

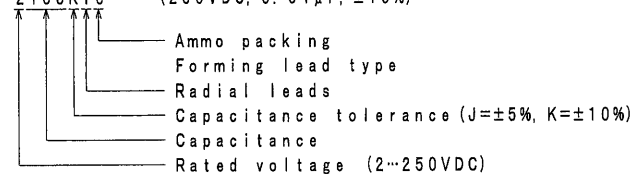
THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. ( $\mu$ F)	DIMENSIONS			
			$\times$ L	$\times$ T	$\times$ H	$\times$ d
ECQE2103 () T3	250VDC	0.01	10.8	4.3	7.4	0.6
" 2123 () T3	"	0.012	"	4.4	7.5	"
" 2153 () T3	"	0.015	"	"	"	"
" 2183 () T3	"	0.018	"	"	"	"
" 2223 () T3	"	0.022	"	"	"	"
" 2273 () T3	"	0.027	"	"	"	"
" 2333 () T3	"	0.033	"	4.5	"	"
" 2393 () T3	"	0.039	"	"	"	"
" 2473 () T3	"	0.047	"	"	"	"
" 2563 () T3	"	0.056	"	4.8	7.9	"
" 2683 () T3	"	0.068	"	4.5	7.5	"
" 2823 () T3	"	0.082	"	4.9	8.0	"
" 2104 () T3	"	0.1	"	5.8	8.4	"
" 2124 () T3	"	0.12	"	6.0	9.0	"
" 2154 () T3	"	0.15	"	"	10.8	"

TOL. SYMBOL (J or K)

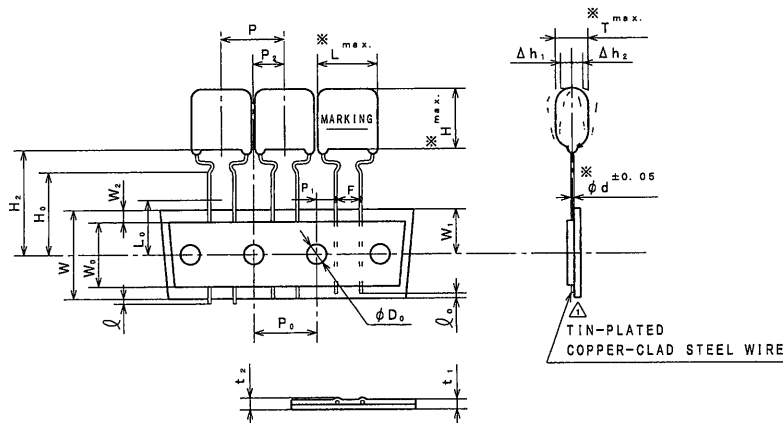
ITEM CODE NUMBER STRUCTURE

ECQE 2103KT3 (250VDC, 0.01 $\mu$ F,  $\pm$ 10%)



ALTERATION		
ISSUE	DESCRIPTION	DATE
$\Delta$ 1	Modification	Jun. 20 2002
$\Delta$ 2	Company name changed	Oct. 1 2004
$\Delta$ 3	Company name changed	Apr. 1 2005
$\Delta$ 4	Company name changed	Apr. 1 2006
$\Delta$ 5	Correction: category temperature range (-40 $^{\circ}$ C~+85 $^{\circ}$ C~40 $^{\circ}$ C~+105 $^{\circ}$ C) Addition: rated voltage (Derating of rated voltage by 1.25%/C at more than 85 $^{\circ}$ C) Company name changed	Apr. 1 2008
$\Delta$ 6	Company name changed	Apr. 1 2012
$\Delta$ 7	Company name changed	Apr. 1 2013
$\Delta$ 8	Company name changed	Apr. 1 2015

SPECIFICATIONS No.



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	12.7 $\pm$ 1.0	Tilt of component and curvature of leads shall be included.
P2	Feed hole pitch	12.7 $\pm$ 0.2	
P1	Feed hole center to lead	3.85 $\pm$ 0.5	
P3	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	
delta h1,2	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	
W2	Adhesive tape width	9.5min.	The hold down tape shall not protrude beyond the carrier tape.
W1	Hole position	9.0 $\pm$ 0.5	
W3	Hold-down tape position	0~3.0	
H2	Component height	22.0 $\pm$ 0.75	
H3	Lead-wire clinch height	16.0 $\pm$ 0.5	
i	Lead-wire protrusion	0max.	
i2	Lead-wire depression	7.0max.	
phi D2	Feed hole diameter	4.0 $\pm$ 0.2	
t1	Total tape thickness	0.7 $\pm$ 0.2	Total thickness including the hold down tape.
t2	Total thickness	1.5max.	
L2	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.

