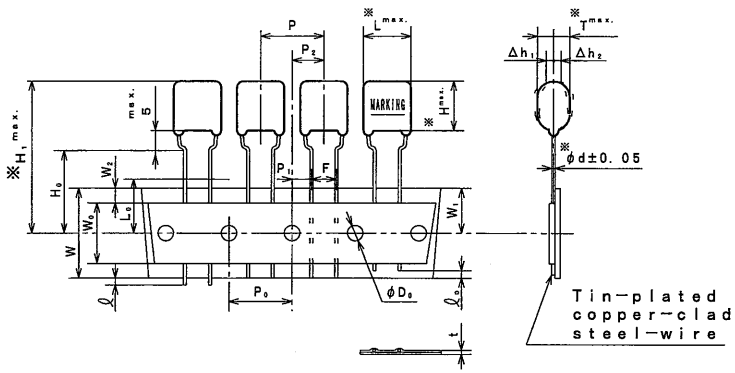
THIRD ANGLE PROJECTION

ITEM CODE	CAP. μF (*)	DIMENSIONS L	T	H	H_1	d	VOLUME (mm^3)
ECWF2W104RJA	0.1 (104)	13.0	5.1	9.3	31.3	0.6	503
〃 2W124RJA	0.12 (124)	〃	5.4	9.5	31.5	〃	541
〃 2W154RJA	0.15 (154)	〃	5.7	9.9	31.9	〃	597
〃 2W184RJA	0.18 (184)	〃	6.1	10.2	32.2	〃	652
〃 2W224RJA	0.22 (224)	〃	6.5	10.6	32.6	〃	720
〃 2W274RJA	0.27 (274)	〃	7.0	11.1	33.1	〃	808
〃 2W334RJA	0.33 (334)	〃	7.6	11.7	33.7	〃	911
〃 2W394RJA	0.39 (394)	〃	8.1	12.2	34.2	〃	1014
〃 2W474RJA	0.47 (474)	〃	8.7	12.9	34.9	〃	1148



ALTERATION		
ISSUE	DESCRIPTION	DATE
1	Company name changed	Apr. 1 2012
2	Company name changed	Apr. 1 2013
3	Company name changed	Apr. 1 2015
SPECIFICATIONS No.		

ITEM CODE NUMBER STRUCTURE

ECWF 2W104RJA (450VDC, 0.1μF, ±5%)

- Radial leads
- Capacitance tolerance (J=±5%)
- Ammo packing Forming lead type
- Capacitance: See table (*)
- Rated voltage (2W=450VDC)

SYMBOL	ITEM	VALUE	TOLERANCE	REMARKS
P	Pitch of component	15.0	±1.0	Tilt of component and curvature of leads shall be included.
P_0	Feed hole pitch	15.0	±0.2	
P_1	Feed hole center to lead	3.75	±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	7.5	$^{+0.8}_{-0.2}$	
$\Delta h_{1,2}$	Component alignment	0~2.0		Tilt of component due to curvature of leads shall be included.
W	Paper backing width	18.0	±0.5	
W_0	Adhesive tape width	12.5	min.	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_0	Lead-wire clinch height	16.0	$^{+1.0}_{0}$	
ℓ	Lead wire protrusion	0	max.	
ℓ_0	Lead wire depression	7.0	max.	
ϕD_0	Feed hole diameter	4.0	±0.2	
t	Total tape thickness	0.7	±0.2	Total thickness including the hold down tape.
L_0	Length of snipped lead	11.0	max.	

CONSTRUCTION

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

MARKING

Marking comprises capacitance, capacitance tolerance, rated voltage, type name "WFA" and manufacturer's date code.

