

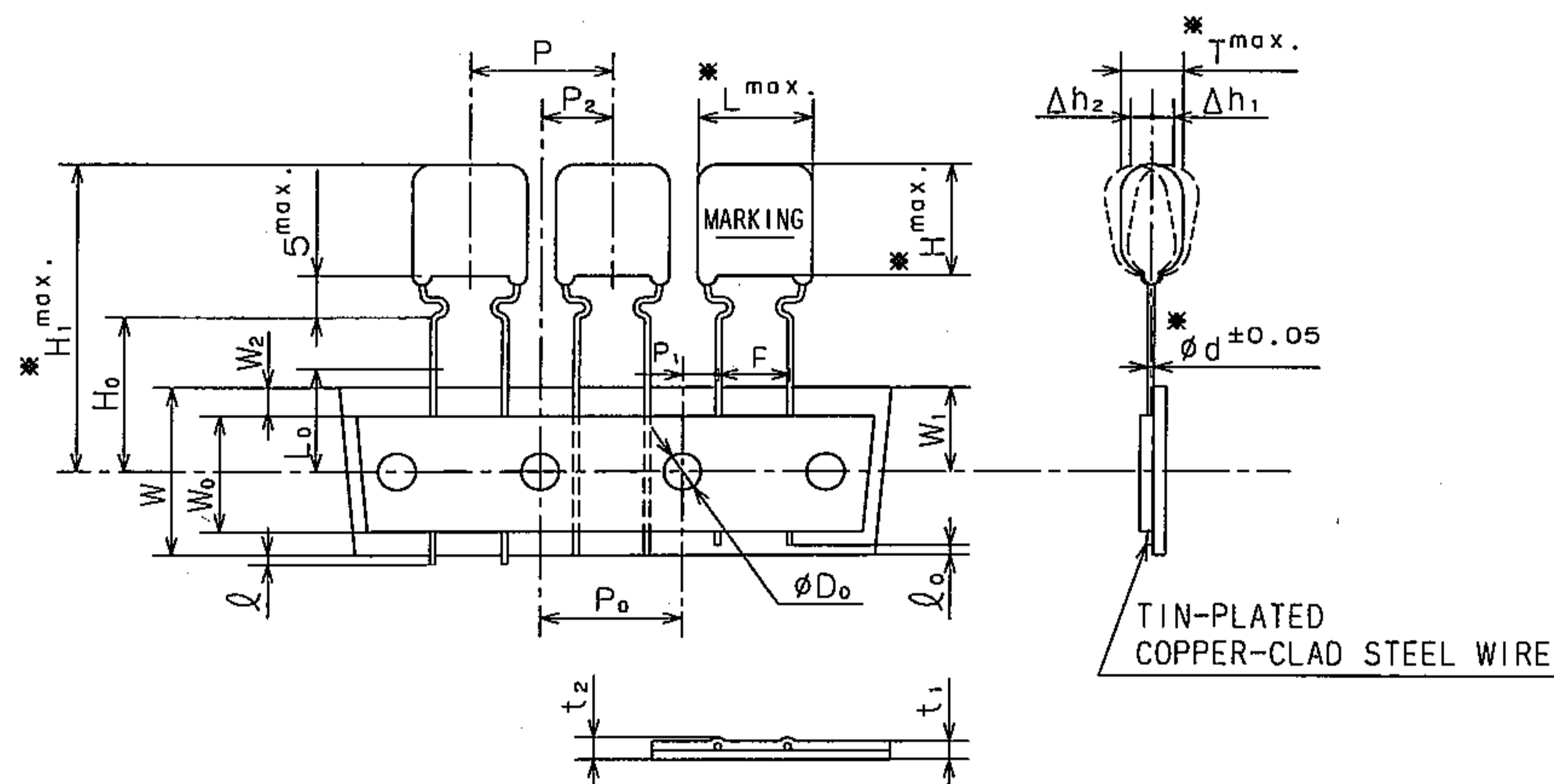
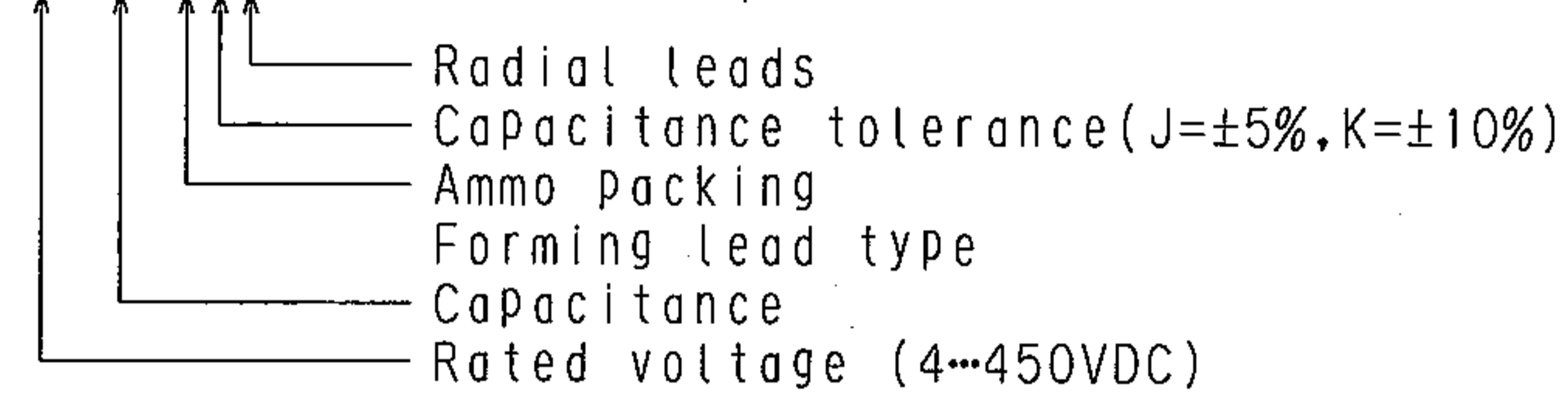
THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. ( $\mu$ F)	DIMENSIONS				
			*L	*T	*H	*d	*H <sub>1</sub>
ECQE2W104R()H	450VDC	0.1	12.7	4.2	10.9	0.6	32.0
// 2W154R()H	//	0.15	//	4.9	11.6	//	33.6
// 2W224R()H	//	0.22	//	5.8	12.5	//	34.5
// 2W334R()H	//	0.33	//	6.5	14.7	//	36.7
// 2W474R()H	//	0.47	//	7.7	16.0	//	38.0