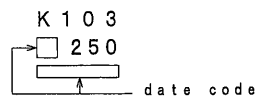
MARKING

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

PROPERTIES

Capacitance : See table at 1kHz  
 Capacitance tolerance :  $\pm$ 5% (J),  $\pm$ 10% (K) at 1kHz  
 Rated voltage : 250VDC  $\Delta$  (Derating of rated voltage by 1.25%/C at more than 85 $^{\circ}$ C)  
 Withstand voltage : 250VDC $\times$ 150% for 60s  
 Insulation resistance :  $\geq$ 9000M $\Omega$  at 100VDC, 20 $^{\circ}$ C for 60s  
 Dissipation factor :  $\leq$ 1.0% at 1kHz, 20 $^{\circ}$ C  
 Category temperature range :  $\Delta$  From -40 $^{\circ}$ C to +105 $^{\circ}$ C  
 (including temperature rise on unit surface)

MARKING EXAMPLE



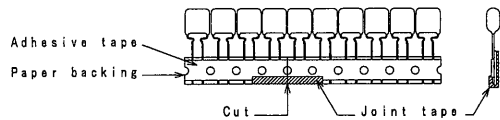
Reference

DESIGN	M. Uchida
CHECKED	K. Osaki
APPROVAL	J. Takata
ESTABLISHMENT	Mar. 7. 2002
TYPE NAME	
ECQE2*** () T3	
NAME Metallized Polyester Film Capacitor	
DRAWING NAME	
PRODUCT DRAWING	
DRAWING No.	
2038M-J-E (1/2)	

Toyama Matsue Plant  
Device Solutions Business Division  
Panasonic Corporation

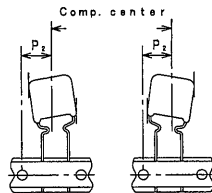
THIRD ANGLE PROJECTION

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

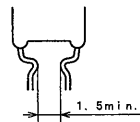


A tape sliding shall not exceed in an allowance of "P<sub>0</sub>" dimension.  
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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 P<sub>1</sub> and P<sub>2</sub> 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 P<sub>2</sub> dimension shall be measured between center of a vertical projection plane for tape plane and center of sprocket hole.

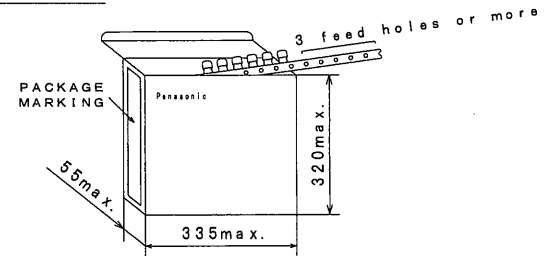


Note 7. The lead crimping shape shows as follows.



Packing specification

1. Case size  
Ammo pack



2. Packing quantity

Capacitance range	Packing quantity
0.01~0.082 $\mu$ F	1500
0.1~0.15 $\mu$ F	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	ECQE2*** () T3
DRAWING No.	2038M-J-E (2/2)

Toyama·Matsue Plant  
 Device Solutions Business Division  
 Panasonic Corporation

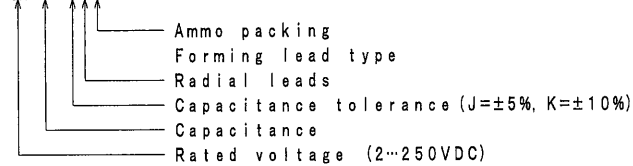
THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. ( $\mu F$ )	DIMENSIONS			
			$\ast L$	$\ast T$	$\ast H$	$\ast d$
ECQE2184 () T3	250VDC	0.18	12.5	5.0	10.3	0.6
" 2224 () T3	"	0.22	"	5.5	10.5	"
" 2274 () T3	"	0.27	"	6.0	11.5	"
" 2334 () T3	"	0.33	"	6.5	12.0	"

TOL. SYMBOL (J or K)