(example)

WFA104J
450V □
↑
date code

PROPERTIES

*Capacitance	:See table at 1kHz.
*Capacitance tolerance	:±5%(J) at 1kHz.
*Rated voltage	:450VDC (Derating of rated voltage by 1.25%/℃ at more than 85℃)
*Withstand voltage (terminal-terminal)	:450VDC×150% for 60s
*Insulation resistance	:≧30000MΩ (C≦0.33μF) at 100VDC, 20℃ for 60s :≧10000MΩ·μF (C>0.33μF) at 100VDC, 20℃ for 60s
*Dissipation factor	:≦0.1% at 1kHz, 20℃
*Category temperature range (including temperature rise on unit surface)	:From -40℃ to +105℃

DO NOT SCALE DRAWING REVISIONS INDICATED BY Δ ALL DIMENSIONS ARE IN MILLIMETERS

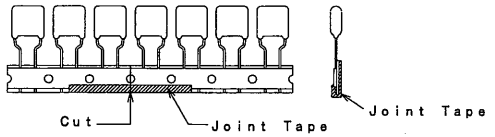
Reference

DESIGN	M. Ishikawa
CHECKED	M. Yanagimoto
APPROVAL	Y. Takata
ESTABLISHMENT	Jan. 6. 2009
TYPE NAME	ECWF 2W***RJA
NAME	Metallized Polypropylene Film Capacitor
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	8056J-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.

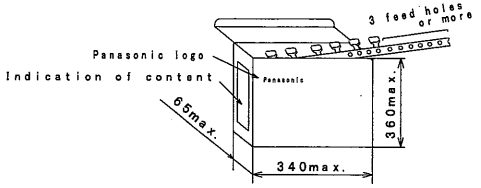


A tape sliding shall not exceed in an allowance of "P_0" dimension.
A joint tape put on the back side of paper backing, and turn up the lower part to the front.

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 (μF)	Quantity (pcs.)
0.1 ~ 0.12	1200
0.15~ 0.22	1000
0.27~ 0.39	800
0.47	600

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	ECWF 2W***RJA
DRAWING No.	8056J-J-E (2/2)

Toyama·Matsue Plant
Device Solutions Business Division
Panasonic Corporation

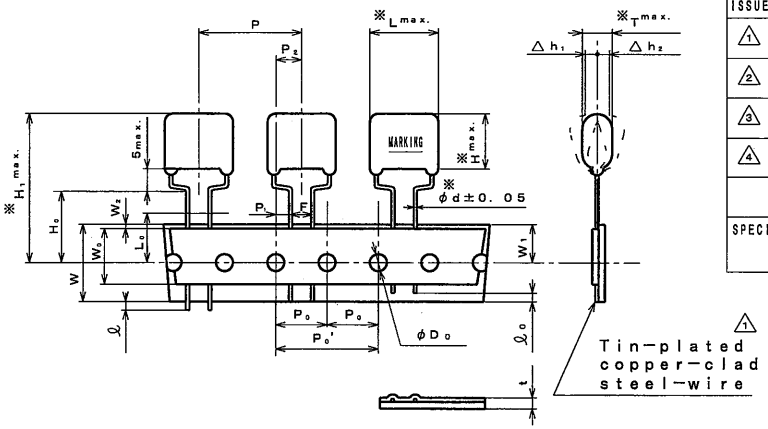
DO NOT SCALE DRAWING REVISIONS INDICATED BY Δ ALL DIMENSIONS ARE IN MILLIMETERS

THIRD ANGLE PROJECTION

ITEM CODE	CAP. μF (*)	DIMENSIONS L	T	H	H_1	d	VOLUME (mm^3)	MARKING STYLE	Note
ECWF2W564RJA	0.56 (564)	18.1	7.0	11.5	33.5	0.8	1204	1	
〃 2W684RJA	0.68 (684)	〃	7.5	12.1	34.1	〃	1359	〃	
〃 2W824RJA	0.82 (824)	〃	8.2	12.7	34.7	〃	1536	〃	
〃 2W105RJA	1.0 (105)	〃	9.3	12.6	34.6	〃	1696	〃	
〃 2W125RJA	1.2 (125)	18.8	9.7	14.7	36.7	〃	2180	2	*
〃 2W155RJA	1.5 (155)	〃	10.7	15.8	37.8	〃	2566	〃	*
〃 2W185RJA	1.8 (185)	〃	11.6	16.7	38.7	〃	2945	〃	*
〃 2W225RJA	2.2 (225)	〃	12.8	17.9	39.9	〃	3444	〃	*

Note

*The specimen (the volume is more than 1750mm^3) shall be satisfied with IEC60384-1 Inflammability Category B based on IEC60065, 1998~



ISSUE	DESCRIPTION	DATE
1	Modification	Dec. 7 2009
2	Company name changed	Apr. 1 2012
3	Company name changed	Apr. 1 2013
4	Company name changed	Apr. 1 2015

SPECIFICATIONS No.

