

SMD Film Capacitor / Product Line Up

ECPU Series

Plastic Film Capacitors
Small Case Size & Large Capacitance

Series Soldering method	Rating		Capacitance (μF)						
	Temp. Cap.Tol.	Voltage [DC]	0.00010	0.0010	0.010	0.10	1.0		
ECPU(A) Reflow	-40 ~ +85°C ±20%	16V				0.10 2012 (0805)	0.15 3216 (1206)	0.68 3216 (1206)	1.0 10V
ECPU(B) Reflow	-40 ~ +105°C ±10% ±5%	25V		0.010	0.039 1608 (0603)	0.15 2012 (0805)	0.18 3216 (1206)		1.0

ECHU Series

PPS Film Capacitors
High Performance

Series Soldering method	Rating		Capacitance (μF)						
	Temp. Cap.Tol.	Voltage [DC]	0.00010	0.0010	0.010	0.10	1.0		
ECHU(X) Reflow 260°Cmax	-55 ~ +125°C ±5% ±2%	10V		0.0033 1608 (0603)	0.0056 2012 (0805)	0.027			
ECHU(X) Reflow 260°Cmax	-55 ~ +125°C ±5% ±2%	16V	0.00010	0.0027 1608 (0603)	0.0033 2012 (0805)	0.010 3216 (1206)	0.047 3225 (1210)	0.10	
ECHU(X) ECHU(C) Reflow 260°Cmax	-55 ~ +125°C ±5% ±2%	50V	0.00010	0.0027 2012 (0805)	0.0033 3216 (1206)	0.010 3225 (1210)	0.039 4833 (1913)	0.10 6041 (2416)	0.22
ECHU(C) Reflow 260°Cmax	-55 ~ +125°C ±5% ±2%	100V		0.010	0.027 4833 (1913)	0.068 6041 (2416)	0.12 7150 (2820)	0.22 7163 (2825)	

ECWU Series

PEN Film Capacitors
Low, Medium & High Voltage

Series Soldering method	Rating		Capacitance (μF)						
	Temp. Cap.Tol.	Voltage [DC]	0.00010	0.0010	0.010	0.10	1.0		
ECWU(C) Reflow	-55 ~ +105°C ±5% ±10%	16V				0.12 4833 (1913)	0.22 6041 (2416)	0.47	
ECWU(C) Reflow	-55 ~ +105°C ±5% ±10%	50V			0.056 4833 (1913)	0.10 6041 (2416)	0.22		
ECWU(X) ECHU(C) Reflow	-55 ~ +105°C Derated ±5% ±10%	100V	0.0010	0.0047 3216 (1206)	0.010 3225 (1210)	0.082 4833 (1913)	0.15 6041 (2416)	0.33 9863 (3925)	0.47 15210 (6039)
ECWU(C) Reflow	-40 ~ +85°C Derated ±5% ±10%	250V	0.0010		0.033 4833 (1913)	0.068 6041 (2416)	0.12 6050 (2420)	0.22 9863 (3925)	0.33 15210 (6039)
ECWU (V17) Reflow	-40 ~ +85°C ±5%	400V Withstand Voltage: 600Vc-p	0.0010	0.010 4833 (1913)	0.022 6041 (2416)	0.033 7150 (2820)	0.068 7163 (2825)	0.10 9880 (3931)	0.15

Recommended Pad Layout

Unit : mm

Size codes		Recommended Dimensions		
mm	inch	A	B	C
1608	0603	0.6	2.0	0.7
2012	0805	0.8	2.4	1.1
3216	1206	1.8	3.6	1.4
3225	1210	1.8	3.6	2.3
4833	1913	2.6	6.6	3.0
6041	2416	3.8	7.8	3.8
6050	2420	3.8	7.8	4.6

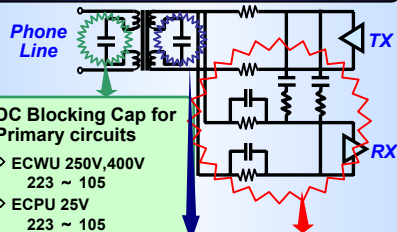
Unit : mm

Size codes		Recommended Dimensions		
mm	inch	A	B	C
7150	2820	4.5	9.0	4.6
7163	2825	4.5	9.0	5.7
7755	3022	5.1	9.7	5.0
9863	3925	7.2	11.9	5.7
9880	3931	7.2	11.9	7.2
15280	6031	12.6	17.3	7.2
152100	6039	12.6	17.3	9.0

Film Capacitors: Suggested Applications

[1] DC Blocking & Hybrid Circuits

ADSL Modem, DSLAM, IP Telephone (Modems)



DC Blocking Cap for Primary circuits

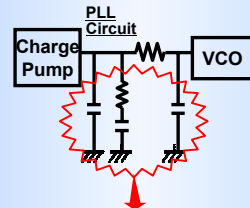
DC Blocking Cap for Secondary circuits

Hybrid Circuits

- < Advantages >
- ◆ Stable Capacitance.
 - ◆ Tight Capacitance Tolerance.
 - ◆ Low Distortion.

