

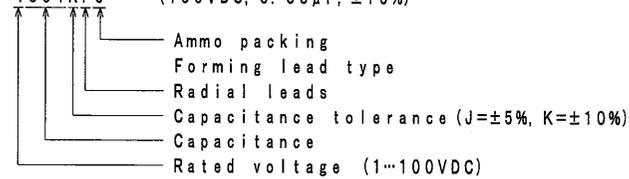
THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. (μF)	DIMENSIONS			
			$\times L$	$\times T$	$\times H$	$\times d$
ECQE1564 () F3	100VDC	0.56	12.0	5.5	10.9	0.6
" 1684 () F3	"	0.68	"	6.0	11.9	"

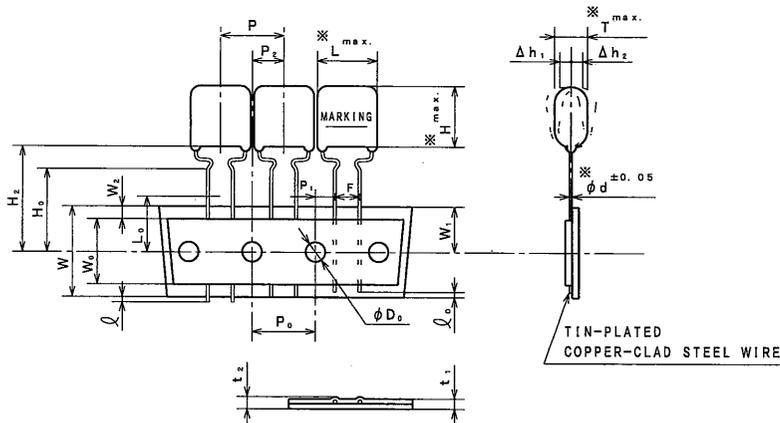
TOL. SYMBOL (J or K)

ITEM CODE NUMBER STRUCTURE

ECQE 1564KF3 (100VDC, 0.56 μF , $\pm 10\%$)



ALTERATION		
ISSUE	DESCRIPTION	DATE
\triangle	Company name changed	Apr. 1 2006
\triangle	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 $^{\circ}C$)	Jan. 22 2008
\triangle	Company name changed Error correction	Apr. 1 2008
\triangle	Company name changed	Apr. 1 2012
\triangle	Company name changed	Apr. 1 2013
\triangle	Company name changed	Apr. 1 2016
SPECIFICATIONS No. TEB7175H		



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	12.7 \pm 1.0	Tilt of component and curvature of leads shall be included.
P ₀	Feed hole pitch	12.7 \pm 0.2	
P ₁	Feed hole center to lead	3.85 \pm 0.5	
P ₂	Hole center to comp. center	6.85 \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 ₀	Adhesive tape width	9.5min.	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	Component height	22.0 \pm 0.75	
H ₀	Lead-wire clinch height	16.0 \pm 0.5	
f	Lead-wire protrusion	0max.	
ϕD	Lead-wire depression	7.0max.	
ϕD_0	Feed hole diameter	4.0 \pm 0.2	
t ₁	Total tape thickness	0.7 \pm 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.

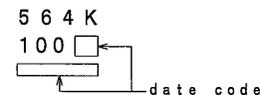
MARKING

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

PROPERTIES

Capacitance : See table at 1kHz
 Capacitance tolerance : $\pm 5\%$ (J), $\pm 10\%$ (K) at 1kHz
 Rated voltage : 100VDC \triangle (Derating of rated voltage by 1.25%/ $^{\circ}C$ at more than 85 $^{\circ}C$)
 Withstand voltage : 100VDC $\times 150\%$ 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 : \triangle From -40 $^{\circ}C$ to +105 $^{\circ}C$
 (including temperature rise on unit surface)