SYMBOL	ITEM	VALUE	TOLERANCE	REMARKS
P	Pitch of component	30.0	±1.0	Tilt of component and curvature of leads shall be included.
P_0'	Feed hole pitch	30.0	±0.2	
P_0	Feed hole pitch	15.0	±0.2	
P_1	Feed hole center to lead	3.75	±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	7.5	$^{+0.8}_{-0.2}$	
$\Delta h_{1,2}$	Component alignment	0~2.0		Tilt of component due to curvature of leads shall be included.
W	Paper backing width	18.0	±0.5	
W_0	Adhesive tape width	12.5	min.	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_0	Lead-wire clinch height	16.0	$^{+1.0}_{0}$	
ℓ	Lead wire protrusion	0	max.	
ℓ_0	Lead wire depression	7.0	max.	
ϕD_0	Feed hole diameter	4.0	±0.2	
t	Total tape thickness	0.7	±0.2	Total thickness including the hold down tape.
L_0	Length of snipped lead	11.0	max.	

ITEM CODE NUMBER STRUCTURE

ECWF 2W564RJA (450VDC, 0.56μF, ±5%)

- Radial leads
- Capacitance tolerance (J=±5%)
- Ammo packing Forming lead type
- Capacitance: See table (*)
- Rated voltage (2W=450VDC)

CONSTRUCTION

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

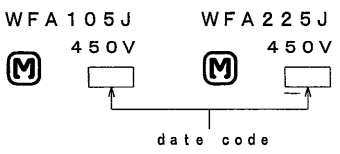
MARKING

Marking comprises capacitance, capacitance tolerance, rated voltage, type name "WFA", manufacturer's trademark and date code.

PROPERTIES

*Capacitance	:See table at 1kHz.
*Capacitance tolerance	:±5%(J) at 1kHz.
*Rated voltage	:450VDC (Derating of rated voltage by 1.25%/℃ at more than 85℃)
*Withstand voltage (terminal-terminal)	:450VDC×150% for 60s
*Insulation resistance	:≧10000MΩ·μF at 100VDC, 20℃ for 60s
*Dissipation factor	:≦0.1% at 1kHz, 20℃
*Category temperature range (including temperature rise on unit surface)	:From -40℃ to +105℃

(example)



DO NOT SCALE DRAWING REVISIONS INDICATED BY Δ ALL DIMENSIONS ARE IN MILLIMETERS

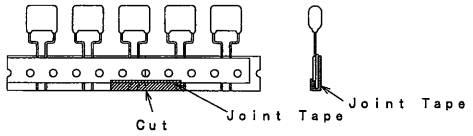
Reference

DESIGN	M. Inoshita
CHECKED	M. Yamaguchi
APPROVAL	Y. Takata
ESTABLISHMENT	Jan. 6. 2009
TYPE NAME	ECWF 2W***RJA
NAME	METALLIZED POLYPROPYLENE CAPACITOR
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	8057J-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.

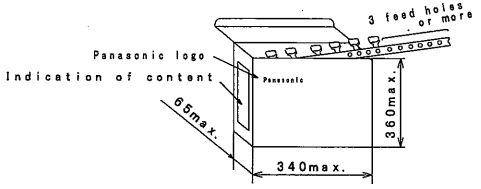


A tape sliding shall not exceed in an allowance of "P_0" dimension.
A joint tape put on the back side of paper backing, and turn up the lower part to the front.

