

THIRD ANGLE PROJECTION

| ITEM CODE | RATED VOLTAGE | CAP. (μ F) | DIMENSIONS | | | |
|--------------|---------------|-----------------|------------|-----|------|-----|
| | | | *L | *T | *H | *d |
| ECQE6103()F3 | 630VDC | 0.01 | 12.0 | 4.5 | 7.5 | 0.6 |
| # 6123()F3 | # | 0.012 | # | # | 7.8 | # |
| # 6153()F3 | # | 0.015 | # | 5.0 | 8.2 | # |
| # 6183()F3 | # | 0.018 | # | 4.9 | 10.0 | # |
| # 6223()F3 | # | 0.022 | # | 5.3 | 10.5 | # |
| # 6273()F3 | # | 0.027 | # | 5.5 | 10.9 | # |
| # 6333()F3 | # | 0.033 | # | 6.0 | 11.9 | # |

TOL. SYMBOL (J or K)

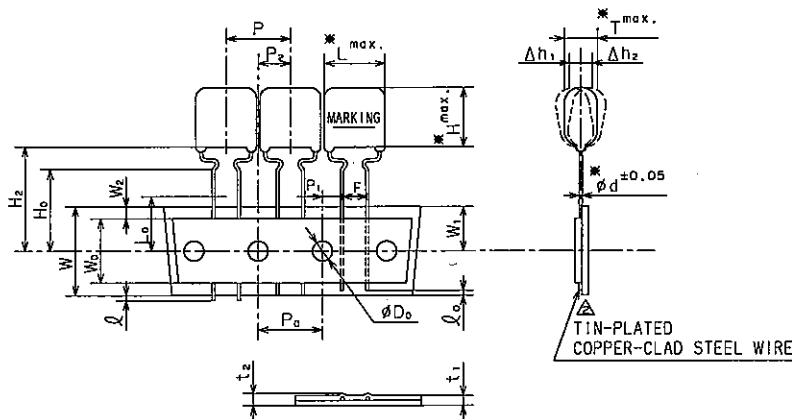
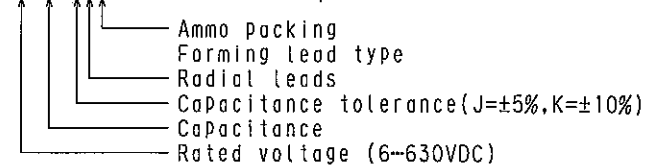
ALTERATION

| ISSUE | DESCRIPTION | DATE |
|-------|----------------------|--------------|
| △ | Overall rewriting | Nov. 7 1998 |
| △ | Modification | Jun. 20 2002 |
| △ | Company name changed | Oct. 1 2004 |
| △ | Company name changed | Apr. 1 2005 |

SPECIFICATIONS No.
TE72036Y

ITEM CODE NUMBER STRUCTURE

ECQE 6103KF3 (630VDC, 0.01 μ F, \pm 10%)



| 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 | 6.35 \pm 1.3 | Tilt of component due to curvature of leads shall be included. |
| F | Lead-to-lead distance | 5.0 \pm 0.2 | |
| Ah _{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 ₂ | Component height | 22.0 \pm 0.75 | |
| H ₀ | Lead-wire clinch height | 16.0 \pm 0.5 | |
| l | Lead-wire protrusion | 0max. | |
| l ₀ | Lead-wire depression | 7.0max. | |
| phi 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 snipped lead | 11.0max. | |

Reference

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.

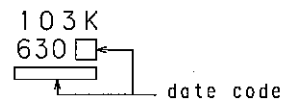
MARKING

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 : 630VDC
 Withstand voltage : 630VDCx150% for 60s
 Insulation resistance : \geq 9000M Ω 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 +85 $^{\circ}$ C
 (including temperature rise on unit surface)

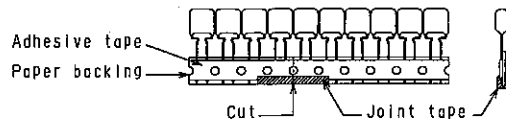
MARKING EXAMPLE



| | |
|---------------|-------------------------------------|
| DESIGN | E. Toboda |
| CHECKED | M. Nishikori |
| APPROVAL | M. Nagata |
| ESTABLISHMENT | Apr. 27, 1987 |
| TYPE NAME | ECQE6***()F3 |
| NAME | Metallized Polyester Film Capacitor |
| DRAWING NAME | PRODUCT DRAWING |
| DRAWING No. | CT-H-C019 (1/2) |

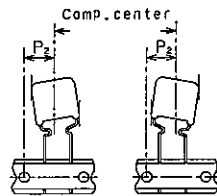
Panasonic Electronic Circuit Capacitor Business Unit,
Panasonic Electronic Devices Co., Ltd.