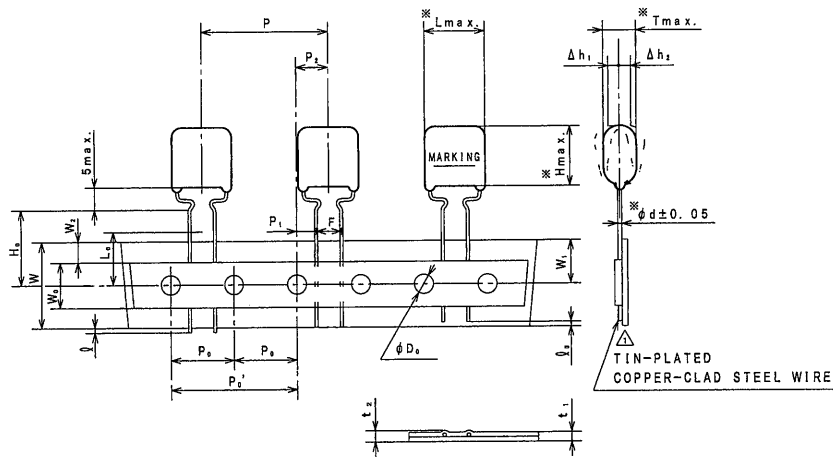
ITEM CODE NUMBER STRUCTURE

ECQE 2184KT3 (250VDC, 0.18 $\mu F$ ,  $\pm 10\%$ )



ALTERATION		
ISSUE	DESCRIPTION	DATE
$\Delta$	Modification	Jun. 20 2002
$\Delta$	Company name changed	Oct. 1 2004
$\Delta$	Company name changed	Apr. 1 2005
$\Delta$	Company name changed	Apr. 1 2006
$\Delta$	Correction: category temperature range (-40 $^{\circ}C$ ~+85 $^{\circ}C$ ~40 $^{\circ}C$ ~+105 $^{\circ}C$ ) Addition: rated voltage (Derating of rated voltage by 1.25%/ $^{\circ}C$ at more than 85 $^{\circ}C$ ) Company name changed	Apr. 1 2008
$\Delta$	Company name changed	Apr. 1 2012
$\Delta$	Company name changed	Apr. 1 2013
$\Delta$	Company name changed	Apr. 1 2015

SPECIFICATIONS No.



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	25.4 $\pm$ 1.0	Tilt of component and curvature of leads shall be included.
P <sub>2</sub>	Feed hole pitch	12.7 $\pm$ 0.2	
P <sub>2</sub> '	"	25.4 $\pm$ 0.2	
P <sub>1</sub>	Feed hole center to lead	3.85 $\pm$ 0.5	
P <sub>2</sub>	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	
$\Delta h_{1,2}$	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 <sub>2</sub>	Adhesive tape width	12.5min.	The hold down tape shall not protrude beyond the carrier tape.
W <sub>1</sub>	Hole position	9.0 $\pm$ 0.5	
W <sub>2</sub>	Hold-down tape position	0~3.0	
H <sub>2</sub>	Lead-wire clinch height	16.0 $\pm$ 0.5	
t	Lead-wire protrusion	0max.	
t <sub>2</sub>	Lead-wire depression	7.0max.	
$\phi D_2$	Feed hole diameter	4.0 $\pm$ 0.2	
t <sub>1</sub>	Total tape thickness	0.7 $\pm$ 0.2	Total thickness including the hold down tape.
t <sub>2</sub>	Total thickness	1.5max.	
L <sub>2</sub>	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.

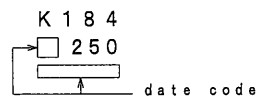
MARKING

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

PROPERTIES

Capacitance : See table at 1kHz  
 Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K) at 1kHz  
 Rated voltage : 250VDC  $\Delta$  (Derating of rated voltage by 1.25%/ $^{\circ}C$  at more than 85 $^{\circ}C$ )  
 Withstand voltage : 250VDC $\times 150\%$  for 60s  
 Insulation resistance :  $\geq 90000M\Omega$  at 100VDC, 20 $^{\circ}C$  for 60s  
 Dissipation factor :  $\leq 1.0\%$  at 1kHz, 20 $^{\circ}C$   
 Category temperature range :  $\Delta$  From -40 $^{\circ}C$  to +105 $^{\circ}C$   
 (including temperature rise on unit surface)

MARKING EXAMPLE

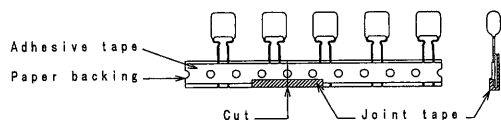


Reference

DESIGN	<i>M. Asakura</i>
CHECKED	<i>R. Osaki</i>
APPROVAL	<i>Y. Taketa</i>
ESTABLISHMENT	Mar. 7. 2002
TYPE NAME	
ECQE2*** () T3	
NAME Metallized Polyester	
Film Capacitor	
DRAWING NAME	
PRODUCT DRAWING	
DRAWING No.	
2039M-J-E (1/2)	

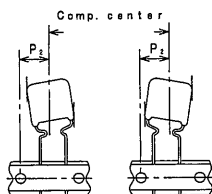
Toyama-Matsue Plant  
 Device Solutions Business Division  
 Panasonic Corporation

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

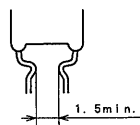


A tape sliding shall not exceed in an allowance of "P<sub>2</sub>" dimension. A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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 P<sub>1</sub> and P<sub>2</sub> 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 P<sub>2</sub> dimension shall be measured between center of a vertical projection plane for tape plane and center of sprocket hole.