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 (μF)	Quantity (pcs.)
0.56~0.82	400
1.0 ~1.5	300
1.8 ~2.2	200

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

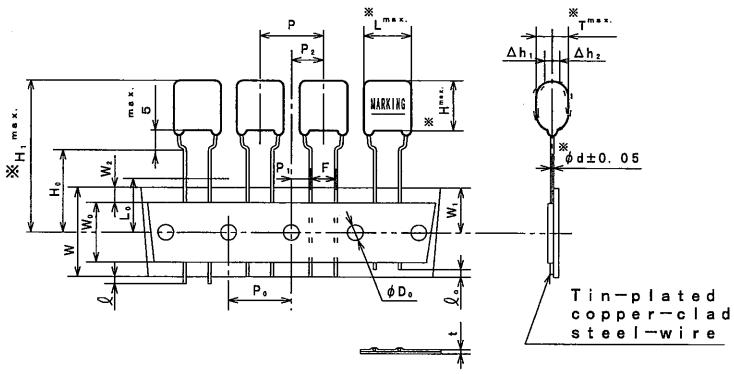
TYPE NAME	ECWF 2W***RJA
DRAWING No.	8057J-J-E (2/2)

Toyama·Matsue Plant
Device Solutions Business Division
Panasonic Corporation

DO NOT SCALE DRAWING REVISIONS INDICATED BY Δ ALL DIMENSIONS ARE IN MILLIMETERS

THIRD ANGLE PROJECTION

ITEM CODE	CAP. μF (*)	DIMENSIONS L	T	H	H_1	d	VOLUME (mm^3)
ECWF2W104RKA	0.1 (104)	13.0	5.1	9.3	31.3	0.6	503
〃 2W124RKA	0.12 (124)	〃	5.4	9.5	31.5	〃	541
〃 2W154RKA	0.15 (154)	〃	5.7	9.9	31.9	〃	597
〃 2W184RKA	0.18 (184)	〃	6.1	10.2	32.2	〃	652
〃 2W224RKA	0.22 (224)	〃	6.5	10.6	32.6	〃	720
〃 2W274RKA	0.27 (274)	〃	7.0	11.1	33.1	〃	808
〃 2W334RKA	0.33 (334)	〃	7.6	11.7	33.7	〃	911
〃 2W394RKA	0.39 (394)	〃	8.1	12.2	34.2	〃	1014
〃 2W474RKA	0.47 (474)	〃	8.7	12.9	34.9	〃	1148



ALTERATION		
ISSUE	DESCRIPTION	DATE
1	Company name changed	Apr. 1 2012
2	Company name changed	Apr. 1 2013
3	Company name changed	Apr. 1 2015
SPECIFICATIONS No.		

ITEM CODE NUMBER STRUCTURE

ECWF 2W104RKA (450VDC, 0.1μF, ±10%)

- Radial leads
- Capacitance tolerance (K=±10%)
- Ammo packing Forming lead type
- Capacitance: See table (*)
- Rated voltage (2W=450VDC)

SYMBOL	ITEM	VALUE	TOLERANCE	REMARKS
P	Pitch of component	15.0	±1.0	Tilt of component and curvature of leads shall be included.
P_0	Feed hole pitch	15.0	±0.2	
P_1	Feed hole center to lead	3.75	±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	7.5	$^{+0.8}_{-0.2}$	
$\Delta h_{1,2}$	Component alignment	0~2.0		Tilt of component due to curvature of leads shall be included.
W	Paper backing width	18.0	±0.5	
W_0	Adhesive tape width	12.5	min.	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_0	Lead-wire clinch height	16.0	$^{+1.0}_{0}$	
ℓ	Lead wire protrusion	0	max.	
ℓ_0	Lead wire depression	7.0	max.	
ϕD_0	Feed hole diameter	4.0	±0.2	
t	Total tape thickness	0.7	±0.2	Total thickness including the hold down tape.
L_0	Length of snipped lead	11.0	max.	

CONSTRUCTION

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

MARKING

Marking comprises capacitance, capacitance tolerance, rated voltage, type name "WFA" and manufacturer's date code.