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

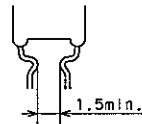


A tape sliding shall not exceed in an allowance of "Pa" dimension.
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

- 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 P_1 and P_2 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 P_2 dimension shall be measured between center of a vertical projection plane for tape plane and center of sprocket hole.

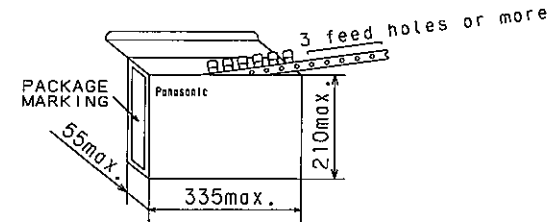


Note 7. The lead crimping shape shows as follows.



Packing specification

1. Case size
Ammo pack



2. Packing quantity

| Capacitance range | Packing quantity |
|--------------------|------------------|
| 0.01~0.027 μ F | 1000 |
| 0.033 μ F | 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 | ECQE6***()F3 |
| DRAWING No. | CT-H-C019 (2/2) |

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

THIRD ANGLE PROJECTION

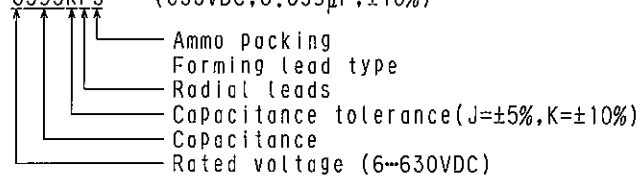
| ITEM CODE | RATED VOLTAGE | CAP. (μ F) | DIMENSIONS | | | | |
|--------------|---------------|-----------------|------------|-----|------|-----|-----------------|
| | | | *L | *T | *H | *d | *H ₁ |
| ECQE6393()F3 | 630VDC | 0.039 | 12.0 | 6.0 | 13.4 | 0.6 | 34.9 |
| # 6473()F3 | # | 0.047 | # | 6.5 | 13.5 | # | 35.0 |

TOL. SYMBOL (J or K)

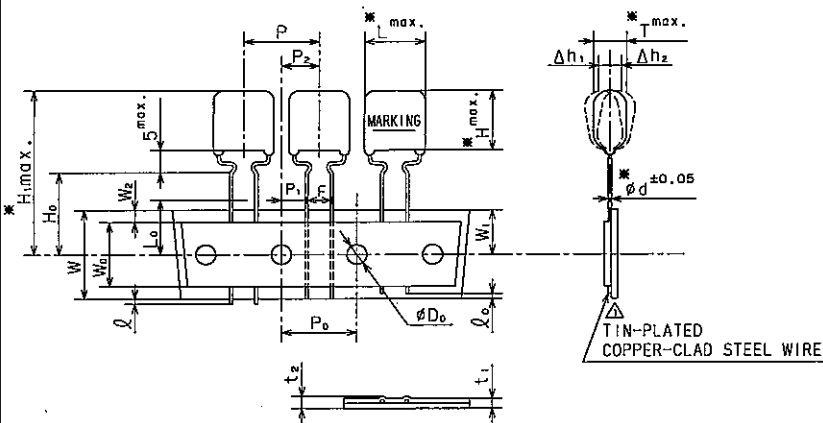
| ALTERATION | | |
|------------|--------------------------------|-------------|
| ISSUE | DESCRIPTION | DATE |
| △ | Overall rewriting Modification | Jun.20 2002 |
| △ | Company name changed | Oct. 1 2004 |
| △ | Company name changed | Apr. 1 2005 |

ITEM CODE NUMBER STRUCTURE

ECQE 6393KF3 (630VDC, 0.039 μ F, \pm 10%)



SPECIFICATIONS No.



| 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 0.8 | |
| Δ _{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 | |
| g | Lead-wire protrusion | 0max. | |
| t ₀ | 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. | |

Reference

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.

