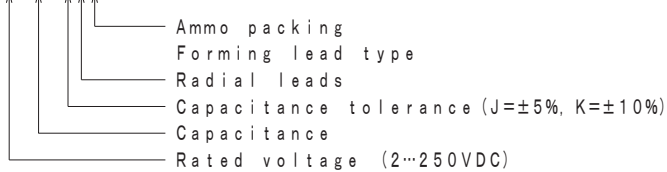


ITEM CODE	RATED VOLTAGE	CAP. (μF)	DIMENSIONS			
			※L	※T	※H	※d
ECQE2103 () F3	250VDC	0.01	10.3	4.3	7.4	0.6
※ 2123 () F3	※	0.012	※	4.4	7.5	※
※ 2153 () F3	※	0.015	※	※	※	※
※ 2183 () F3	※	0.018	※	※	※	※
※ 2223 () F3	※	0.022	※	※	※	※
※ 2273 () F3	※	0.027	※	※	※	※
※ 2333 () F3	※	0.033	※	4.5	※	※
※ 2393 () F3	※	0.039	※	※	※	※
※ 2473 () F3	※	0.047	※	※	※	※
※ 2563 () F3	※	0.056	※	4.8	7.9	※
※ 2683 () F3	※	0.068	※	4.5	7.5	※
※ 2823 () F3	※	0.082	※	4.9	8.0	※
※ 2104 () F3	※	0.1	※	5.8	8.4	※
※ 2124 () F3	※	0.12	※	6.0	9.0	※
※ 2154 () F3	※	0.15	※	※	10.8	※
※ 2184 () F3	※	0.18	12.0	5.0	10.3	※
※ 2224 () F3	※	0.22	※	5.5	10.5	※
※ 2274 () F3	※	0.27	※	6.0	11.5	※

↑ TOL. SYMBOL (J or K)

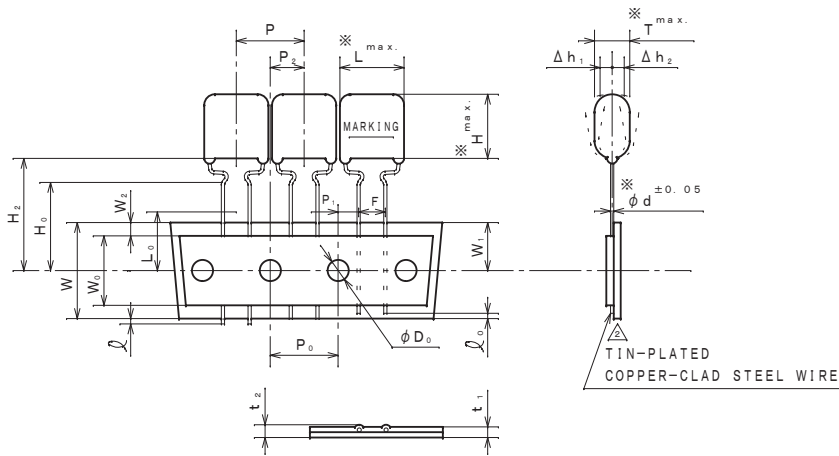
ITEM CODE NUMBER STRUCTURE

ECQE 2103KF3 (250VDC, 0.01μF, ±10%)



ALTERATION		
ISSUE	DESCRIPTION	DATE
△	Company name changed	Oct. 1 2004
△	Company name changed	Apr. 1 2005
△	Company name changed	Apr. 1 2006
△	Correction: category temperature range (-40°C~+85°C→-40°C~+105°C) Addition: rated voltage (Derating of rated voltage by 1.25%/°C at more than 85°C)	Jan. 22 2008
△	Company name changed Error correction	Apr. 1 2008
△	Company name changed	Apr. 1 2012
△	Company name changed	Apr. 1 2013
△	Company name changed	Apr. 1 2015
△	Company name changed	Apr. 1 2022

