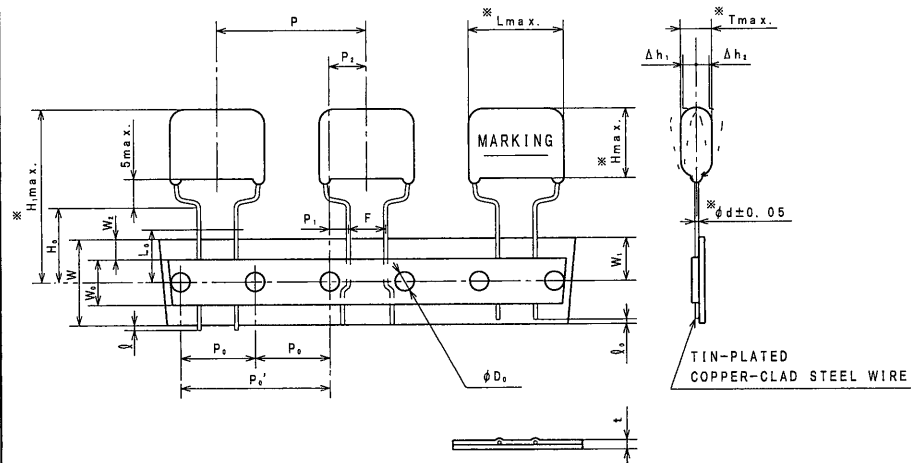


THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. (μF)	DIMENSIONS				
			*L	*T	*H	*d	*H <sub>1</sub>
ECQE2A563 () T3	250VAC	0.056	19.0	5.4	10.5	0.6	32.5
" 2A683 () T3	"	0.068	"	5.8	11.0	"	33.0
" 2A823 () T3	"	0.082	"	6.3	12.0	"	34.0
" 2A104 () T3	"	0.1	"	"	14.0	"	36.0
" 2A124 () T3	"	0.12	"	6.8	14.5	0.8	36.5
" 2A154 () T3	"	0.15	"	7.5	15.4	"	37.4
" 2A184 () T3	"	0.18	"	8.0	16.0	"	38.0
" 2A224 () T3	"	0.22	"	9.0	16.9	"	38.9

TOL. SYMBOL (J or K or M)



ITEM CODE NUMBER STRUCTURE

ECQE 2A563KT3 (250VAC, 0.056μF, ±10%)

- ↑ Ammo packing
- ↑ Forming lead type
- ↑ Radial leads
- ↑ Capacitance tolerance (J=±5%, K=±10%, M=±20%)
- ↑ Capacitance
- ↑ Rated voltage (2A~250VAC)

SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	25.4±1.0	Tilt of component and curvature of leads shall be included.
P <sub>1</sub>	Feed hole pitch	25.4±0.2	
P <sub>2</sub>	"	12.7±0.2	
P <sub>3</sub>	Feed hole center to lead	3.85±0.5	
P <sub>4</sub>	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 <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±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	8.0±0.5	
W <sub>2</sub>	Hold-down tape position	0~3.0	
H <sub>0</sub>	Lead-wire clinch height	16.0±0.5	
↑	Lead-wire protrusion	0max.	
↓	Lead-wire depression	7.0max.	
φD <sub>0</sub>	Feed hole diameter	4.0±0.2	
t	Total tape thickness	0.7±0.2	Total thickness including the hold down tape.
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.

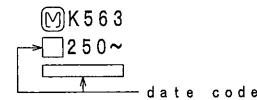
MARKING

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

PROPERTIES

Capacitance : See table at 1kHz  
 Capacitance tolerance : ±5% (J), ±10% (K), ±20% (M) at 1kHz  
 Rated voltage : 250VAC  
 Withstand voltage (terminal-terminal) : 250VAC×230% for 60s  
 (terminal-enclosure) : 1500VAC for 60s  
 Insulation resistance : ≥2000MΩ at 500VDC, 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



ALTERATION		
ISSUE	DESCRIPTION	DATE
△	Change: category temperature range (-40°C~+85°C--40°C~+105°C)	Dec. 21 2010
△	Company name changed	Apr. 1 2012
△	Company name changed	Apr. 1 2013
△	Company name changed	Apr. 1 2015

SPECIFICATIONS No.