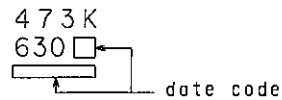
MARKING

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 : 630VDC
 Withstand voltage : 630VDC \times 150% for 60s
 Insulation resistance : \geq 9000M Ω 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 +85 $^{\circ}$ C (including temperature rise on unit surface)

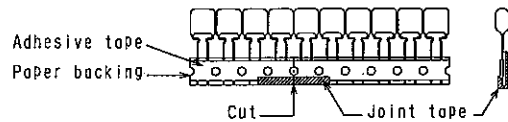
MARKING EXAMPLE



| | |
|---------------|-------------------------------------|
| DESIGN | E. Tabada |
| CHECKED | M. Nishikori |
| APPROVAL | M. Nagasaka |
| ESTABLISHMENT | Apr. 28, 1994 |
| TYPE NAME | ECQE6***()F3 |
| NAME | Metallized Polyester Film Capacitor |
| DRAWING NAME | PRODUCT DRAWING |
| DRAWING No. | CT-H-415E (1/2) |

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

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

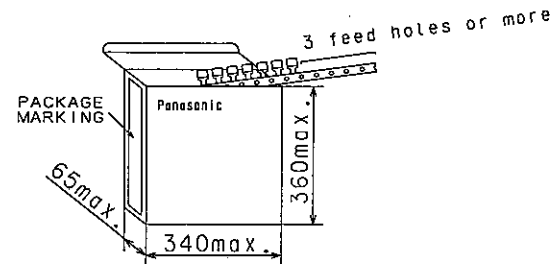


A tape sliding shall not exceed in an allowance of "P₀" dimension.
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

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 |
|----------------------|------------------|
| 0.039, 0.047 μ F | 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 | ECQE6***()F3 |
| DRAWING No. | CT-H-415E (2/2) |

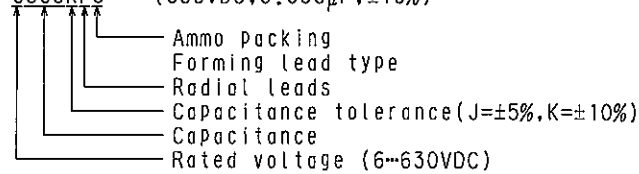
Panasonic Electronic Circuit Capacitor Business Unit,
 Panasonic Electronic Devices Co., Ltd.

THIRD ANGLE PROJECTION

| ITEM CODE | RATED VOLTAGE | CAP. (μ F) | DIMENSIONS | | | | |
|---------------|---------------|-----------------|------------|-----|------|-----|-----------------|
| | | | *L | *T | *H | *d | *H ₁ |
| ECQE6563(J)F3 | 630VDC | 0.056 | 18.5 | 5.4 | 10.5 | 0.6 | 32.0 |
| # 6683(J)F3 | # | 0.068 | # | 5.8 | 11.0 | # | 32.5 |
| # 6823(J)F3 | # | 0.082 | # | 6.5 | 12.0 | # | 33.5 |
| # 6104(J)F3 | # | 0.1 | # | 6.3 | 14.0 | # | 35.5 |
| # 6124(J)F3 | # | 0.12 | # | # | 14.5 | 0.8 | 36.0 |
| # 6154(J)F3 | # | 0.15 | # | 7.5 | 15.4 | # | 36.9 |
| # 6184(J)F3 | # | 0.18 | # | 8.0 | 16.0 | # | 37.5 |
| # 6224(J)F3 | # | 0.22 | # | 9.0 | 16.5 | # | 38.0 |