TOL. SYMBOL (J or K)

ITEM CODE NUMBER STRUCTURE

ECQE 2W474RKH (450VDC, 0.47 $\mu$ 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>0</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 $\pm$ 8.8	
$\Delta$ 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	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>0</sub>	Lead-wire clinch height	16.0 $\pm$ 1.0	
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 snapped lead	11.0max.	

ALTERATION		
ISSUE	DESCRIPTION	DATE
△	Company name changed	Apr. 1 2006
△	Addition(104~334)	Mar. 23 2007
△	Correction: Insulation resistance ( $\geq$ 3000M $\Omega$ · $\mu$ F $\rightarrow$ $\geq$ 9000M $\Omega$ · $\mu$ F (C $\leq$ 0.33 $\mu$ F) $\geq$ 3000M $\Omega$ · $\mu$ F (C $>$ 0.33 $\mu$ F))	Apr. 17 2007
SPECIFICATIONS No.		

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.

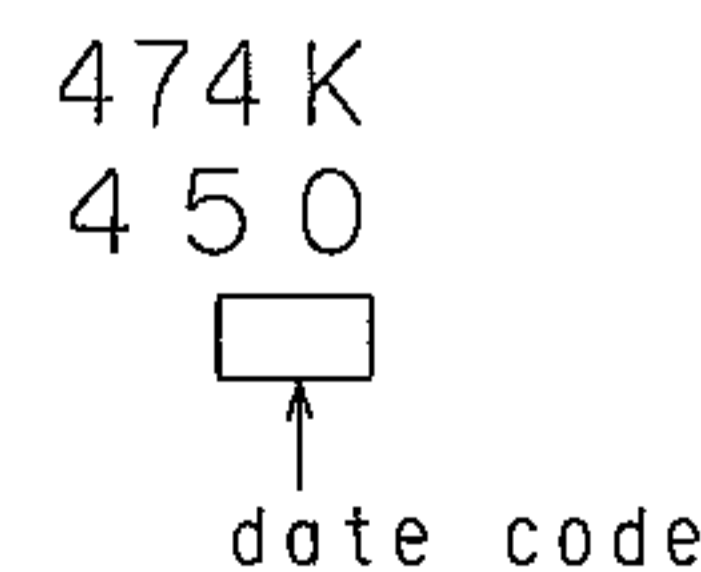
MARKING

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: 450VDC (Derating of rated voltage by 1.25%/ $^{\circ}$ C at more than 85 $^{\circ}$ C)
- \*Withstand voltage (terminal-terminal): 450VDC $\times$ 150% for 60s
- \*Insulation resistance:  $\triangle$   $\geq$ 9000M $\Omega$  (C $\leq$ 0.33 $\mu$ F) at 100VDC, 20 $^{\circ}$ C for 60s  
 $\geq$ 3000M $\Omega$ · $\mu$ F (C $>$ 0.33 $\mu$ 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

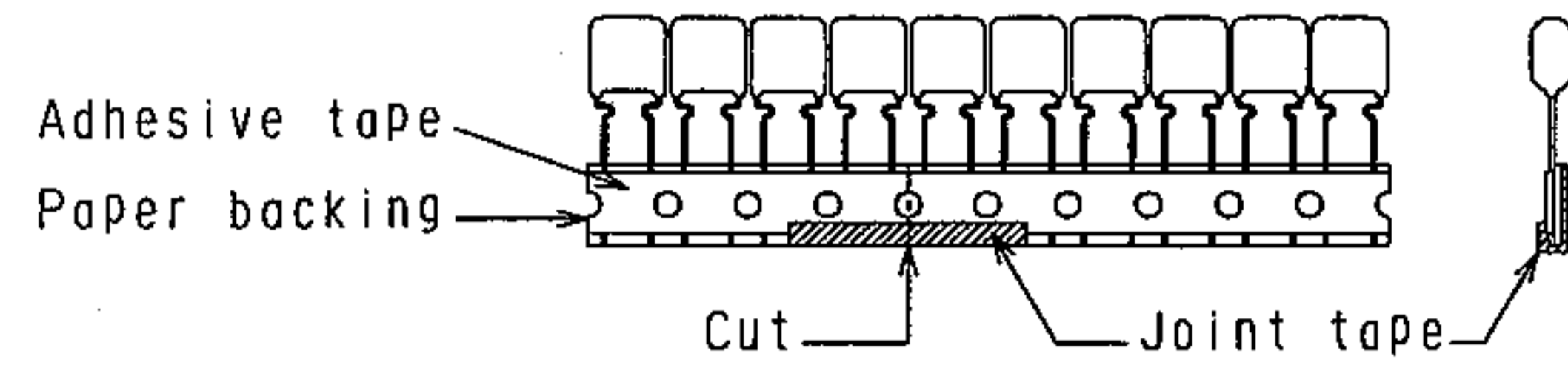


Reference ECQE(H)

DESIGN	T. Harada
CHECKED	M. Nishikawa
APPROVAL	M. Nagasaka
ESTABLISHMENT	Jun. 13. 2005
TYPE NAME	ECQE2W***R()H
NAME	Metallized Polyester Film Capacitor
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	5033M-J-E(1/2)