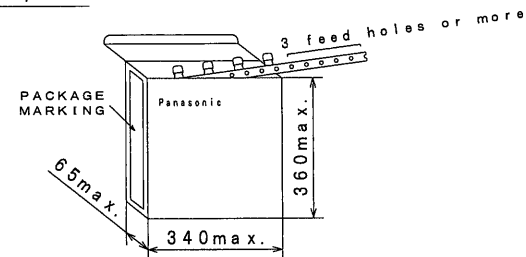


Note 7. The lead crimping shape shows as follows.



Packing specification

1. Case size  
Ammo pack



2. Packing quantity

Capacitance range	Packing quantity
0.18, 0.22μF	800
0.27μF	700
0.33μF	600

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**

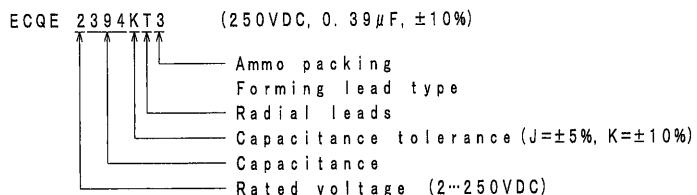
TYP. NAME	ECQE2*** () T3
DRAWING No.	2039M-J-E (2/2)

Toyama-Matsue Plant  
Device Solutions Business Division  
Panasonic Corporation

THIRD ANGLE PROJECTION

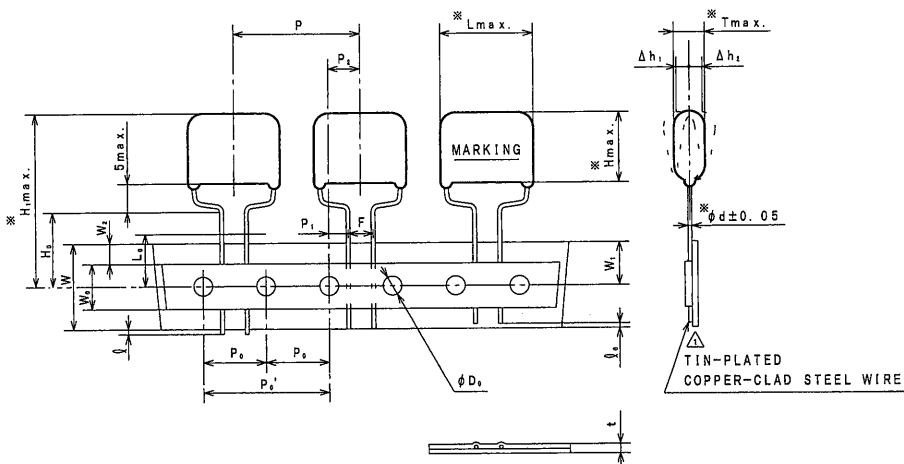
ITEM CODE	RATED VOLTAGE	CAP. ( $\mu F$ )	DIMENSIONS				
			$\times L$	$\times T$	$\times H$	$\times d$	$\times H_1$
ECQE2394 () T3	250VDC	0.39	19.0	4.9	12.0	0.6	33.5
" 2474 () T3	"	0.47	"	5.3	12.5	"	34.0
" 2564 () T3	"	0.56	"	5.5	13.0	"	34.5
" 2684 () T3	"	0.68	"	6.0	13.5	0.8	35.0
" 2824 () T3	"	0.82	"	6.5	14.5	"	36.0
" 2105 () T3	"	1.0	"	7.4	15.0	"	36.5
" 2125 () T3	"	1.2	"	8.0	15.9	"	37.4
" 2155 () T3	"	1.5	"	9.0	16.8	"	38.3

ITEM CODE NUMBER STRUCTURE



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

SPECIFICATIONS No.



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	25.4 $\pm$ 1.0	Tilt of component and curvature of leads shall be included.
P <sub>o</sub>	Feed hole pitch	12.7 $\pm$ 0.2	
P <sub>o</sub> '	"	25.4 $\pm$ 0.2	
P <sub>1</sub>	Feed hole center to lead	3.85 $\pm$ 0.5	
P <sub>2</sub>	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	
$\Delta h_{1,1}$	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 <sub>o</sub>	Adhesive tape width	12.5min.	The hold down tape shall not protrude beyond the carrier tape.
W <sub>1</sub>	Hole position	9.0 $\pm$ 0.5	
W <sub>2</sub>	Hold-down tape position	0~3.0	
H <sub>o</sub>	Lead-wire clinch height	16.0 $\pm$ 0.5	
l	Lead-wire protrusion	0max.	
l <sub>o</sub>	Lead-wire depression	7.0max.	
$\phi D_2$	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 <sub>o</sub>	Length of snipped 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.