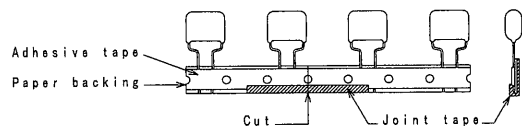
Reference

DESIGN	M. Inohara
CHECKED	S. Osaki
APPROVAL	Y. Takato
ESTABLISHMENT	Oct. 4. 2010
TYPE NAME	ECQE2A*** () T3
NAME	Metallized Polyester Film Capacitor
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	0041M-J-E (1/2)

Toyama-Matsue Plant  
Device Solutions Business Division  
Panasonic Corporation

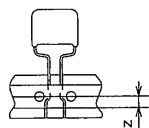
THIRD ANGLE PROJECTION

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



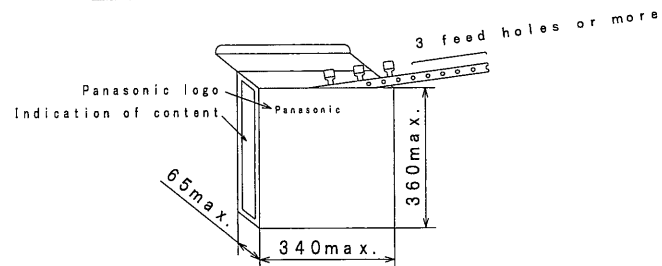
A tape sliding shall not exceed in an allowance of "P<sub>2</sub>" dimension.  
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- Note 3. A tape trailer having at least 3 feed holes is required at the end of the tape.  
 Note 4. Marking on components may not be the same side.  
 Note 5. The tape adhesion is more than 3.92N (400gf) / 25mm.  
 Note 6. Forming place shall be inside of the Z dimension.



Packing specification

1. Case size  
Ammo pack



2. Packing quantity

Capacitance range	Packing quantity
0.056 $\mu$ F	800
0.068 $\mu$ F	700
0.082~0.12 $\mu$ F	600
0.15 ~0.18 $\mu$ F	500
0.22 $\mu$ 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  
 ECQE2A\*\*\* () T3  
 DRAWING No.  
 0041M-J-E (2/2)

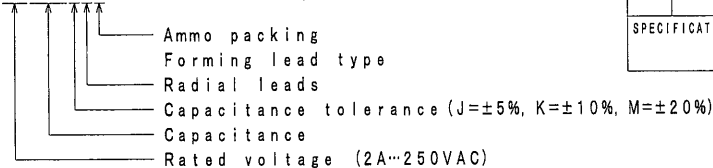
Toyama·Matsue Plant  
 Device Solutions Business Division  
 Panasonic Corporation

THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. ( $\mu$ F)	DIMENSIONS			
			$\times$ L	$\times$ T	$\times$ H	$\times$ d
ECQE2A103 () T6	250VAC	0.01	13.0	5.5	10.8	0.6
" 2A123 () T6	"	0.012	"	6.0	11.5	"
" 2A153 () T6	"	0.015	"	6.3	9.9	"
" 2A183 () T6	"	0.018	"	6.0	11.9	"
" 2A223 () T6	"	0.022	"	"	11.5	"
" 2A273 () T6	"	0.027	"	5.5	10.9	"
" 2A333 () T6	"	0.033	"	6.0	11.9	"
" 2A393 () T6	"	0.039	"	"	13.4	"
" 2A473 () T6	"	0.047	"	6.5	14.4	"

