

THIRD ANGLE PROJECTION

ITEM CODE	CAP. μF (*)	DIMENSIONS					VOLUME (mm ³)	ITEM CODE	CAP. μF (*)	DIMENSIONS					VOLUME (mm ³)
		※L	※T	※H	※H ₁	※d				※L	※T	※H	※H ₁	※d	
ECWHA3C102 () 4	0.001 (102)	17.8	5.2	8.0	29.0	0.6	605	ECWHA3C103 () 4	0.010 (103)	20.3	6.4	12.3	33.3	0.6	1345
" 3C112 () 4	0.0011 (112)	"	5.4	8.1	29.1	"	634	" 3C113 () 4	0.011 (113)	"	6.6	12.5	33.5	"	1407
" 3C122 () 4	0.0012 (122)	"	5.5	8.2	29.2	"	652	" 3C123 () 4	0.012 (123)	"	6.8	12.8	33.8	"	1491
" 3C132 () 4	0.0013 (132)	"	5.7	8.4	29.4	"	691	" 3C133 () 4	0.013 (133)	"	7.1	13.0	34.0	"	1578
" 3C152 () 4	0.0015 (152)	"	5.9	8.7	29.7	"	742	" 3C153 () 4	0.015 (153)	"	7.6	13.5	34.5	"	1736
" 3C162 () 4	0.0016 (162)	"	6.1	8.9	29.9	"	775	" 3C163 () 4	0.016 (163)	"	7.9	13.8	34.8	"	1829
" 3C182 () 4	0.0018 (182)	"	6.4	9.1	30.1	"	830	" 3C183 () 4	0.018 (183)	20.6	8.2	14.1	35.1	0.8	1998
" 3C202 () 4	0.002 (202)	"	6.6	9.3	30.3	"	873	" 3C203 () 4	0.02 (203)	"	8.7	14.6	35.6	"	2175
" 3C222 () 4	0.0022 (222)	"	6.7	9.5	30.5	"	909	" 3C223 () 4	0.022 (223)	"	9.1	15.0	36.0	"	2320
" 3C242 () 4	0.0024 (242)	"	7.0	9.7	30.7	"	970	" 3C243 () 4	0.024 (243)	"	9.6	15.4	36.4	"	2510
" 3C272 () 4	0.0027 (272)	"	5.2	8.0	29.0	"	605	" 3C273 () 4	0.027 (273)	"	10.0	15.9	36.9	"	2707
" 3C302 () 4	0.003 (302)	"	5.5	8.2	29.2	"	652	" 3C303 () 4	0.03 (303)	"	10.7	16.5	37.5	"	2989
" 3C332 () 4	0.0033 (332)	"	5.6	8.4	29.4	"	683	" 3C333 () 4	0.033 (333)	"	11.2	17.0	38.0	"	3203
" 3C362 () 4	0.0036 (362)	"	5.7	8.5	29.5	"	702	" 3C363 () 4	0.036 (363)	"	11.7	17.5	38.5	"	3425
" 3C392 () 4	0.0039 (392)	"	6.0	8.8	29.8	"	754	" 3C393 () 4	0.039 (393)	"	12.1	18.0	39.0	"	3654
" 3C432 () 4	0.0043 (432)	"	6.2	8.9	29.9	"	788	" 3C433 () 4	0.043 (433)	"	12.8	18.6	39.6	"	3979
" 3C472 () 4	0.0047 (472)	"	6.4	9.1	30.1	"	830	" 3C473 () 4	0.047 (473)	"	13.4	19.2	40.2	"	4277
" 3C512 () 4	0.0051 (512)	"	6.6	9.4	30.4	"	887								
" 3C562 () 4	0.0056 (562)	"	6.8	9.6	30.6	"	932								
" 3C622 () 4	0.0062 (622)	"	7.1	9.8	30.8	"	993								
" 3C682 () 4	0.0068 (682)	"	6.1	12.1	33.1	"	1109								
" 3C752 () 4	0.0075 (752)	"	6.5	12.4	33.4	"	1207								
" 3C822 () 4	0.0082 (822)	"	6.8	12.7	33.7	"	1280								
" 3C912 () 4	0.0091 (912)	"	7.1	13.0	34.0	"	1356								

↑ TOL. SYMBOL (H or J)

MARKING EXAMPLE

W H A 3 C
1 0 3 H
↑
date code

UNIT of MINIMUM ORDER

Capacitance range (μF)	Quantity (pcs.)
0.001, 0.0011, 0.0027	600
0.0012 ~ 0.0018 0.003 ~ 0.0047 0.0068, 0.01	500
0.002 ~ 0.0024 0.0051 ~ 0.0062 0.0075 ~ 0.0091	400
0.011 ~ 0.016 0.018 ~ 0.027	300
0.03 ~ 0.047	200

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 "WHA" and manufacturer's date code.