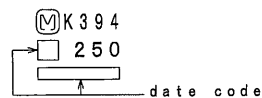
MARKING

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  $\triangle$  (Derating of rated voltage by 1.25%/°C at more than 85°C)
- Withstand voltage : 250VDC $\times$ 150% for 60s
- Insulation resistance :  $\geq 3000\Omega \cdot \mu F$  at 100VDC, 20°C for 60s
- Dissipation factor :  $\leq 1.0\%$  at 1kHz, 20°C
- Category temperature range :  $\triangle$  From -40°C to +105°C (including temperature rise on unit surface)

MARKING EXAMPLE

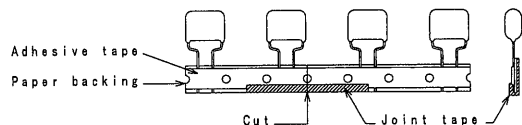


Reference

DESIGN	<i>Ch. Anzai</i>
CHECKED	<i>R. Oishi</i>
APPROVAL	<i>Y. Takata</i>
ESTABLISHMENT	Mar. 7. 2002
TYPE NAME	
ECQE2*** () T3	
NAME Metallized Polyester Film Capacitor	
DRAWING NAME	
PRODUCT DRAWING	
DRAWING No.	
2040M-J-E (1/2)	

Toyama-Matsue Plant  
Device Solutions Business Division  
Panasonic Corporation

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

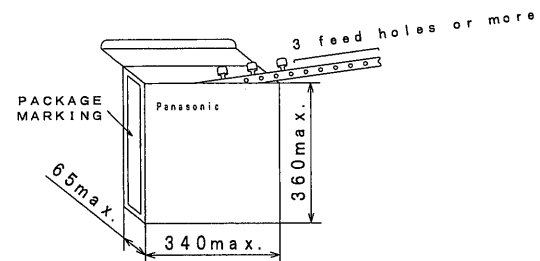


A tape sliding shall not exceed in an allowance of "P<sub>0</sub>" dimension.  
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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, 0.56 $\mu$ F	800
0.47, 0.68 $\mu$ F	700
0.82 $\mu$ F	600

Capacitance range	Packing quantity
1.0, 1.2 $\mu$ F	500
1.5 $\mu$ F	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**

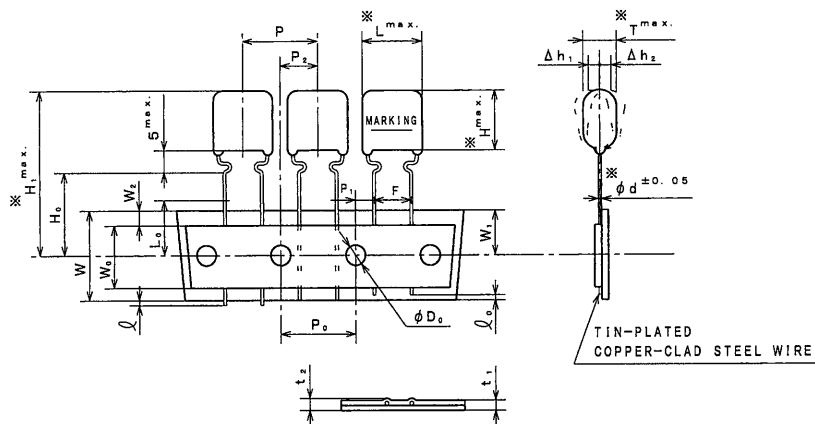
TYPE NAME  
 ECQE2\*\*\* () T3  
 DRAWING No.  
 2040M-J-E (2/2)

Toyama-Matsue Plant  
 Device Solutions Business Division  
 Panasonic Corporation