SPECIFICATIONS No.
TE72028Y



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	12.7±1.0	Tilt of component and curvature of leads shall be included.
P ₂	Feed hole pitch	12.7±0.2	
P ₁	Feed hole center to lead	3.85±0.5	
P ₂	Hole center to comp. center	6.35±1.3	Tilt of component due to curvature of leads shall be included.
F	Lead-to-lead distance	5.0±0.5	
Δh _{1,2}	Component alignment	0~2.0	Tilt of component due to curvature of leads shall be included.
W	Paper backing width	18.0±0.5	
W ₀	Adhesive tape width	9.5min.	The hold down tape shall not protrude beyond the carrier tape.
W ₁	Hole position	9.0±0.5	
W ₂	Hold-down tape position	0~3.0	
H ₂	Component height	22.0±0.75	
H ₀	Lead-wire clinch height	16.0±0.5	
φ	Lead-wire protrusion	0max.	
φ ₀	Lead-wire depression	7.0max.	
φD ₀	Feed hole diameter	4.0±0.2	
t ₁	Total tape thickness	0.7±0.2	Total thickness including the hold down tape.
t ₂	Total thickness	1.5max.	
L ₀	Length of snapped lead	11.0max.	

CONSTRUCTION

The capacitor is of non-inductive construction, wound with metallized polyester film dielectric.
The capacitor is enclosed in non-combustible epoxy resin and has two leads.

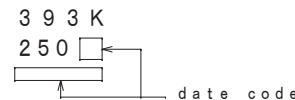
MARKING

Marking comprises capacitance, capacitance tolerance, rated voltage and date code.

PROPERTIES

Capacitance : See table at 1kHz
 Capacitance tolerance : ±5% (J), ±10% (K) at 1kHz
 Rated voltage : 250VDC Δ/∇ (Derating of rated voltage by 1.25%/°C at more than 85°C)
 Withstand voltage : 250VDC×150% for 60s
 Insulation resistance : ≥9000MΩ at 100VDC, 20°C for 60s
 Dissipation factor : ≤1.0% at 1kHz, 20°C
 Category temperature range : Δ From -40°C to +105°C (including temperature rise on unit surface)

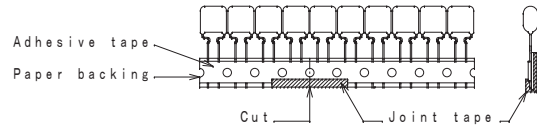
MARKING EXAMPLE



DESIGN	M. MEKADA
CHECKED	T. KATO
APPROVAL	T. KATO
ESTABLISHMENT	Apr. 27, 1987
TYPE NAME	
ECQE2*** () F3	
NAME Metallized Polyester Film Capacitor	
DRAWING NAME	
PRODUCT DRAWING	
DRAWING No.	
CT-H-C013 (1/2)	

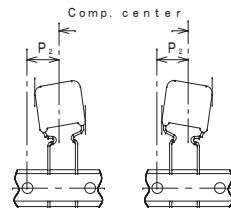
Film Capacitor Business Unit
Device Solutions Business Division
Panasonic Industry Co., Ltd.

- Note 1. No more than 3 consecutive missing is permitted.
- Note 2. A tape conjunction and a tape discrepancy specify as follows.

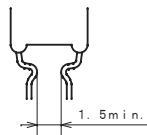


A tape sliding shall not exceed in an allowance of "P₀" dimension.
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- Note 3. Marking on components may not be the same side.
- Note 4. The tape adhesion is more than 3.92N(400gf)/25mm.
- Note 5. A tape trailer having at least 3 feed holes is required at the end of the tape.
- Note 6. 1) The P₁ and P₂ dimension shall be measured as shown in the figure after the adhesive tape placing upward.
 (measuring from the center of sprocket hole to the right.)
 2) The P₂ dimension shall be measured between center of a vertical projection plane for tape plane and center of sprocket hole.

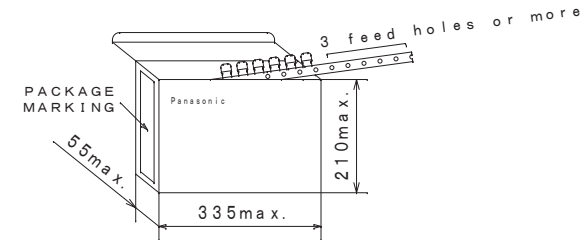


Note 7. The lead crimping shape shows as follows.