PROPERTIES

- *Capacitance : See table at 1kHz.
- *Capacitance tolerance : ±3% (H), ±5% (J) at 1kHz.
- *Rated voltage : 1600VDC
- *Withstand voltage (terminal-terminal) : 1600VDC×150% for 60s
- *Insulation resistance : ≥30000MΩ at 500VDC, 20°C for 60s
- *Dissipation factor : ≤0.1% at 1kHz, 20°C
- *Category temperature range : From -40°C to +105°C
(including temperature rise on unit surface)

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

ALTERATION

ISSUE	DESCRIPTION	DATE
△	Company name changed Correction	Apr. 1 2012
△	Company name changed	Apr. 1 2013
△	Company name changed	Apr. 1 2015

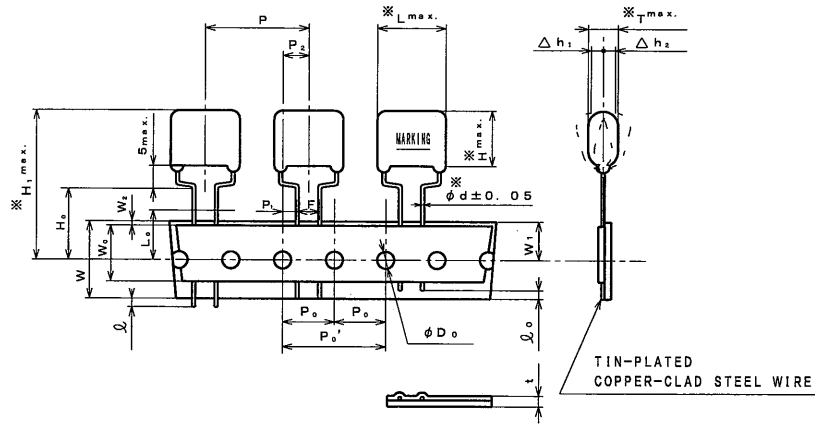
SPECIFICATIONS No.

Reference

DESIGN	<i>M. Arakawa</i>
CHECKED	<i>M. Yamaguchi</i>
APPROVAL	<i>T. Takata</i>
ESTABLISHMENT	Oct. 19, 2011
TYPE NAME	ECWHA3C*** () 4
NAME	Metallized Polypropylene Film Capacitor
DRAWING NAME	PRODUCT DRAWING
DRAWING No.	A023J-J-E (1/2)

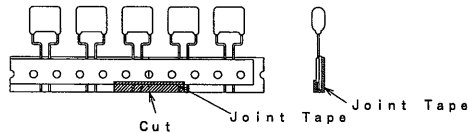
Toyama-Matsue Plant
Device Solutions Business Division
Panasonic Corporation

THIRD ANGLE PROJECTION



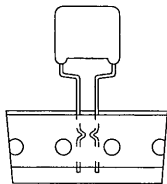
SYMBOL	ITEM	VALUE	TOLERANCE	REMARKS
P	Pitch of component	30.0	±1.0	Tilt of component and curvature of leads shall be included.
P ₀	Feed hole pitch	30.0	±0.2	
P ₁	Feed hole center to lead	15.0	±0.2	
P ₂	Feed hole center to comp. center	7.5	±0.5	
F	Lead-to-lead distance	7.5	±1.3	Tilt of component due to curvature of leads shall be included.
Δh _{1,2}	Component alignment	7.5	+0.8 -0.2	
W	Paper backing width	0~2.0		Tilt of component due to curvature of leads shall be included.
W ₀	Adhesive tape width	18.0	±0.5	
W ₁	Hole position	12.5	min.	The hold down tape shall not protrude beyond the carrier tape.
W ₂	Hold-down tape position	9.0	±0.5	
H ₀	Lead-wire clinch height	0~3.0		
l	Lead wire protrusion	16.0	+1.0	
l ₂	Lead wire depression	0	max.	
φD ₀	Feed hole diameter	7.0	max.	
t	Total tape thickness	4.0	±0.2	
L ₀	Length of snapped lead	0.7	±0.2	Total thickness including the hold down tape.
		11.0	max.	

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



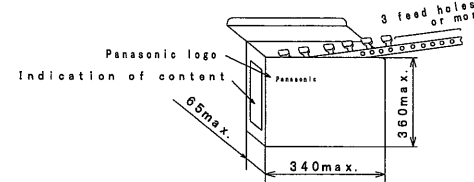
A tape sliding shall not exceed in an allowance of "P₀" dimension.
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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.
 Note 6. The lead clinch at the tape, shows as follows.



Packing specification

1. Case size (Ammo pack)



2. Packing quantity

Capacitance range (μF)	Quantity (pcs.)
0.001, 0.0011, 0.0027	600
0.0012 ~ 0.0018 0.003 ~ 0.0047 0.0068, 0.01	500
0.002 ~ 0.0024 0.0051 ~ 0.0062 0.0075 ~ 0.0091 0.011 ~ 0.016	400
0.018 ~ 0.027	300
0.03 ~ 0.047	200

Handling notes

- One package must be packed one product only.
- The storage must be stacked 5 boxes or less.
(Surface printed placing upward)
(For prevention from displacement of capacitors and damage of lead crimping)
- The packing box must be handled with care and never thrown out.

Reference

TYPE NAME
 ECWHA3C*** () 4
 DRAWING No.
 A023J-J-E (2/2)

Toyama-Matsue Plant
 Device Solutions Business Division
 Panasonic Corporation