(example)

WFA104K
450V □
↑
date code

PROPERTIES

*Capacitance	:See table at 1kHz.
*Capacitance tolerance	:±10%(K) at 1kHz.
*Rated voltage	:450VDC (Derating of rated voltage by 1.25%/℃ at more than 85℃)
*Withstand voltage(terminal-terminal)	:450VDC×150% for 60s
*Insulation resistance	:≧30000MΩ (C≦0.33μF) at 100VDC, 20℃ for 60s :≧10000MΩ·μF (C>0.33μF) at 100VDC, 20℃ for 60s
*Dissipation factor	:≦0.1% at 1kHz, 20℃
*Category temperature range (including temperature rise on unit surface)	:From −40℃ to +105℃

DO NOT SCALE DRAWING REVISIONS INDICATED BY Δ ALL DIMENSIONS ARE IN MILLIMETERS

Reference

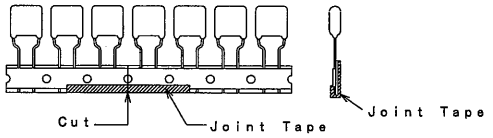
DESIGN	M. Ishizaki
CHECKED	M. Yamamoto
APPROVAL	Y. Takata
ESTABLISHMENT	Sep. 24. 2008
TYPE NAME	ECWF 2W***RKA
NAME	Metallized Polypropylene Film Capacitor
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	8054J-J-E(1/2)

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_0" dimension.
A joint tape put on the back side of paper backing, and turn up the lower part to the front.

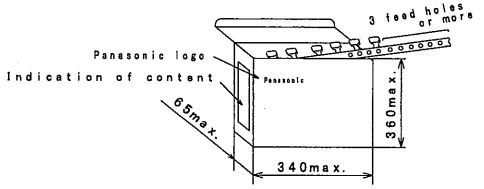
Note 3. A tape trailer having at least 3 feed holes is required at the end of the tape.

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 (μF)	Quantity (pcs.)
0.1 ~ 0.12	1200
0.15~ 0.22	1000
0.27~ 0.39	800
0.47	600

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	ECWF 2W***RKA
DRAWING No.	8054J-J-E (2/2)

Toyama·Matsue Plant
Device Solutions Business Division
Panasonic Corporation

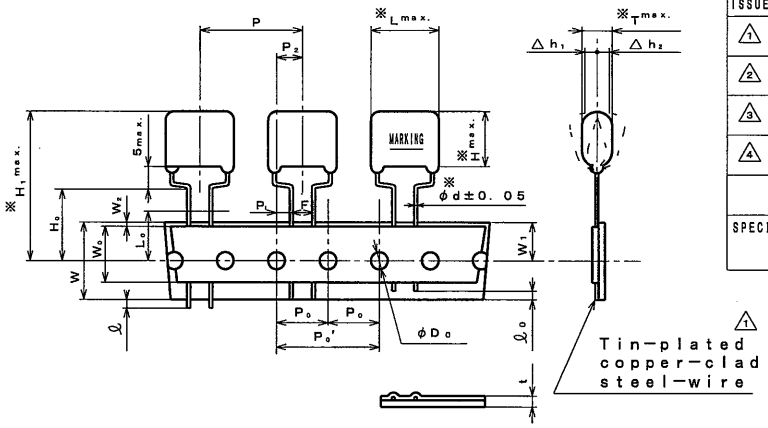
DO NOT SCALE DRAWING REVISIONS INDICATED BY Δ ALL DIMENSIONS ARE IN MILLIMETERS

THIRD ANGLE PROJECTION

ITEM CODE	CAP. μF (*)	DIMENSIONS L	T	H	H_1	d	VOLUME (mm^3)	MARKING STYLE	Note
ECWF2W564RKA	0.56 (564)	18.1	7.0	11.5	33.5	0.8	1204	1	
〃 2W684RKA	0.68 (684)	〃	7.5	12.1	34.1	〃	1359	〃	
〃 2W824RKA	0.82 (824)	〃	8.2	12.7	34.7	〃	1536	〃	
〃 2W105RKA	1.0 (105)	〃	9.3	12.6	34.6	〃	1696	〃	
〃 2W125RKA	1.2 (125)	18.8	9.7	14.7	36.7	〃	2180	2	*
〃 2W155RKA	1.5 (155)	〃	10.7	15.8	37.8	〃	2566	〃	*
〃 2W185RKA	1.8 (185)	〃	11.6	16.7	38.7	〃	2945	〃	*
〃 2W225RKA	2.2 (225)	〃	12.8	17.9	39.9	〃	3444	〃	*

Note

*The specimen (the volume is more than 1750mm^3) shall be satisfied with IEC60384-1 Inflammability Category B based on IEC60065, 1998~



ALTERATION		
ISSUE	DESCRIPTION	DATE
1	Modification	Dec. 7 2009
2	Company name changed	Apr. 1 2012
3	Company name changed	Apr. 1 2013
4	Company name changed	Apr. 1 2015
SPECIFICATIONS No.		