Packing specification

1. Case size
Ammo pack



2. Packing quantity

Capacitance range	Packing quantity
0.01~0.082μF	1000
0.1~0.27μF	500

3. Handling notes

- 1) One package must be packed one product only.
- 2) The storage must be stacked 5 boxes or less (surface printed placing upward).
 (For prevention from displacement of capacitors and damage of lead crimping.)
- 3) The packing box must be handled with care and never thrown out.

REFERENCE

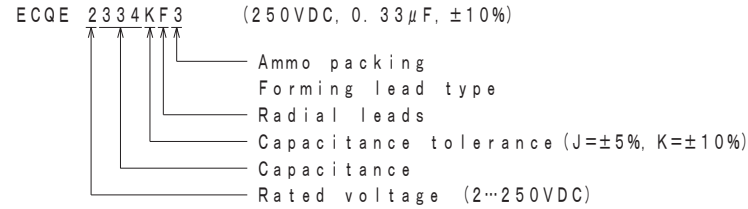
TYPE NAME	ECQE2*** () F3
DRAWING No.	CT-H-C013 (2/2)

Film Capacitor Business Unit
 Device Solutions Business Division
 Panasonic Industry Co., Ltd.

ITEM CODE	RATED VOLTAGE	CAP. (μF)	DIMENSIONS				
			※L	※T	※H	※d	※H ₁
ECQE2334 () F3	250VDC	0.33	12.0	6.5	12.0	0.6	33.5

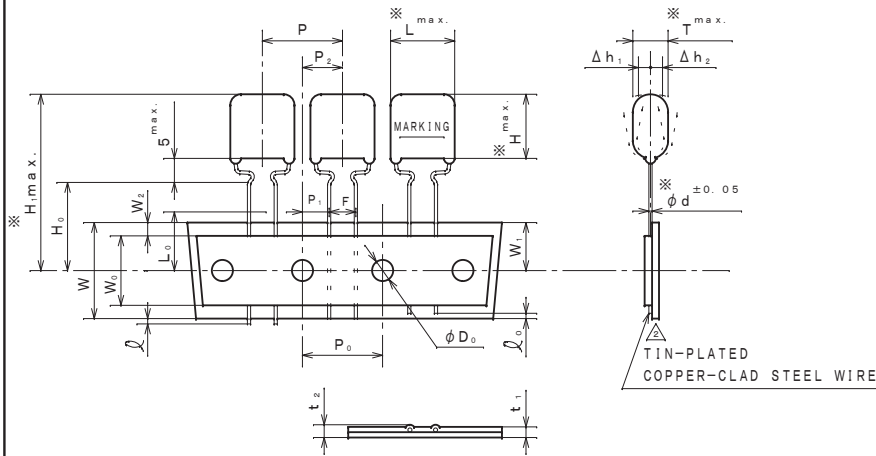
↑ TOL. SYMBOL (J or K)

ITEM CODE NUMBER STRUCTURE



ALTERATION		
ISSUE	DESCRIPTION	DATE
△	Modification	Jun. 20 2002
△	Company name changed	Oct. 1 2004
△	Company name changed	Apr. 1 2005
△	Company name changed	Apr. 1 2006
△	Correction: category temperature range (-40°C~+85°C→-40°C~+105°C) Addition: rated voltage (Derating of rated voltage by 1.25%/°C at more than 85°C)	Jan. 22 2008
△	Company name changed Error correction	Apr. 1 2008
△	Company name changed	Apr. 1 2012
△	Company name changed	Apr. 1 2013
△	Company name changed	Apr. 1 2015
△	Company name changed	Apr. 1 2022