MARKING EXAMPLE



Reference

DESIGN	<i>M. Anabara</i>
CHECKED	<i>R. Osaki</i>
APPROVAL	<i>Y. Takata</i>
ESTABLISHMENT	Dec. 5. 2005
TYPE NAME	ECQE1*** () F3
NAME	Metallized Polyester Film Capacitor
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	5086M-J-E (1/2)

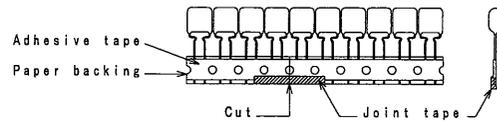
Toyama-Matsue Plant
 Device Solutions Business Division
 Panasonic Corporation

DO NOT SCALE DRAWING

REVISIONS INDICATED BY \triangle

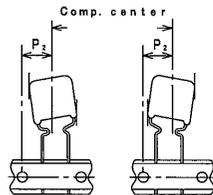
ALL DIMENSIONS ARE IN MILLIMETERS

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

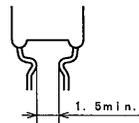


A tape sliding shall not exceed in an allowance of "P₂" dimension.
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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.

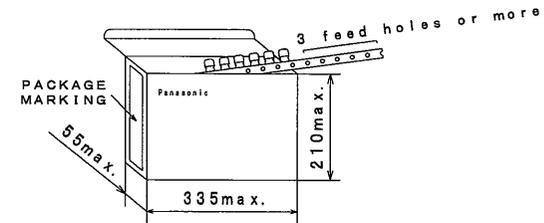


- Note 7. The lead crimping shape shows as follows.



Packing specification

1. Case size
Ammo pack



2. Packing quantity

Capacitance range	Packing quantity
0.56~0.68μF	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	ECQE1*** () F3
DRAWING No.	5086M-J-E (2/2)

Toyama-Matsue Plant
 Device Solutions Business Division
 Panasonic Corporation

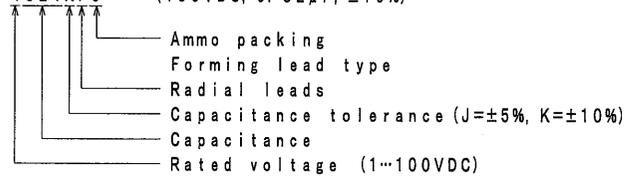
THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. (μ F)	DIMENSIONS				
			\times L	\times T	\times H	\times d	\times H ₁
ECQE1824 () F3	100VDC	0.82	12.0	6.0	13.5	0.6	35.0
" 1105 () F3	"	1.0	"	6.7	14.0	"	35.5

TOL. SYMBOL (J or K)

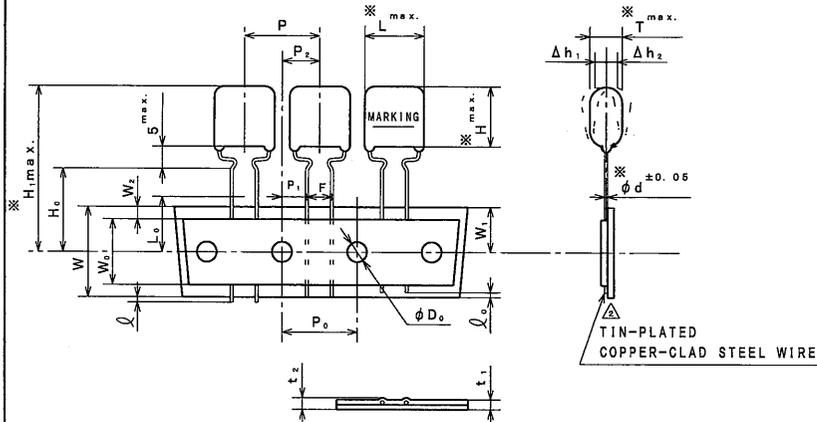
ITEM CODE NUMBER STRUCTURE

ECQE 1824KF3 (100VDC, 0.82 μ F, \pm 10%)