SYMBOL	ITEM	VALUE	TOLERANCE	REMARKS
P	Pitch of component	30.0	±1.0	Tilt of component and curvature of leads shall be included.
P_0'	Feed hole pitch	30.0	±0.2	
P_0	Feed hole pitch	15.0	±0.2	
P_1	Feed hole center to lead	3.75	±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	7.5	$^{+0.8}_{-0.2}$	
$\Delta h_{1,2}$	Component alignment	0~2.0		Tilt of component due to curvature of leads shall be included.
W	Paper backing width	18.0	±0.5	
W_0	Adhesive tape width	12.5	min.	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_0	Lead-wire clinch height	16.0	$^{+1.0}_{0}$	
ℓ	Lead wire protrusion	0	max.	
ℓ_0	Lead wire depression	7.0	max.	
ϕD_0	Feed hole diameter	4.0	±0.2	
t	Total tape thickness	0.7	±0.2	Total thickness including the hold down tape.
L_0	Length of snipped lead	11.0	max.	

ITEM CODE NUMBER STRUCTURE

ECWF 2W564RKA (450VDC, 0.56μF, ±10%)

- Radial leads
- Capacitance tolerance (K=±10%)
- Ammo packing Forming lead type
- Capacitance: See table (*)
- Rated voltage (2W=450VDC)

CONSTRUCTION

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

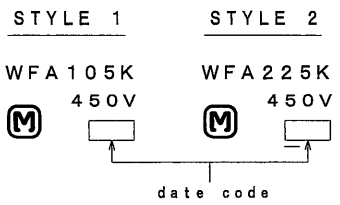
MARKING

Marking comprises capacitance, capacitance tolerance, rated voltage, type name "WFA", manufacturer's trademark and date code.

PROPERTIES

*Capacitance	: See table at 1kHz.
*Capacitance tolerance	: ±10%(K) at 1kHz.
*Rated voltage	: 450VDC (Derating of rated voltage by 1.25%/℃ at more than 85℃)
*Withstand voltage (terminal-terminal)	: 450VDC×150% for 60s
*Insulation resistance	: ≧10000MΩ·μF at 100VDC, 20℃ for 60s
*Dissipation factor	: ≦0.1% at 1kHz, 20℃
*Category temperature range (including temperature rise on unit surface)	: From −40℃ to +105℃

(example)



DO NOT SCALE DRAWING REVISIONS INDICATED BY Δ ALL DIMENSIONS ARE IN MILLIMETERS

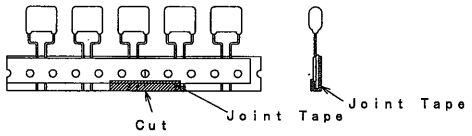
Reference

DESIGN	M. Nakada
CHECKED	M. Yamaguchi
APPROVAL	Y. Takata
ESTABLISHMENT	Sep. 24. 2008
TYPE NAME	ECWF 2W***RKA
NAME	METALLIZED POLYPROPYLENE CAPACITOR
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	8055J-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.

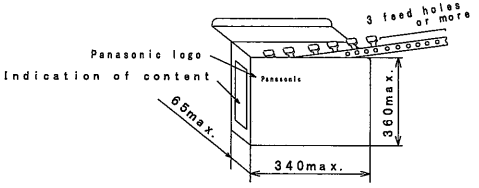


A tape sliding shall not exceed in an allowance of "P_0" dimension.
A joint tape put on the back side of paper backing, and turn up the lower part to the front.

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 (μF)	Quantity (pcs.)
0.56~0.82	400
1.0 ~1.5	300
1.8 ~2.2	200

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	ECWF 2W***RKA
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DO NOT SCALE DRAWING REVISIONS INDICATED BY Δ ALL DIMENSIONS ARE IN MILLIMETERS