SPECIFICATIONS No.
TE8Y160H



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	15.0±1.0	Tilt of component and curvature of leads shall be included.
P ₂	Feed hole pitch	15.0±0.2	
P ₁	Feed hole center to lead	5.0±0.5	
P ₂	Hole center to comp. center	7.5±1.3	Tilt of component due to curvature of leads shall be included.
F	Lead-to-lead distance	5.0±0.5	
Δh _{1,2}	Component alignment	0~2.0	Tilt of component due to curvature of leads shall be included.
W	Paper backing width	18.0±0.5	
W ₀	Adhesive tape width	9.5min.	The hold down tape shall not protrude beyond the carrier tape.
W ₁	Hole position	9.0±0.5	
W ₂	Hold-down tape position	0~3.0	
H ₂	Lead-wire clinch height	16.0±0.5	
↑	Lead-wire protrusion	0max.	
↓	Lead-wire depression	7.0max.	
φD ₀	Feed hole diameter	4.0±0.2	
t ₁	Total tape thickness	0.7±0.2	Total thickness including the hold down tape.
t ₂	Total thickness	1.5max.	
L ₀	Length of snapped lead	11.0max.	

CONSTRUCTION

The capacitor is of non-inductive construction, wound with metallized polyester film dielectric.
The capacitor is enclosed in non-combustible epoxy resin and has two leads.

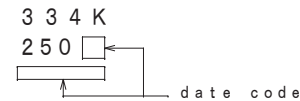
MARKING

Marking comprises capacitance, capacitance tolerance, rated voltage and date code.

PROPERTIES

Capacitance : See table at 1kHz
 Capacitance tolerance : ±5% (J), ±10% (K) at 1kHz
 Rated voltage : 250VDC △ (Derating of rated voltage by 1.25%/°C at more than 85°C)
 Withstand voltage : 250VDC×150% for 60s
 Insulation resistance : ≥9000MΩ at 100VDC, 20°C for 60s
 Dissipation factor : ≤1.0% at 1kHz, 20°C
 Category temperature range : △ From -40°C to +105°C (including temperature rise on unit surface)

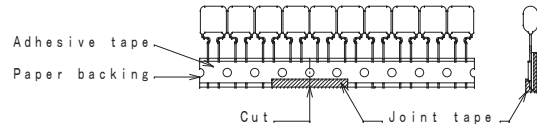
MARKING EXAMPLE



DESIGN	M. MEKADA
CHECKED	T. KATO
APPROVAL	T. KATO
ESTABLISHMENT	Jan. 5, 1994
TYPE NAME	
ECQE2334 () F3	
NAME Metallized Polyester Film Capacitor	
DRAWING NAME	
PRODUCT DRAWING	
DRAWING No.	
CT-H-3B4E (1/2)	

Film Capacitor Business Unit
Device Solutions Business Division
Panasonic Industry Co., Ltd.

- Note 1. No more than 3 consecutive missing is permitted.
- Note 2. A tape conjunction and a tape discrepancy specify as follows.

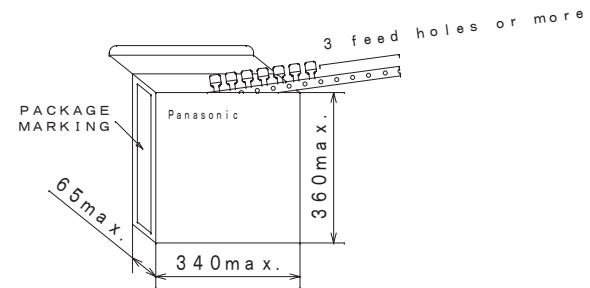


A tape sliding shall not exceed in an allowance of "P₀" dimension.
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- Note 3. Marking on components may not be the same side.
- Note 4. The tape adhesion is more than 3.92N (400gf) / 25mm.
- Note 5. A tape trailer having at least 3 feed holes is required at the end of the tape.

Packing specification

1. Case size
Ammo pack



2. Packing quantity

Capacitance range	Packing quantity
0.33μF	1000

3. Handling notes

- 1) One package must be packed one product only.
- 2) The storage must be stacked 5 boxes or less (surface printed placing upward).
 (For prevention from displacement of capacitors and damage of lead crimping.)
- 3) The packing box must be handled with care and never thrown out.

