.92

Rating Voltage	Capacitance Value(uF)	Code	dv/dt(V/us)	Current <sub>(o,p)</sub> (A)
DC 400V	0.039	393	190	7.41
	0.047	473		8.93
	0.056	563		10.64
	0.068	683		12.92
	0.082	823	115	9.43
	0.10	104		11.50
	0.12	124		13.80
	0.15	154		17.25



\* 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<sub>(o,p)</sub> value is calculated using nominal capacitance.



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