THIRD ANGLE PROJECTION

ITEM CODE	CAP. ( $\mu$ F)	DIMENSIONS				
		$\times$ L	$\times$ T	$\times$ H	$\times$ d	$\times$ H <sub>1</sub>
ECQE2103R ( ) T	0.01	10.8	4.3	7.4	0.6	29.4
" 2123R ( ) T	0.012	"	4.4	7.5	"	29.5
" 2153R ( ) T	0.015	"	"	"	"	"
" 2183R ( ) T	0.018	"	"	"	"	"
" 2223R ( ) T	0.022	"	"	"	"	"
" 2273R ( ) T	0.027	"	"	"	"	"
" 2333R ( ) T	0.033	"	4.5	"	"	"
" 2393R ( ) T	0.039	"	"	"	"	"
" 2473R ( ) T	0.047	"	"	"	"	"
" 2563R ( ) T	0.056	"	4.9	7.9	"	29.9
" 2683R ( ) T	0.068	"	4.5	7.5	"	29.5
" 2823R ( ) T	0.082	"	4.9	8.0	"	30.0
" 2104R ( ) T	0.1	"	5.8	8.4	"	30.4
" 2124R ( ) T	0.12	"	6.0	9.0	"	31.0
" 2154R ( ) T	0.15	"	"	10.8	"	32.8
" 2184R ( ) T	0.18	12.5	5.0	10.3	"	32.3
" 2224R ( ) T	0.22	"	5.5	10.5	"	32.5
" 2274R ( ) T	0.27	"	6.0	11.5	"	33.5
" 2334R ( ) T	0.33	"	6.5	12.0	"	34.0

TOL. SYMBOL (J or K)



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

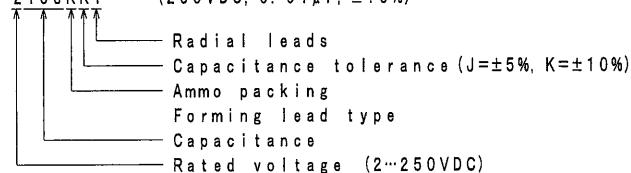
Marking comprises capacitance, capacitance tolerance, rated voltage and date code.

PROPERTIES

Capacitance : See table at 1kHz  
 Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K) at 1kHz  
 Rated voltage : 250VDC  $\Delta$  (Derating of rated voltage by 1.25%/C at more than 85C)  
 Withstand voltage : 250VDC  $\times 150\%$  for 60s  
 Insulation resistance :  $\geq 9000M\Omega$  at 100VDC, 20C for 60s  
 Dissipation factor :  $\leq 1.0\%$  at 1kHz, 20C  
 Category temperature range :  $\Delta$  From -40C to +105C (including temperature rise on unit surface)

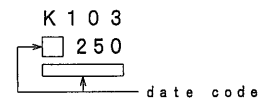
ITEM CODE NUMBER STRUCTURE

ECQE 2103RKT (250VDC, 0.01 $\mu$ F,  $\pm 10\%$ )



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	15.0 $\pm$ 1.0	Tilt of component and curvature of leads shall be included.
P <sub>2</sub>	Feed hole pitch	15.0 $\pm$ 0.2	
P <sub>1</sub>	Feed hole center to lead	3.75 $\pm$ 0.5	
P <sub>2</sub>	Hole center to comp. center	7.5 $\pm$ 1.3	Tilt of component due to curvature of leads shall be included.
F	Lead-to-lead distance	7.5 $\pm$ 0.5	
$\Delta$ h <sub>1,2</sub>	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 <sub>1</sub>	Adhesive tape width	9.5min.	The hold down tape shall not protrude beyond the carrier tape.
W <sub>2</sub>	Hole position	9.0 $\pm$ 0.5	
W <sub>2</sub>	Hold-down tape position	0~3.0	
H <sub>2</sub>	Lead-wire clinch height	16.0 $\pm$ 0.5	
l	Lead-wire protrusion	0max.	
l <sub>0</sub>	Lead-wire depression	7.0max.	
$\phi$ D <sub>0</sub>	Feed hole diameter	4.0 $\pm$ 0.2	
t <sub>1</sub>	Total tape thickness	0.7 $\pm$ 0.2	Total thickness including the hold down tape.
t <sub>2</sub>	Total thickness	1.5max.	
L <sub>0</sub>	Length of snipped lead	11.0max.	

MARKING EXAMPLE



ALTERATION

ISSUE	DESCRIPTION	DATE
$\Delta$ 1	Company name changed	Apr. 1 2005
$\Delta$ 2	Company name changed	Apr. 1 2006
$\Delta$ 3	Correction: category temperature range (-25C~+85C~+105C) Addition: rated voltage (Derating of rated voltage by 1.25%/C at more than 85C) Company name changed	Apr. 1 2008
$\Delta$ 4	Company name changed	Apr. 1 2012
$\Delta$ 5	Company name changed	Apr. 1 2013
$\Delta$ 6	Company name changed	Apr. 1 2015

SPECIFICATIONS No.