ALTERATION		
ISSUE	DESCRIPTION	DATE
△1	Modification	Jun. 20 2002
△2	Company name changed	Oct. 1 2004
△3	Company name changed	Apr. 1 2005
△4	Company name changed	Apr. 1 2006
△5	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)	Jan. 22 2008
△7	Company name changed Error correction	Apr. 1 2008
△8	Company name changed	Apr. 1 2012
△9	Company name changed	Apr. 1 2013
△10	Company name changed	Apr. 1 2015

SPECIFICATIONS No.
TEB7176H



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	15.0 \pm 1.0	Tilt of component and curvature of leads shall be included.
P ₀	Feed hole pitch	15.0 \pm 0.2	
P ₁	Feed hole center to lead	5.0 \pm 0.5	
P ₂	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	5.0 \pm 0.2	
Δ 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 ₀	Adhesive tape width	9.5min.	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	
l	Lead-wire protrusion	0max.	
l _e	Lead-wire depression	7.0max.	
ϕ D ₀	Feed hole diameter	4.0 \pm 0.2	
t ₁	Total tape thickness	0.7 \pm 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.

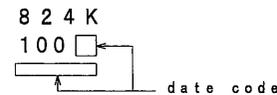
MARKING

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

PROPERTIES

Capacitance : See table at 1kHz
 Capacitance tolerance : \pm 5% (J), \pm 10% (K) at 1kHz
 Rated voltage : 100VDC (Derating of rated voltage by 1.25%/°C at more than 85°C)
 Withstand voltage : 100VDC \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

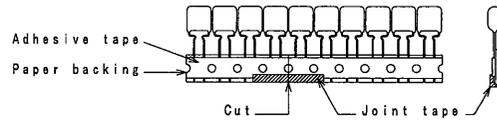


Reference

DESIGN	M. Takahashi
CHECKED	K. Osaki
APPROVAL	Y. Takata
ESTABLISHMENT	Mar. 20, 1991
TYPE NAME	ECQE1*** () F3
NAME	Metallized Polyester Film Capacitor
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	CT-H-112E (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.

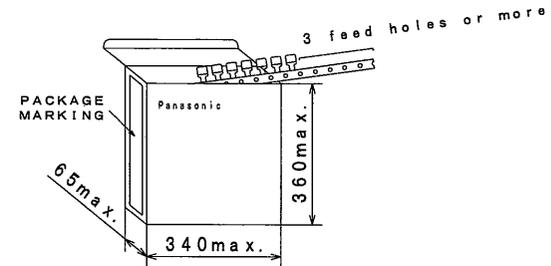


A tape sliding shall not exceed in an allowance of "P₂" dimension.
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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
0.82, 1.0μF	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	ECQE1*** () F3
DRAWING No.	CT-H-112E (2/2)

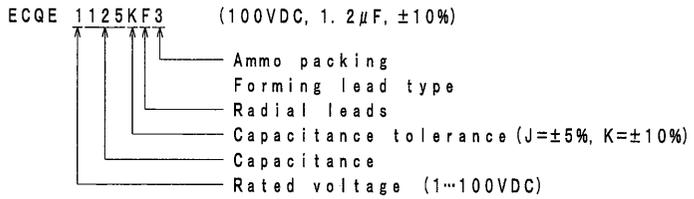
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 Device Solutions Business Division
 Panasonic Corporation

THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. (μ F)	DIMENSIONS				
			* L	* T	* H	* d	* H ₁
ECQE1125 () F3	100VDC	1.2	18.5	5.5	12.8	0.6	34.3
" 1155 () F3	"	1.5	"	6.0	13.4	0.8	34.9
" 1185 () F3	"	1.8	"	6.5	14.4	"	35.9
" 1225 () F3	"	2.2	"	7.0	15.0	"	36.5
" 1275 () F3	"	2.7	"	8.0	15.8	"	37.3
" 1335 () F3	"	3.3	"	8.5	16.5	"	38.0