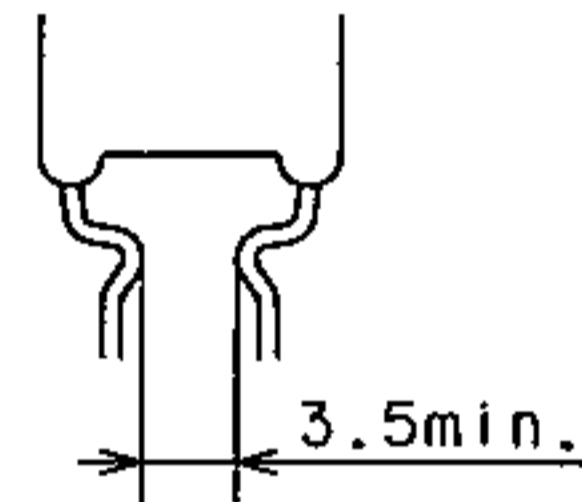
Panasonic Electronic Devices Co., Ltd.  
Capacitor Business Unit  
Panasonic Electronic Devices Matsue Co., Ltd.

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



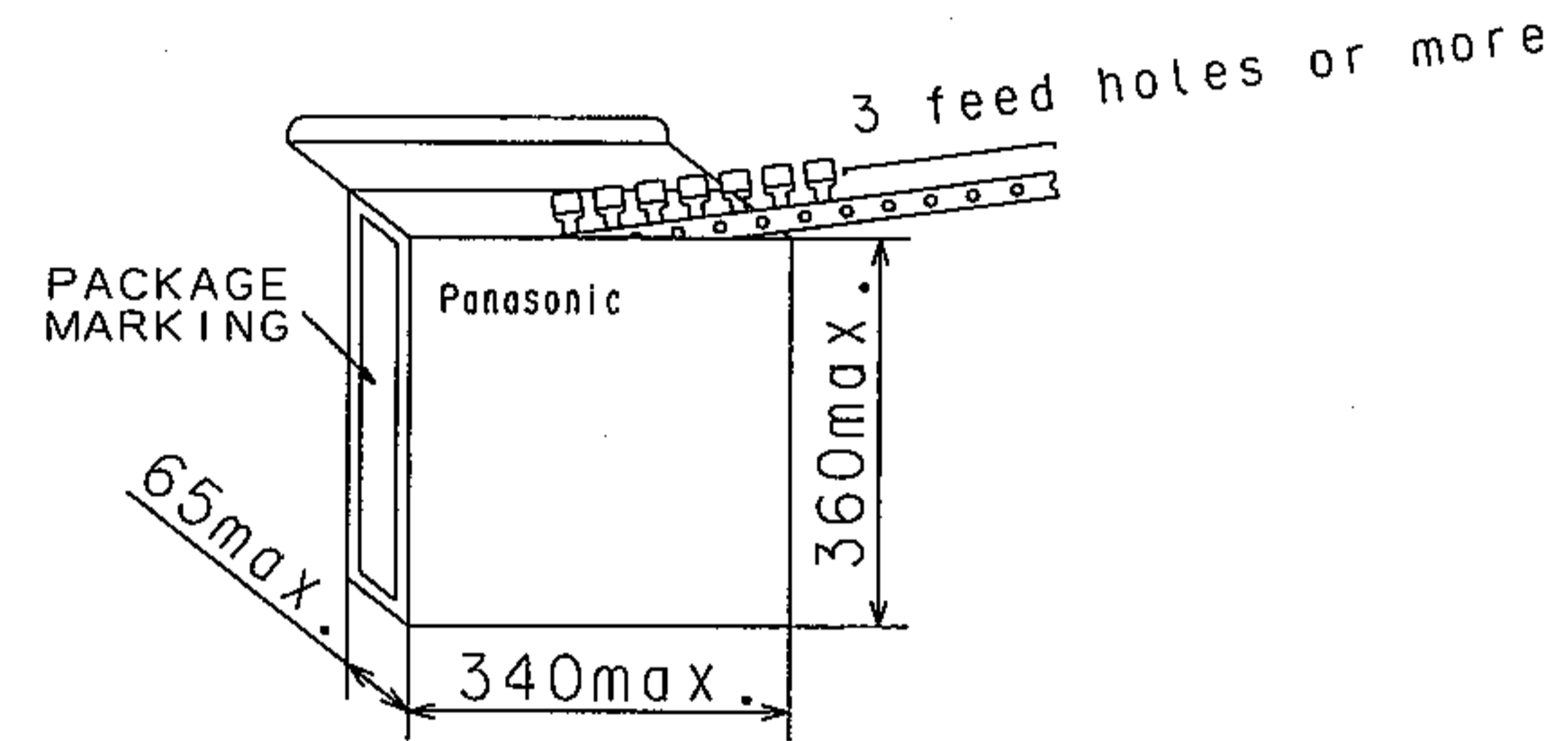
A tape sliding shall not exceed in an allowance of "P<sub>0</sub>" dimension.  
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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
△ 0.1μF	1500
△ 0.15~0.22μF	1000
△ 0.33μF	900
0.47μF	800