Reference

DESIGN	<i>Sh. M. Kudo</i>
CHECKED	<i>Z. Osaka</i>
APPROVAL	<i>Y. Takata</i>
ESTABLISHMENT	Jan. 13. 2005
TYPE NAME	ECQE2***R ( ) T
NAME	Metallized Polyester Film Capacitor
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	5002M-J-E (1/2)

Toyama Matsue Plant  
Device Solutions Business Division  
Panasonic Corporation

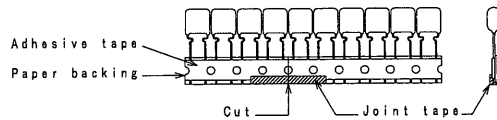
DO NOT SCALE DRAWING

REVISIONS INDICATED BY  $\Delta$

ALL DIMENSIONS ARE IN MILLIMETERS

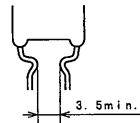
THIRD ANGLE PROJECTION

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



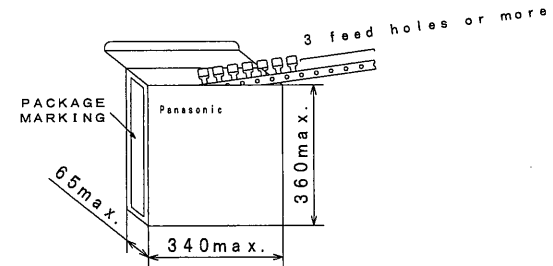
A tape sliding shall not exceed in an allowance of "P<sub>0</sub>" dimension.  
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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. The lead crimping shape shows as follows.



### Packing specification

#### 1. Case size Ammo pack



#### 2. Packing quantity

Capacitance range	Packing quantity	Capacitance range	Packing quantity
0.01 $\mu$ F	1800	0.18 $\mu$ F	1400
0.012~0.047 $\mu$ F	1700	0.1, 0.22 $\mu$ F	1300
0.068 $\mu$ F	1600	0.12, 0.15 $\mu$ F	1200
0.056 $\mu$ F	1600	0.27 $\mu$ F	1100
0.082 $\mu$ F	1500	0.33 $\mu$ F	1100

#### 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***R () T
DRAWING No.	5002M-J-E (2/2)

Toyama-Matsue Plant  
 Device Solutions Business Division  
 Panasonic Corporation



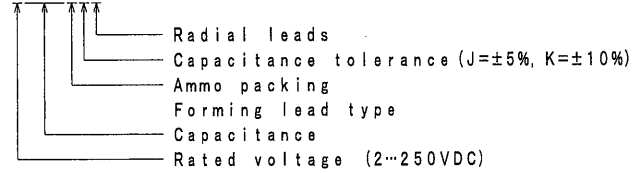
THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. ( $\mu$ F)	DIMENSIONS				
			*L	*T	*H	*d	*H <sub>1</sub>
ECQE2394R () T	250VDC	0.39	19.0	4.9	12.0	0.6	34.0
" 2474R () T	"	0.47	"	5.3	12.5	"	34.5
" 2564R () T	"	0.56	"	5.5	13.0	"	35.0
" 2684R () T	"	0.68	"	6.0	13.5	0.8	35.5
" 2824R () T	"	0.82	"	6.5	14.5	"	36.5
" 2105R () T	"	1.0	"	7.4	15.0	"	37.0
" 2125R () T	"	1.2	"	8.0	15.9	"	37.9
" 2155R () T	"	1.5	"	9.0	16.8	"	38.8

TOL. SYMBOL (J or K)

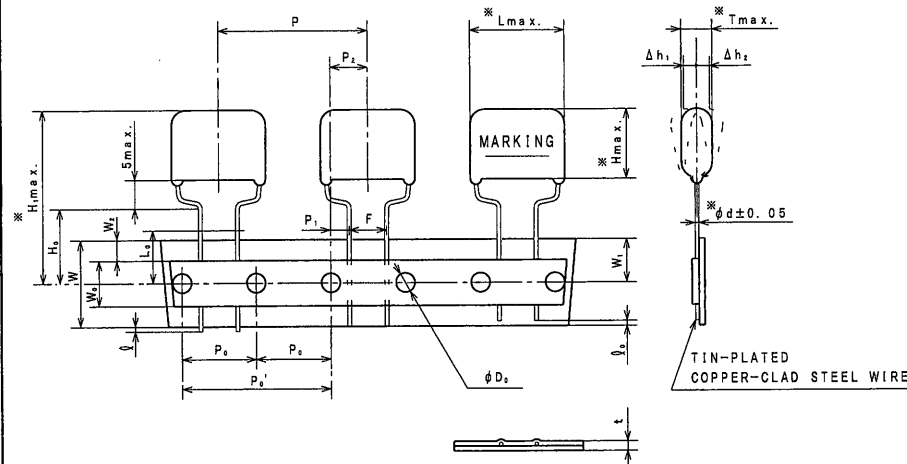
ITEM CODE NUMBER STRUCTURE

ECQE 2394RKT (250VDC, 0.39 $\mu$ F,  $\pm$ 10%)



ALTERATION		
ISSUE	DESCRIPTION	DATE
△1	Company name changed	Apr. 1 2012
△2	Company name changed	Apr. 1 2013
△3	Company name changed	Apr. 1 2016

SPECIFICATIONS No.