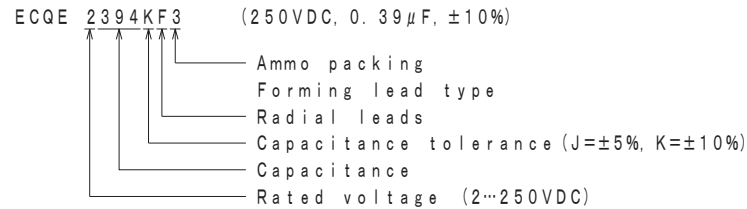
REFERENCE

TYPE NAME	ECQE2334 () F3
DRAWING No.	CT-H-3B4E (2/2)

Film Capacitor Business Unit
 Device Solutions Business Division
 Panasonic Industry Co., Ltd.

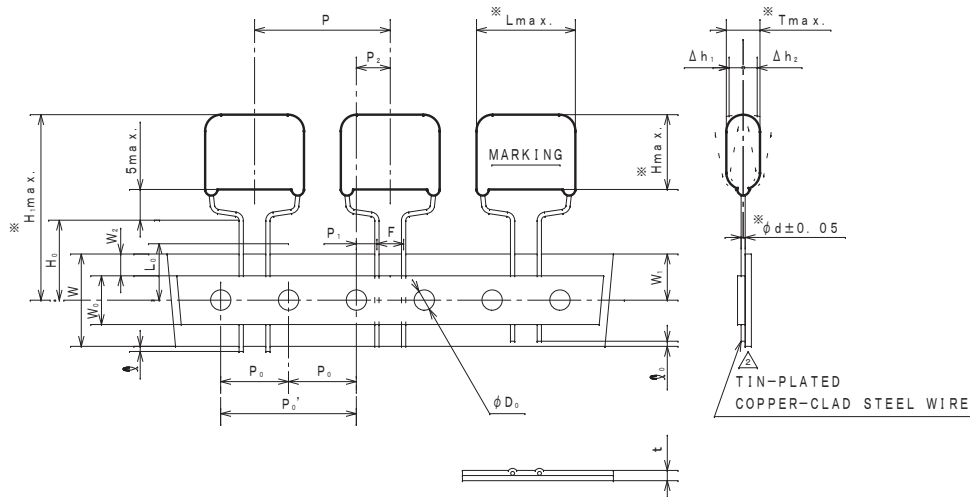
ITEM CODE	RATED VOLTAGE	CAP. (μ F)	DIMENSIONS				
			※ L	※ T	※ H	※ d	※ H ₁
ECQE2394 () F3	250VDC	0.39	18.5	4.9	12.0	0.6	33.5
" 2474 () F3	"	0.47	"	5.3	12.5	"	34.0
" 2564 () F3	"	0.56	"	5.5	13.0	"	34.5
" 2684 () F3	"	0.68	"	6.0	13.5	0.8	35.0
" 2824 () F3	"	0.82	"	6.5	14.5	"	36.0
" 2105 () F3	"	1.0	"	7.4	15.0	"	36.5
" 2125 () F3	"	1.2	"	8.0	15.9	"	37.4
" 2155 () F3	"	1.5	"	9.0	16.8	"	38.3

ITEM CODE NUMBER STRUCTURE



ALTERATION		
ISSUE	DESCRIPTION	DATE
△	Company name changed	Apr. 1 2005
△	Company name changed	Apr. 1 2006
△	Correction: category temperature range (-40°C~+85°C→-40°C~+105°C) Addition: rated voltage (Derating of rated voltage by 1.25%/°C at more than 85°C)	Jan. 22 2008
△	Company name changed Error correction	Apr. 1 2008
△	Company name changed	Apr. 1 2012
△	Company name changed	Apr. 1 2013
△	Company name changed	Apr. 1 2015
△	Company name changed	Apr. 1 2022