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	ECQE2W***R()H
DRAWING No.	5033M-J-E (2/2)

Panasonic Electronic Devices Co.,Ltd.  
 Capacitor Business Unit  
 Panasonic Electronic Devices Matsue Co.,Ltd.

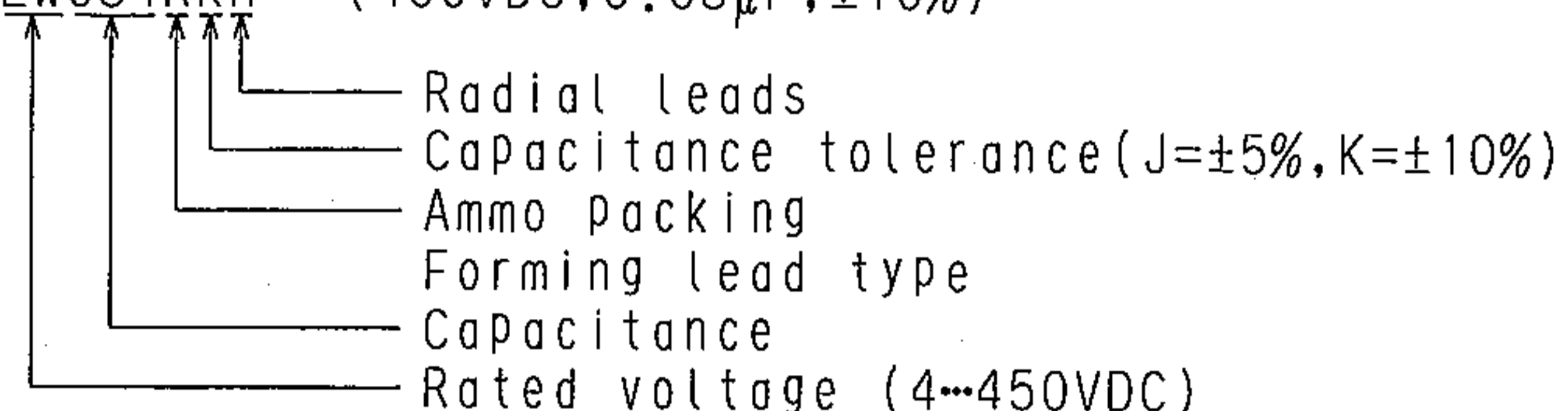
THIRD ANGLE PROJECTION

ITEM CODE	RATED VOLTAGE	CAP. ( $\mu$ F)	DIMENSIONS				
			*L	*T	*H	*d	*H <sub>1</sub>
ECQE2W684R()H	450VDC	0.68	18.2	6.9	15.3	0.8	37.3
// 2W105R()H	//	1.0	//	8.5	16.9	//	38.9