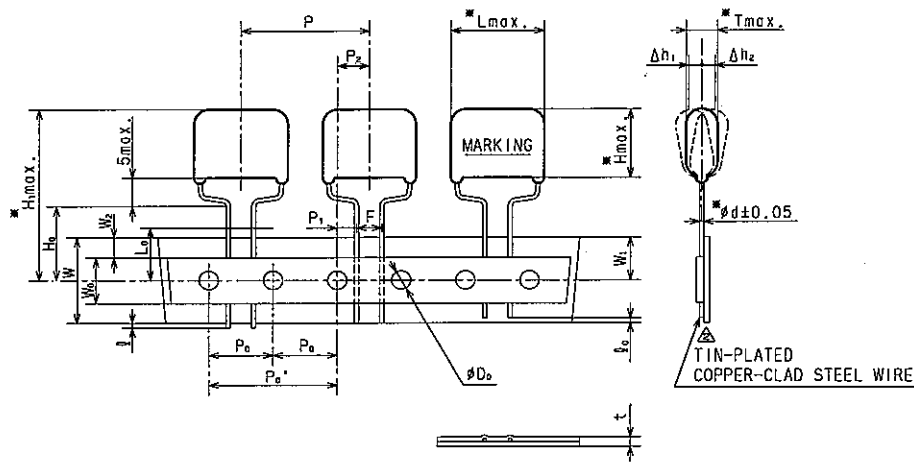
ITEM CODE NUMBER STRUCTURE

ECQE 6563KF3 (630VDC,0.056 μ F,±10%)



| ALTERATION | | |
|------------|----------------------|-------------|
| ISSUE | DESCRIPTION | DATE |
| △ | Overall rewriting | Aug.31 2000 |
| △ | Modification | Jun.20 2002 |
| △ | Company name changed | Oct. 1 2004 |
| △ | Company name changed | Apr. 1 2005 |

SPECIFICATIONS No.
TEB8253H



| SYMBOL | ITEM | DIMENSION | REMARKS |
|-------------------|-----------------------------|-----------|--|
| P | Pitch of component | 25.4±1.0 | Tilt of component and curvature of leads shall be included. |
| P ₀ | Feed hole pitch | 12.7±0.2 | |
| P ₀ ' | # | 25.4±0.2 | |
| P ₁ | Feed hole center to lead | 3.85±0.5 | |
| P ₂ | 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±0.2 | |
| Δh _{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 | 12.5min. | 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±0.5 | |
| t | Lead-wire protrusion | 0max. | |
| t ₀ | Lead-wire depression | 7.0max. | |
| 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 | 11.0max. | |

Reference

| | |
|---------------|-------------------------------------|
| DESIGN | E. Takeda |
| CHECKED | M. Nishikori |
| APPROVAL | M. Magawa |
| ESTABLISHMENT | Apr.28.1994 |
| TYPE NAME | ECQE6***()F3 |
| NAME | Metallized Polyester Film Capacitor |
| DRAWING NAME | PRODUCT DRAWING |
| DRAWING No. | CT-H-416E (1/2) |

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.

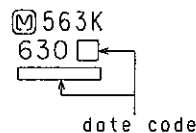
MARKING

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) at 1kHz
 Rated voltage : 630VDC
 Withstand voltage : 630VDCx150% for 60s
 Insulation resistance : ≥9000MΩ at 100VDC, 20°C for 60s
 Dissipation factor : ≤1.0% at 1kHz, 20°C
 Category temperature range : From -40°C to +85°C
 (including temperature rise on unit surface)

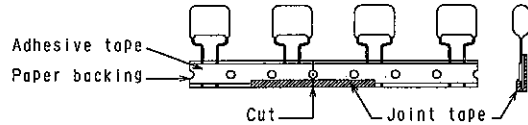
MARKING EXAMPLE



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

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

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

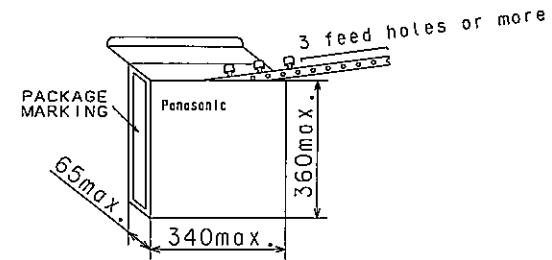


A tape sliding shall not exceed in an allowance of "P₀" dimension.
 A joint tape put on the back side of paper backing, and turn up the lower part to the front.

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 |
|--------------------|------------------|
| 0.056~0.18 μ F | 500 |
| 0.22 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 | ECQE6***()F3 |
| DRAWING No. | CT-H-416E (2/2) |

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