SPECIFICATIONS No.
TE88119H



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	25.4 \pm 1.0	Tilt of component and curvature of leads shall be included.
P ₂	Feed hole pitch	12.7 \pm 0.2	
P ₀ '	"	25.4 \pm 0.2	
P ₁	Feed hole center to lead	3.85 \pm 0.5	
P ₂	Hole center to comp. center	6.35 \pm 1.3	Tilt of component due to curvature of leads shall be included.
F	Lead-to-lead distance	5.0 \pm 0.2	
Δh _{1,2}	Component alignment	0~2.0	Tilt of component due to curvature of leads shall be included.
W	Paper backing width	18.0 \pm 0.5	
W ₀	Adhesive tape width	12.5min.	The hold down tape shall not protrude beyond the carrier tape.
W ₁	Hole position	9.0 \pm 0.5	
W ₂	Hold-down tape position	0~3.0	
H ₀	Lead-wire clinch height	16.0 \pm 0.5	
↓	Lead-wire protrusion	0max.	
↑	Lead-wire depression	7.0max.	
φD ₀	Feed hole diameter	4.0 \pm 0.2	
t	Total tape thickness	0.7 \pm 0.2	Total thickness including the hold down tape.
L ₀	Length of snapped lead	11.0max.	

CONSTRUCTION

The capacitor is of non-inductive construction, wound with metallized polyester film dielectric.
The capacitor is enclosed in non-combustible epoxy resin and has two leads.

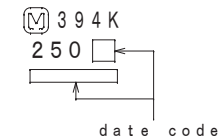
MARKING

Marking comprises capacitance, capacitance tolerance, rated voltage, manufacturer's trademark and date code.

PROPERTIES

Capacitance : See table at 1kHz
 Capacitance tolerance : \pm 5% (J), \pm 10% (K) at 1kHz
 Rated voltage : 250VDC △△ (Derating of rated voltage by 1.25%/°C at more than 85°C)
 Withstand voltage : 250VDC \times 150% for 60s
 Insulation resistance : \geq 3000M Ω · μ F at 100VDC, 20°C for 60s
 Dissipation factor : \leq 1.0% at 1kHz, 20°C
 Category temperature range : △ From -40°C to +105°C (including temperature rise on unit surface)

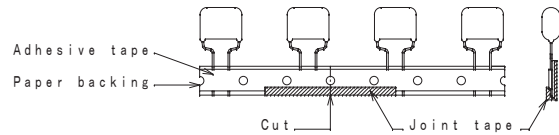
MARKING EXAMPLE



DESIGN	M. MEKADA
CHECKED	T. KATO
APPROVAL	T. KATO
ESTABLISHMENT	Jan. 5, 1994
TYPE NAME	
ECQE2*** () F3	
NAME Metallized Polyester Film Capacitor	
DRAWING NAME	
PRODUCT DRAWING	
DRAWING No.	
CT-H-3B6E (1/2)	

Film Capacitor Business Unit
 Device Solutions Business Division
 Panasonic Industry Co., Ltd.

- Note 1. No more than 2 consecutive missing is permitted.
- Note 2. A tape conjunction and a tape discrepancy specify as follows.

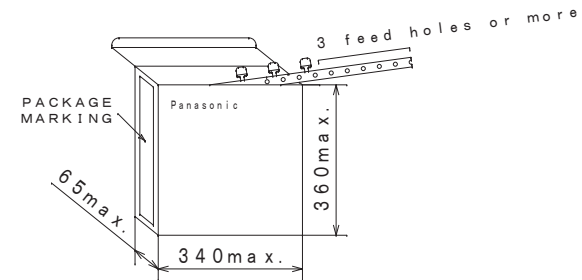


A tape sliding shall not exceed in an allowance of "P₀" dimension.
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- Note 3. Marking on components may not be the same side.
- Note 4. The tape adhesion is more than 3.92N(400gf)/25mm.
- Note 5. A tape trailer having at least 3 feed holes is required at the end of the tape.

Packing specification

1. Case size
Ammo pack



2. Packing quantity

Capacitance range	Packing quantity
0.39~1.2μF	500
1.5μF	400

3. Handling notes

- 1) One package must be packed one product only.
- 2) The storage must be stacked 5 boxes or less (surface printed placing upward).
 (For prevention from displacement of capacitors and damage of lead crimping.)
- 3) The packing box must be handled with care and never thrown out.

REFERENCE

TYPE NAME	ECQE2*** () F3
DRAWING No.	CT-H-3B6E (2/2)

Film Capacitor Business Unit
 Device Solutions Business Division
 Panasonic Industry Co., Ltd.