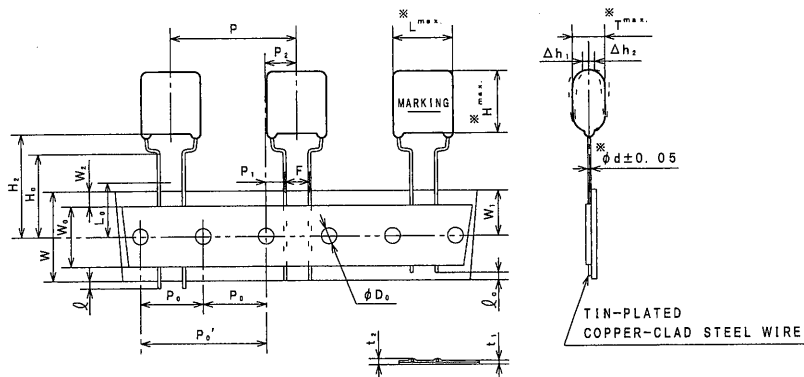
ITEM CODE NUMBER STRUCTURE

ECQE 2A103KT6 (250VAC, 0.01 $\mu$ F,  $\pm$ 10%)



ALTERATION		
ISSUE	DESCRIPTION	DATE
$\Delta$ 1	Change category temperature range (-40 $^{\circ}$ C~+85 $^{\circ}$ C~+105 $^{\circ}$ C)	Dec. 21 2010
$\Delta$ 2	Company name changed	Apr. 1 2012
$\Delta$ 3	Company name changed	Apr. 1 2013
$\Delta$ 4	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 $\pm$ 0.5	
$\Delta$ 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>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>	Component height	22.0 $\pm$ 0.75	
H <sub>2</sub>	Lead-wire clinch height	16.0 $\pm$ 0.5	
†	Lead-wire protrusion	0max.	
‡	Lead-wire depression	7.0max.	
$\phi$ D <sub>s</sub>	Feed hole diameter	4.0 $\pm$ 0.2	
l <sub>1</sub>	Total tape thickness	0.7 $\pm$ 0.2	Total thickness including the hold down tape.
l <sub>1</sub>	Total thickness	1.5max.	
L <sub>2</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.

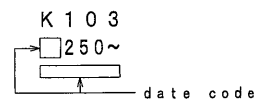
MARKING

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

PROPERTIES

Capacitance : See table at 1kHz  
 Capacitance tolerance :  $\pm$ 5% (J),  $\pm$ 10% (K),  $\pm$ 20% (M) at 1kHz  
 Rated voltage : 250VAC  
 Withstand voltage (terminal-terminal) : 250VAC $\times$ 230% for 60s  
 (terminal-enclosure) : 1500VAC for 60s  
 Insulation resistance :  $\geq$ 2000M $\Omega$  at 500VDC, 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

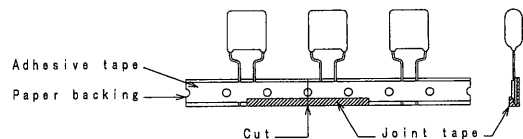


Reference

DESIGN	<i>M. Nakano</i>
CHECKED	<i>K. Osaki</i>
APPROVAL	<i>H. Takata</i>
ESTABLISHMENT	Oct. 4. 2010
TYPE NAME	ECQE2A*** () T6
NAME	Metallized Polyester Film Capacitor
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	0042M-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.

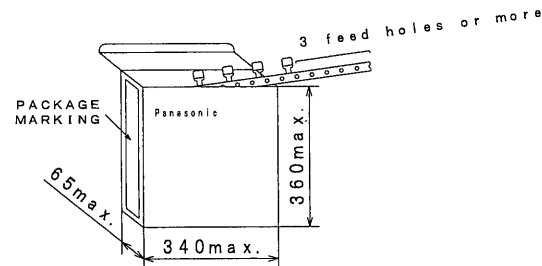


A tape sliding shall not exceed in an allowance of "P<sub>s</sub>" dimension.  
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

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

Packing specification

1. Case size  
Ammo pack



2. Packing quantity

Capacitance range	Packing quantity
0.01, 0.027 $\mu$ F	800
0.012 $\mu$ F	700
0.018, 0.022 $\mu$ F	
0.033, 0.039 $\mu$ F	600
0.015, 0.047 $\mu$ F	

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  
 ECQE2A\*\*\* () T6  
 DRAWING No.  
 0042M-J-E (2/2)

Toyama-Matsue Plant  
 Device Solutions Business Division  
 Panasonic Corporation