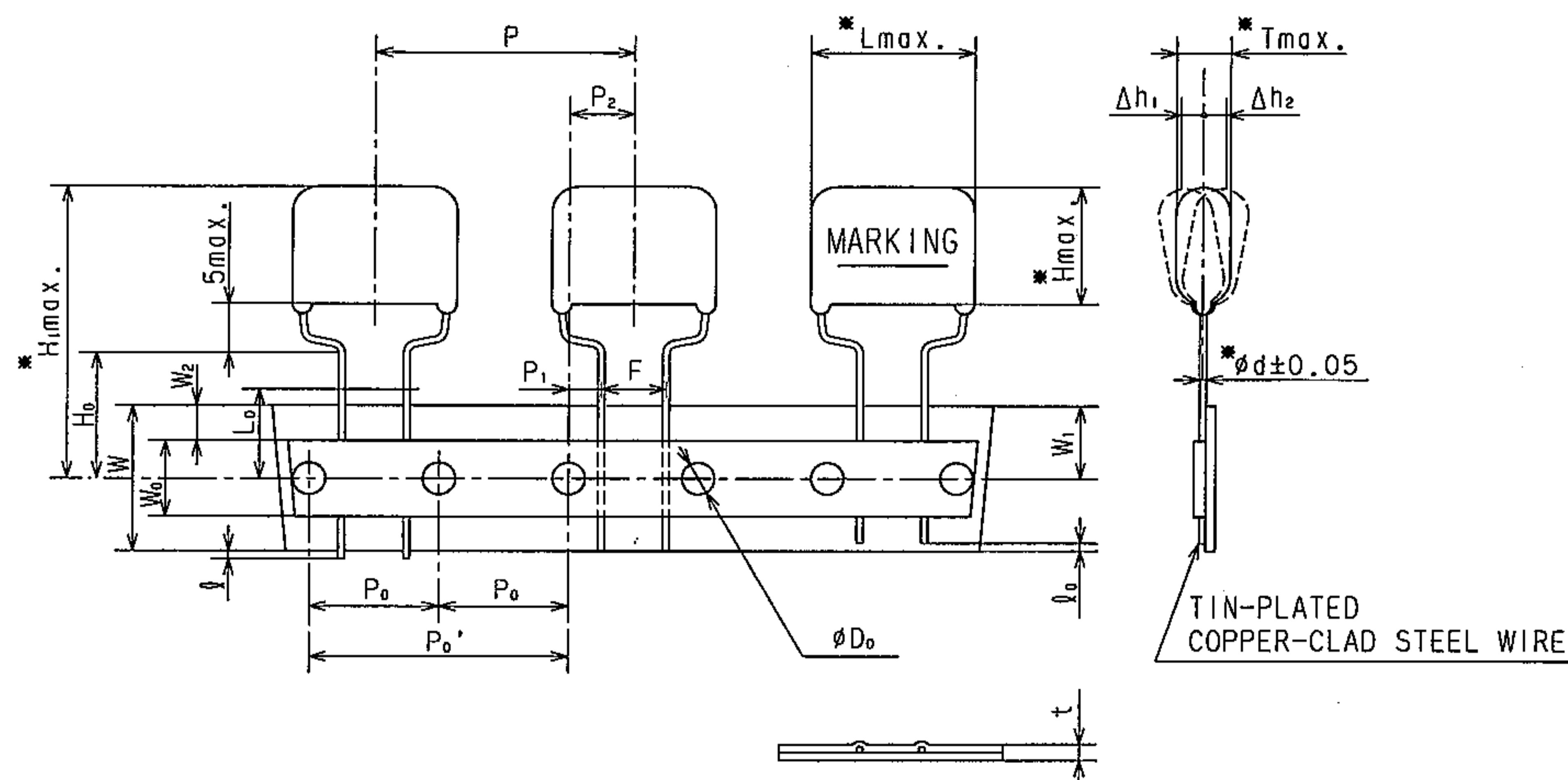
TOL. SYMBOL (J or K)

ITEM CODE NUMBER STRUCTURE

ECQE 2W684RKH (450VDC, 0.68 $\mu$ F,  $\pm$ 10%)



ALTERATION		
ISSUE	DESCRIPTION	DATE
△	Company name changed	Apr. 1 2006
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>0</sub>	//	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>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>0</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	Total tape thickness	0.7 $\pm$ 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.