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	30.0 $\pm$ 1.0	Tilt of component and curvature of leads shall be included.
P <sub>0</sub>	Feed hole pitch	30.0 $\pm$ 0.2	
P <sub>1</sub>	"	15.0 $\pm$ 0.2	
P <sub>2</sub>	Feed hole center to lead	3.75 $\pm$ 0.5	
P <sub>2</sub>	Hole center to comp. center	7.5 $\pm$ 1.3	Tilt of component due to curvature of leads shall be included.
F	Lead-to-lead distance	7.5 $\pm$ 0.2	
$\Delta$ h <sub>1,2</sub>	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 <sub>0</sub>	Adhesive tape width	12.5min.	The hold down tape shall not protrude beyond the carrier tape.
W <sub>1</sub>	Hole position	9.0 $\pm$ 0.5	
W <sub>2</sub>	Hold-down tape position	0~3.0	
H <sub>c</sub>	Lead-wire clinch height	16.0 $\pm$ 0.9	
f	Lead-wire protrusion	0max.	
f <sub>0</sub>	Lead-wire depression	7.0max.	
$\phi$ D <sub>0</sub>	Feed hole diameter	4.0 $\pm$ 0.2	
t	Total tape thickness	0.7 $\pm$ 0.2	Total thickness including the hold down taps.
L <sub>0</sub>	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.

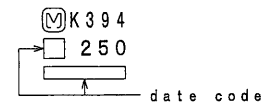
MARKING

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%/ $^{\circ}$ C at more than 85 $^{\circ}$ C)  
 Withstand voltage : 250VDC $\times$ 150% for 60s  
 Insulation resistance :  $\geq$ 3000M $\Omega$  $\cdot$  $\mu$ F at 100VDC, 20 $^{\circ}$ C for 60s  
 Dissipation factor :  $\leq$ 1.0% at 1kHz, 20 $^{\circ}$ C  
 Category temperature range : From -40 $^{\circ}$ C to +105 $^{\circ}$ C  
 (including temperature rise on unit surface)

MARKING EXAMPLE



Reference

DESIGN	<i>M. Arakawa</i>
CHECKED	<i>K. Otsuki</i>
APPROVAL	<i>Y. Takata</i>
ESTABLISHMENT	Sep. 24, 2008
TYPE NAME	
ECQE2***R () T	
NAME Metallized Polyester Film Capacitor	
DRAWING NAME	
PRODUCT DRAWING	
DRAWING No.	
8061M-J-E (1/2)	

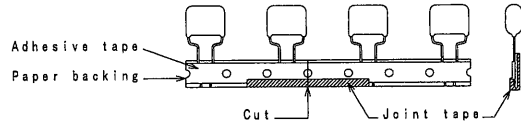
Toyama-Matsue Plant  
Device Solutions Business Division  
Panasonic Corporation

DO NOT SCALE DRAWING

REVISIONS INDICATED BY  $\Delta$

ALL DIMENSIONS ARE IN MILLIMETERS

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

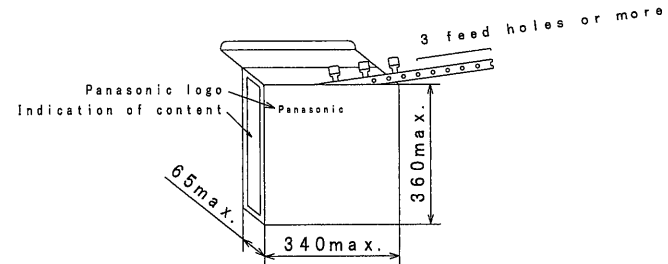


A tape sliding shall not exceed in an allowance of "P<sub>0</sub>" dimension.  
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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 $\mu$ F	700
0.47~0.68 $\mu$ F	600
0.82 $\mu$ F	500
1.0~1.5 $\mu$ F	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***R () T
DRAWING No.	8061M-J-E (2/2)

Toyama-Matsue Plant  
 Device Solutions Business Division  
 Panasonic Corporation