THIRD ANGLE PROJECTION

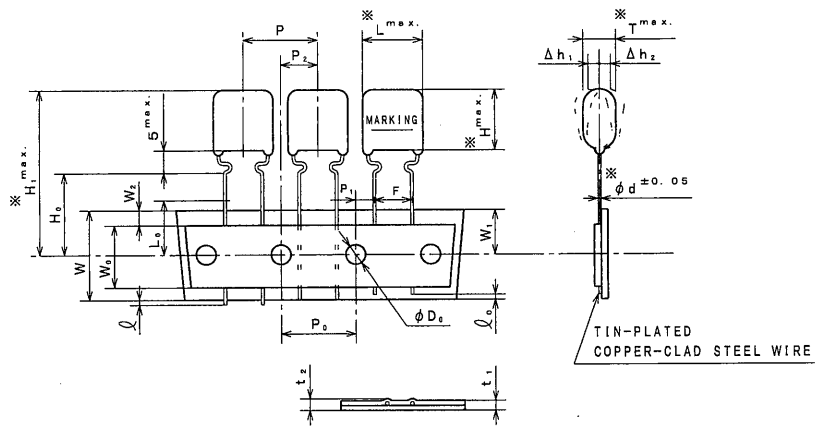
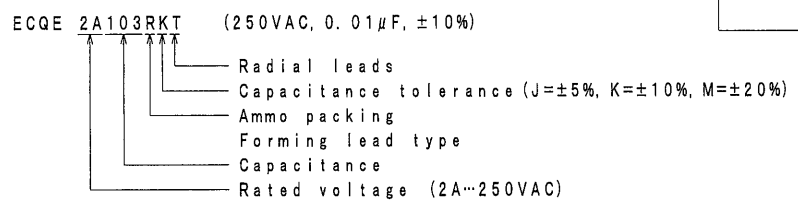
ITEM CODE	RATED VOLTAGE	CAP. ( $\mu$ F)	DIMENSIONS				
			$\times$ L	$\times$ T	$\times$ H	$\times$ d	$\times$ H <sub>1</sub>
ECQE2A103R () T	250VAC	0.01	13.0	5.5	10.8	0.6	32.8
" 2A123R () T	"	0.012	"	6.0	11.5	"	33.5
" 2A153R () T	"	0.015	"	6.3	9.9	"	31.9
" 2A183R () T	"	0.018	"	6.0	11.9	"	33.9
" 2A223R () T	"	0.022	"	"	11.5	"	33.5
" 2A273R () T	"	0.027	"	5.5	10.9	"	32.9
" 2A333R () T	"	0.033	"	6.0	11.9	"	33.9
" 2A393R () T	"	0.039	"	"	13.4	"	35.4
" 2A473R () T	"	0.047	"	6.5	14.4	"	36.4

TOL. SYMBOL (J or K or M)

ALTERATION		
ISSUE	DESCRIPTION	DATE
1	Change: category temperature range (-40°C~+85°C--40°C~+105°C)	Dec. 21 2010
2	Company name changed	Apr. 1 2012
3	Company name changed	Apr. 1 2013
4	Company name changed	Apr. 1 2015

SPECIFICATIONS No.

ITEM CODE NUMBER STRUCTURE



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 $\pm$ 0.2	
$\Delta$ 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>2</sub>	Adhesive tape width	9.5min.	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 $\pm$ 3.0	
$\delta$	Lead-wire protrusion	0max.	
$\delta$ <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>c</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.

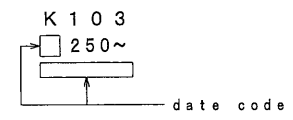
MARKING

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

PROPERTIES

Capacitance	: See table	at 1kHz
Capacitance tolerance	: $\pm$ 5% (J), $\pm$ 10% (K), $\pm$ 20% (M)	at 1kHz
Rated voltage	: 250VAC	
Withstand voltage (terminal-terminal)	: 250VAC $\times$ 230% for 60s	
(terminal-enclosure)	: 1500VAC for 60s	
Insulation resistance	: $\geq$ 2000M $\Omega$ at 500VDC, 20°C for 60s	
Dissipation factor	: $\leq$ 1.0% at 1kHz, 20°C	
Category temperature range	: $\Delta$ From -40°C to +105°C	(including temperature rise on unit surface)