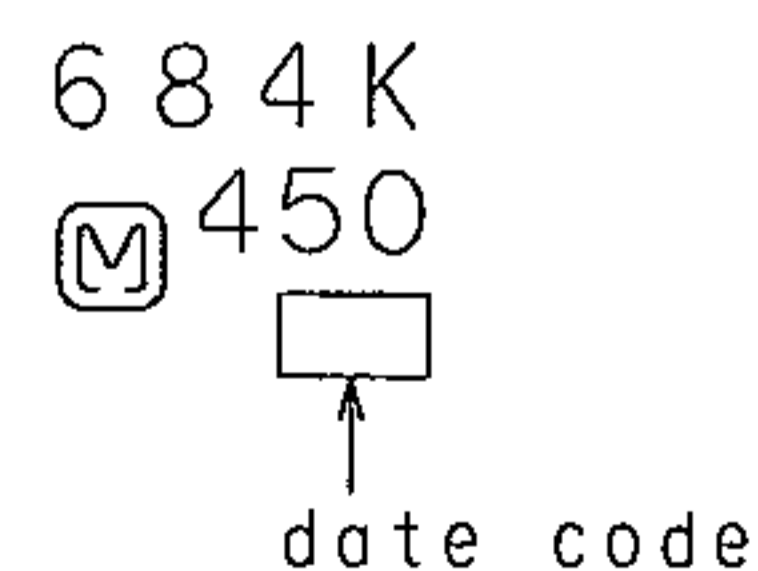
MARKING

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

PROPERTIES

- \*Capacitance : See table at 1kHz.
- \*Capacitance tolerance :  $\pm$ 5%(J),  $\pm$ 10%(K) at 1kHz.
- \*Rated voltage : 450VDC  
(Derating of rated voltage by 1.25%/°C at more than 85°C)
- \*Withstand voltage (terminal-terminal) : 450VDC $\times$ 150% for 60s
- \*Insulation resistance :  $\geq$ 3000M $\Omega$  $\cdot$  $\mu$ 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

ECQE(H)

DESIGN	T. Harada
CHECKED	M. Nishikawa
APPROVAL	M. Nagasawa
ESTABLISHMENT	Jun. 13. 2005
TYPE NAME	ECQE2W***R()H
NAME	Metallized Polyester Film Capacitor
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	5034M-J-E(1/1)

Panasonic Electronic Devices Co., Ltd.  
Capacitor Business Unit  
Panasonic Electronic Devices Matsue Co., Ltd.

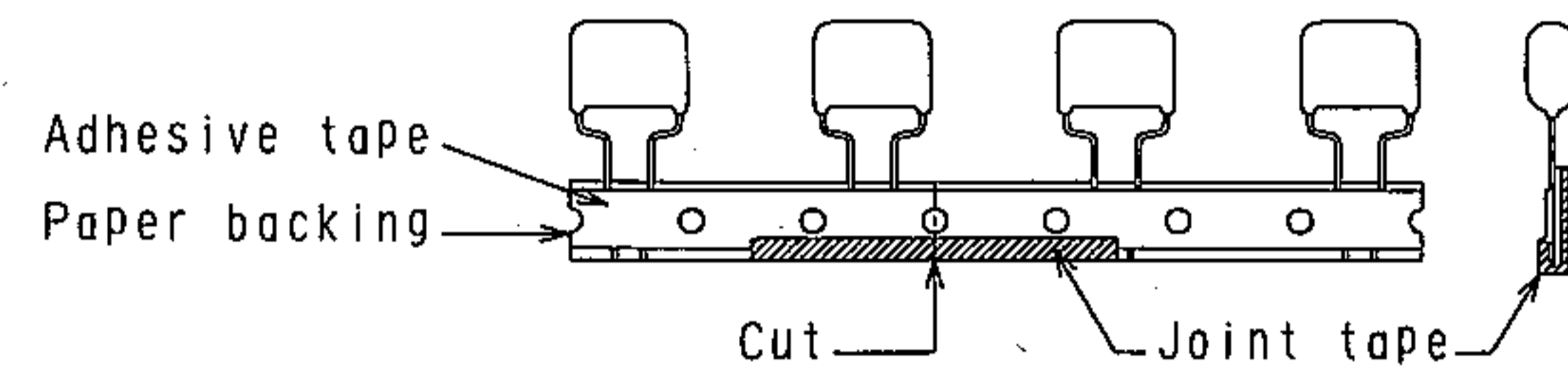
DO NOT SCALE DRAWING

REVISIONS INDICATED BY  $\Delta$

ALL DIMENSIONS ARE IN MILLIMETERS

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.