[2] PLL Circuits

W-LAN, Cellular Phone, Digital Tuner, Digital CATV / Satellite STB, RF Module, DVD Drive (Optical Head Positioning)



Lag Lead Filters

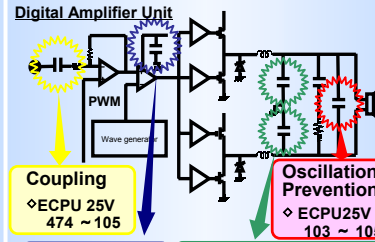
ECHU 10V, 16V, 50V : 101 ~ 104
ECPU 25V : 103 ~ 105

< Advantages >

- ◆ Low Phase Noise.
- ◆ Fast Lock-Up Time.
- ◆ Stable Capacitance.
- ◆ No Shock Noise.

[3] Audio Circuits

Portable MD/CD, Car Audio, Cellular Phones, Digital Audio Amp Modules



Coupling

ECPU 25V (474 ~ 105)

Oscillation Prevention

ECPU25V (103 ~ 105)

De-Coupling

ECPU 25V (104 ~ 105)

Low-Pass Filters

ECPU 25V (103 ~ 105)
ECWU 50V ~ (103 ~ 105)

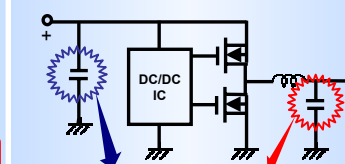
< Advantages >

- ◆ Improves Sound Quality
- ◆ Stable Capacitance
- ◆ Tight Capacitance Tolerance
- ◆ Low ESR : < Low-Pass Filter >

[4] DC/DC Converters

Notebook PCs, Cellular Phones, PDAs, Digital Camera LCD Driver, etc.

DC / DC Converter Circuit



Input Capacitors

ECPU 25V (105)

Output Capacitors

ECPU 25V (105)

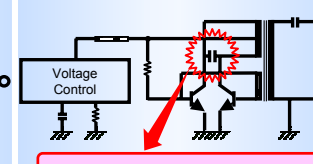
< Advantages >

- ◆ No Audible Noise
- ◆ No Piezoelectric Noise
- Capacitance values for Film Caps can be reduced as low as 40% vs MLCC due to stable DC bias voltage characteristics.

[5] Back Light Circuits

LCD Back Lighting P/S, LCD Monitors, LCD CTV, Car Audio (LCD Display), etc.

Self-Commutated Inverter Unit



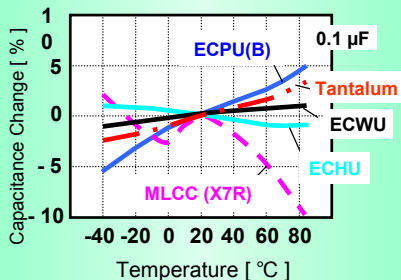
Resonance Capacitors

ECHU 473 ~ 224
DC 9V Input Model : 50V Series
DC 12V Input Model : 100V Series

< Advantages >

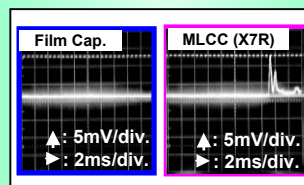
- ◆ Low Losses
- Low Self-Heating
- ◆ Stable Capacitance and Tight Tolerance
- Minimizes video flicker.

(1) Stable Temperature Char.



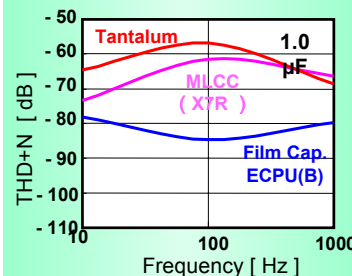
Film Capacitors can improve circuit stability vs. temperature due to their stable electrical characteristics.

(2) No Shock Noise



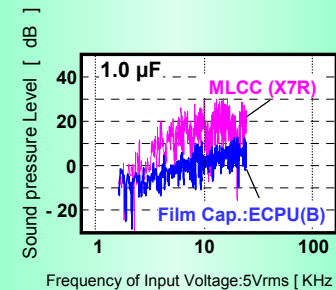
Typically MLCC capacitors generate Shock Noise due to Piezoelectric Effect.
⇒ Film Capacitors do not exhibit this undesirable phenomenon.

(3) Low Third Harmonic Distortion



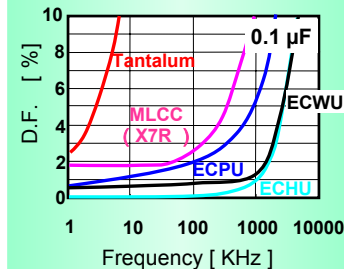
Improves sound quality of audio equipment due to low distortion.

(4) No Audible Noise



Ex: MLCC X7R sometimes generates audible noise (in AC circuits) due to the Piezoelectric Effect.
⇒ Film Capacitors eliminate this problem.

(5) Low Dissipation Factor



Power consumption is reduced due to low dissipation factor.