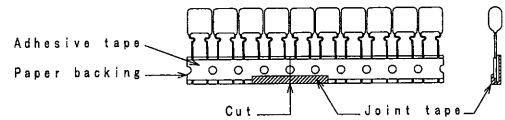
MARKING EXAMPLE



Reference	
DESIGN	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>
APPROVAL	<i>[Signature]</i>
ESTABLISHMENT	Sep. 24, 2008
TYPE NAME	
ECQE2A***R () T	
NAME Metallized Polyester	
Film Capacitor	
DRAWING NAME	
PRODUCT DRAWING	
DRAWING No.	
8070M-J-E (1/2)	

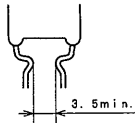
Toyama Matsue Plant  
Device Solutions Business Division  
Panasonic Corporation

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



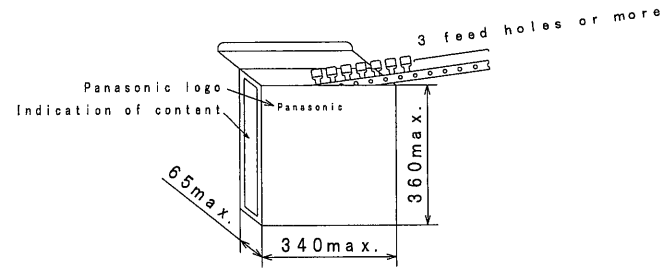
A tape sliding shall not exceed in an allowance of "P<sub>0</sub>" dimension.  
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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
0.01, 0.027 $\mu$ F	1300
0.012 $\mu$ F	
0.018~0.022 $\mu$ F	1200
0.033~0.039 $\mu$ F	

Capacitance range	Packing quantity
0.015, 0.047 $\mu$ 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**

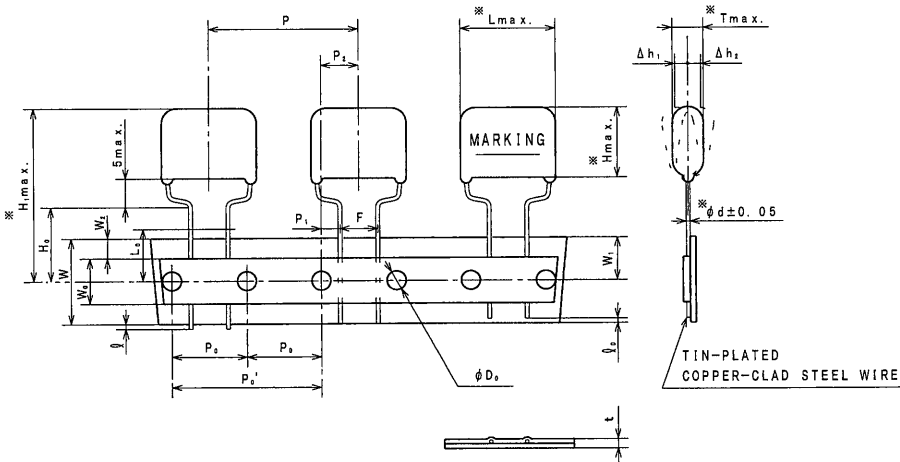
TYPE-NAME	ECQE2A***R () T
DRAWING No.	8070M-J-E (2/2)

Toyama-Matsue Plant  
 Device Solutions Business Division  
 Panasonic Corporation