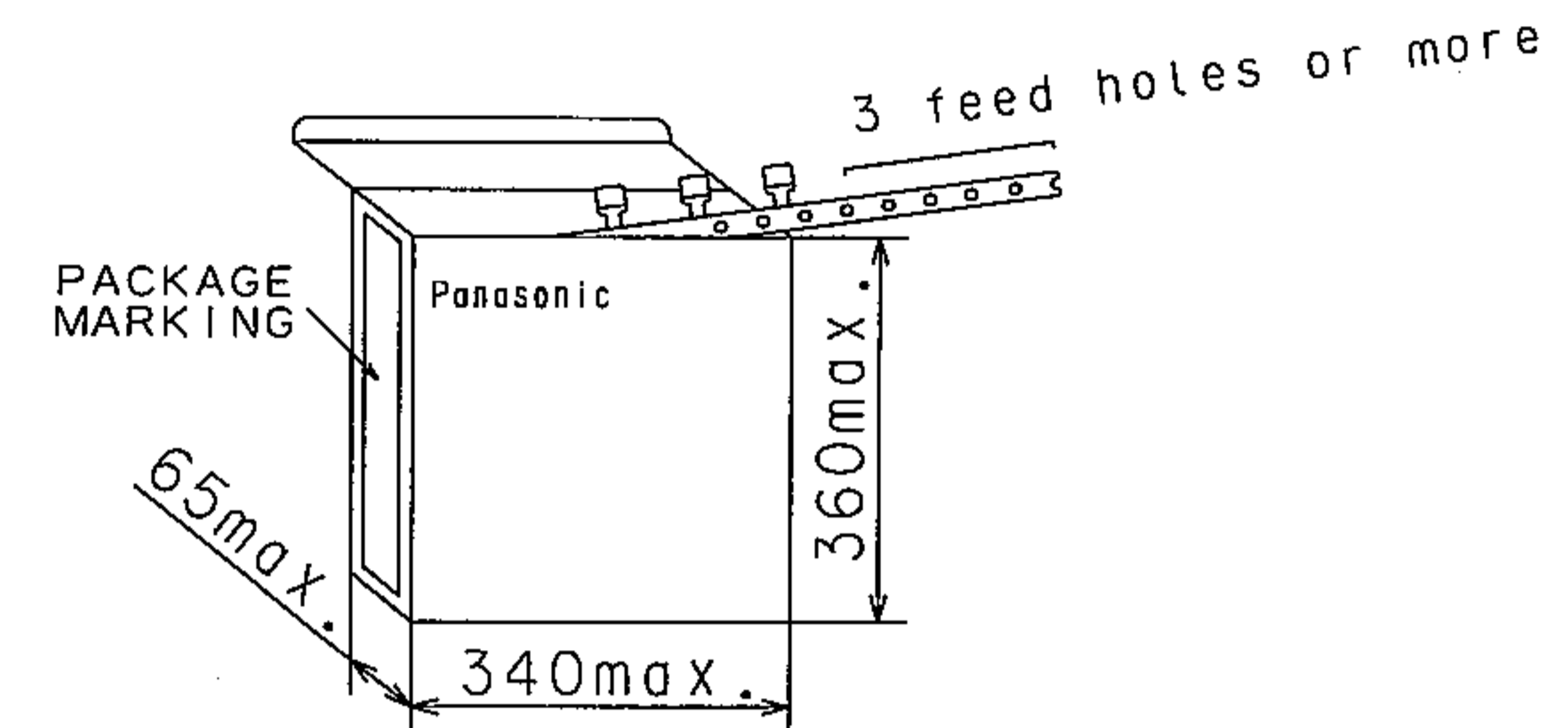


A tape sliding shall not exceed in an allowance of "P<sub>0</sub>" dimension.  
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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
0.68 $\mu$ F	500
1.0 $\mu$ 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	ECQE2W***R()H
DRAWING No.	5034M-J-E (2/2)

Panasonic Electronic Devices Co.,Ltd.  
 Capacitor Business Unit  
 Panasonic Electronic Devices Matsue Co.,Ltd.