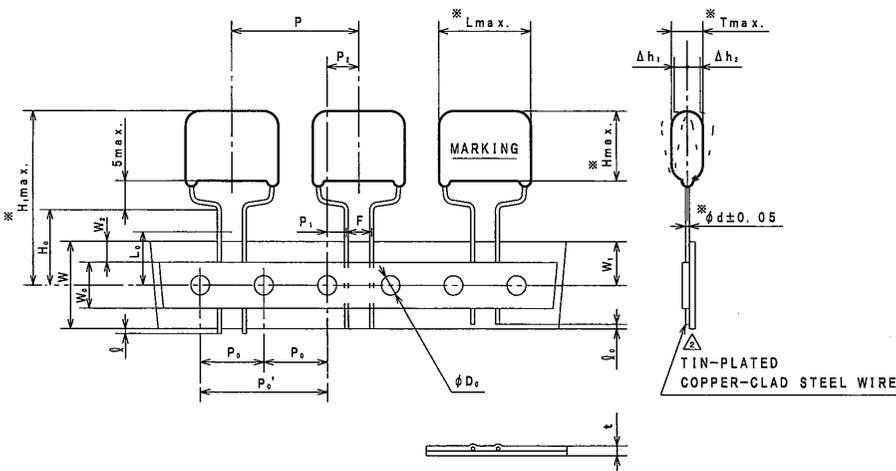
* TOL. SYMBOL (J or K)

ITEM CODE NUMBER STRUCTURE



ALTERATION		
ISSUE	DESCRIPTION	DATE
3	Company name changed	Oct. 1 2004
4	Company name changed	Apr. 1 2005
5	Company name changed	Apr. 1 2006
6	Correction: category temperature range (-40 $^{\circ}$ C~+85 $^{\circ}$ C~+105 $^{\circ}$ C) Addition: rated voltage (Derating of rated voltage by 1.25%/ $^{\circ}$ C at more than 85 $^{\circ}$ C)	Jan. 22 2008
7	Company name changed Error correction	Apr. 1 2008
8	Company name changed	Apr. 1 2012
9	Company name changed	Apr. 1 2013
10	Company name changed	Apr. 1 2015

SPECIFICATIONS No. TEB7177H



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 ₂ '	"	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 0.5	
Δ h _{1,2}	Component alignment	0 \sim 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 \sim 3.0	
H ₀	Lead-wire clinch height	16.0 \pm 0.5	
l	Lead-wire protrusion	0max.	
l ₀	Lead-wire depression	7.0max.	
ϕ D 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.

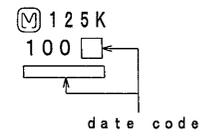
MARKING

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

MARKING EXAMPLE

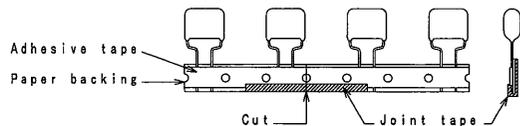


Reference

DESIGN	<i>M. Mochida</i>
CHECKED	<i>Z. Osaki</i>
APPROVAL	<i>Y. Takata</i>
ESTABLISHMENT	Mar. 20, 1991
TYPE NAME	
ECQE1*** () F3	
NAME Metallized Polyester Film Capacitor	
DRAWING NAME	
PRODUCT DRAWING	
DRAWING No.	
CT-H-113E (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.

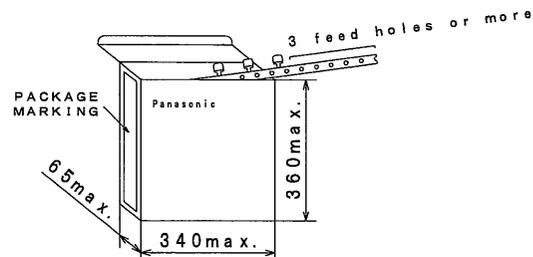


A tape sliding shall not exceed in an allowance of "P₀" dimension.
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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
1. 2~2.7 μ F	500
3. 3 μ 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	ECQE1*** () F3
DRAWING No.	CT-H-113E (2/2)

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 Panasonic Corporation