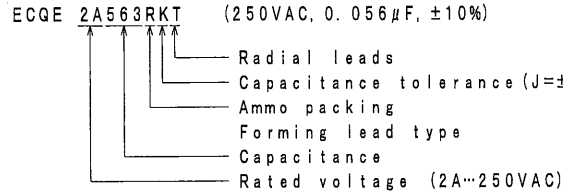
THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. (μF)	DIMENSIONS				
			*L	*T	*H	*d	*H <sub>1</sub>
ECQE2A563R ( ) T	250VAC	0.056	19.0	5.4	10.5	0.6	32.5
" 2A683R ( ) T	"	0.068	"	5.8	11.0	"	33.0
" 2A823R ( ) T	"	0.082	"	6.3	12.0	"	34.0
" 2A104R ( ) T	"	0.1	"	"	14.0	"	36.0
" 2A124R ( ) T	"	0.12	"	6.8	14.5	0.8	36.5
" 2A154R ( ) T	"	0.15	"	7.5	15.4	"	37.4
" 2A184R ( ) T	"	0.18	"	8.0	16.0	"	38.0
" 2A224R ( ) T	"	0.22	"	9.0	16.9	"	38.9

TOL. SYMBOL (J or K or M)



ITEM CODE NUMBER STRUCTURE



SYMBOL	ITEM	DIMENSION	REMARKS
P	Pitch of component	30.0±1.0	Tilt of component and curvature of leads shall be included.
P <sub>1</sub>	Feed hole pitch	30.0±0.2	
P <sub>2</sub>	"	15.0±0.2	
P <sub>3</sub>	Feed hole center to lead	3.75±0.5	
P <sub>4</sub>	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	7.5±0.5	
Δh <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±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±0.5	
W <sub>3</sub>	Hold-down tape position	0~3.0	
H <sub>2</sub>	Lead-wire clinch height	16.0 <sup>+0.5</sup> <sub>0</sub>	
ℓ	Lead-wire protrusion	0max.	
φ <sub>2</sub>	Lead-wire depression	7.0max.	
φD <sub>2</sub>	Feed hole diameter	4.0±0.2	
t	Total tape thickness	0.7±0.2	Total thickness including the hold down tape.
L	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.

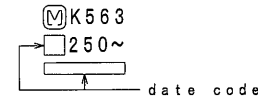
MARKING

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

PROPERTIES

Capacitance : See table at 1kHz  
 Capacitance tolerance : ±5% (J), ±10% (K), ±20% (M) at 1kHz  
 Rated voltage : 250VAC  
 Withstand voltage (terminal-terminal) : 250VAC×230% for 60s  
 (terminal-enclosure) : 1500VAC for 60s  
 Insulation resistance : ≥2000MΩ at 500VDC, 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



ALTERATION		
ISSUE	DESCRIPTION	DATE
△	Change category temperature range (-40°C~+85°C~-40°C~+105°C)	Dec. 21 2010
△	Company name changed	Apr. 1 2012
△	Company name changed	Apr. 1 2013
△	Company name changed	Apr. 1 2015

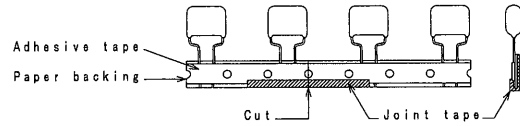
SPECIFICATIONS No.

Reference

DESIGN	<i>M. Anshu</i>
CHECKED	<i>R. Osada</i>
APPROVAL	<i>Y. Takata</i>
ESTABLISHMENT	Sep. 24. 2008
TYPE NAME	
ECQE2A***R ( ) T	
NAME Metallized Polyester	
Film Capacitor	
DRAWING NAME	
PRODUCT DRAWING	
DRAWING No.	
8071M-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.

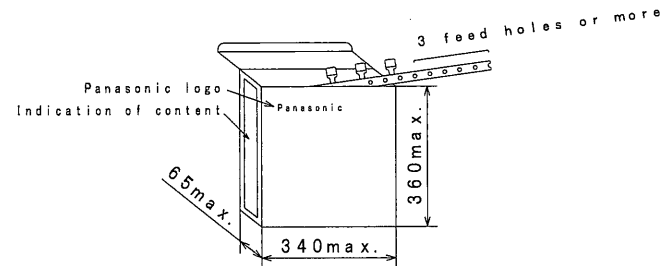


A tape sliding shall not exceed in an allowance of "P<sub>e</sub>" dimension.  
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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
0.056~0.068 $\mu$ F	600
0.082~0.12 $\mu$ F	500
0.15 ~0.22 $\mu$ 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	ECQE2A***R () T
DRAWING No.	8071M-J-E (2/2)

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