

MLCC with Dipped Radial Lead

Halogen-free, Automotive Grade, High Temperature Application

FA Series (NP0, X8R)

| | | |
|--------------|-------------------|--|
| Type: | Lead pitch | 5.0 mm FA28 [4.0x5.5 mm] FA24 [4.5x5.5 mm] FA26 [5.5x6.0 mm] FA20 [5.5x7.0 mm] FA22 [7.5x8.5 mm] |
| | Lead pitch | 2.5 mm FA18 [4.0x5.5 mm] FA14 [4.5x5.5 mm] FA16 [5.5x6.0 mm] FA11 [5.5x7.0 mm] |



REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

REMINDERS

- Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
- Before soldering, be sure to preheat components.
The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- Soldering corrections after mounting should be within the range of the conditions determined in the specifications.
If overheated, a short circuit, performance deterioration, or lifespan shortening may occur.
- Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design.
- Do not use for a purpose outside of the contents regulated in the delivery specifications.

- The products listed on this catalog are intended for use in automotive electronic equipment under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

- | | |
|---|--|
| (1) Aerospace/Aviation equipment | (8) Public information-processing equipment |
| (2) Transportation equipment (electric trains, ships, etc.) | (9) Military equipment |
| (3) Medical equipment | (10) Electric heating apparatus, burning equipment |
| (4) Power-generation control equipment | (11) Disaster prevention/crime prevention equipment |
| (5) Atomic energy-related equipment | (12) Safety equipment |
| (6) Seabed equipment | (13) Other applications that are not considered general-purpose applications |
| (7) Transportation control equipment | |

When designing your equipment even for automotive-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.

MLCC with Dipped Radial Lead

Product compatible with RoHS directive
Halogen-free

Halogen-free, Automotive Grade, High Temperature Application

Overview of the FA Series

FEATURES

- A lineup with a rated voltage of 25V to 100V.
- Compatible with a wide capacitance range of 10pF to 4.7μF.
- For guaranteed applications withstanding rigorous temperature environments of up to 150°C.
- The FA series for automotive use is AEC-Q200 compliant.

APPLICATION

- Noise reduction measures for various motors for automotive use
- Resonant circuits in areas such as keyless entry systems
- Bypass capacitors such as for switching power sources, smoothing capacitors, etc.
- Snubber circuits
- PFC input filters

PART NUMBER CONSTRUCTION

| FA | 2 | 8 | NP0 | 1H | 100 | D | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|-------------|-----------------|-----------------------|---|-------------------|---------------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Series name | Lead pitch (mm) | LxWxT Dimensions (mm) | Capacitance temperature characteristics | Rated voltage (V) | Nominal capacitance | Capacitance tolerance* | Internal code | Packaging Style** | | |
| | 1 2.5 | 8 4.0x5.5x2.5 | NP0 0±30ppm/°C | 1E 25 | 100 10pF | D ±0.5pF | | 0 Bulk | | |
| | 2 5.0 | 4 4.5x5.5x3.0 | X8R ±15% | 1H 50 | 101 100pF | J ±5% | | 6 Taping | | |
| | | 6 5.5x6.0x3.5 | | 2A 100 | 102 1,000pF | K ±10% | | | | |
| | | 0 5.5x7.0x4.0 | | | 105 1uF | | | | | |
| | | 1 5.5x7.0x4.0 | | | | | | | | |
| | | 2 7.5x8.5x4.5 | | | | | | | | |

* Applicable capacitance range: Max. 10 pF for D, over 10 pF for J and K.


** Applied to the TDK's standard specification products.

OPERATING TEMPERATURE RANGE

| Capacitance temperature characteristics | Operating temperature range | |
|---|-----------------------------|----------------------|
| | Operating temperature | Storage temperature* |
| | (°C) | (°C) |
| NP0, X8R | -55 to +150 | -55 to +150 |

* The Storage temperature range is for after the circuit board is mounted.

- RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. <http://product.tdk.com/en/environment/rohs/>
- Halogen-free: Indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

 Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.

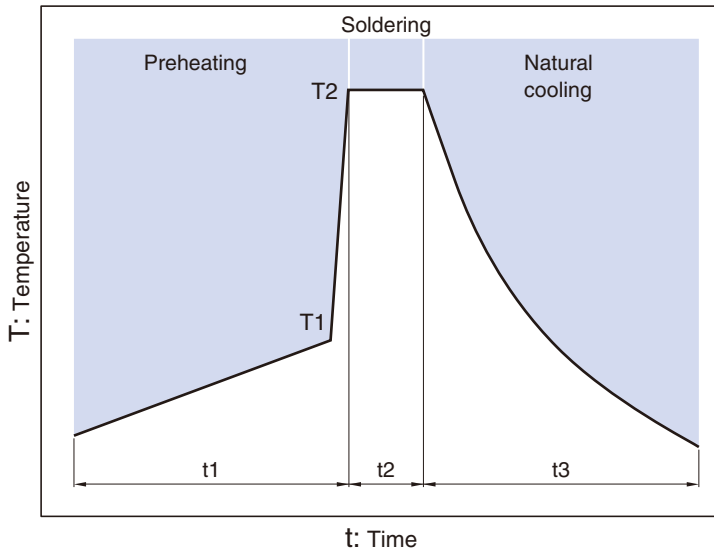
Overview of the FA Series

■ PACKAGE QUANTITY

| Type | Package quantity | |
|------|-----------------------|---------------------|
| | Taping (pieces / box) | Bulk (pieces / bag) |
| FA28 | 2000 | 500 |
| FA24 | 2000 | 500 |
| FA26 | 2000 | 500 |
| FA20 | 1500 | 500 |
| FA22 | 1000 | 500 |
| FA18 | 2000 | 500 |
| FA14 | 2000 | 500 |
| FA16 | 2000 | 500 |
| FA11 | 1500 | 500 |

Overview of the FA Series

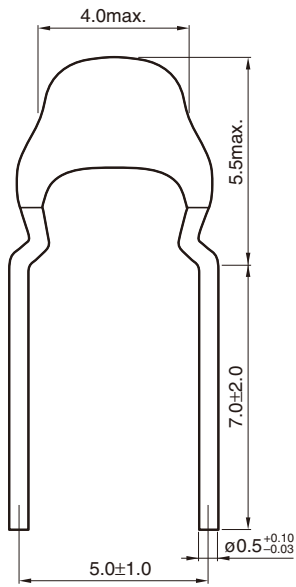
RECOMMENDED FLOW PROFILE



| Preheating | | Peak | | Natural cooling |
|------------|-----------|-------|------------|-----------------|
| Temp. | Time | Temp. | Time | Time |
| T1 | t1 | T2 | t2 | t3 |
| 110°C min. | Over 60s. | 260°C | Within 5s. | Over 60s. |

FA28 Type

■ SHAPE & DIMENSIONS



Dimensions in mm



FA28 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| NPO | 10pF | ±0.5pF | 50 | FA28NP01H100DNU0□** |
| NPO | 15pF | ±5% | 50 | FA28NP01H150JNU0□ |
| NPO | 22pF | ±5% | 50 | FA28NP01H220JNU0□ |
| NPO | 33pF | ±5% | 50 | FA28NP01H330JNU0□ |
| NPO | 47pF | ±5% | 50 | FA28NP01H470JNU0□ |
| NPO | 68pF | ±5% | 50 | FA28NP01H680JNU0□ |
| NPO | 100pF | ±5% | 50 | FA28NP01H101JNU0□ |
| NPO | 120pF | ±5% | 50 | FA28NP01H121JNU0□ |
| NPO | 150pF | ±5% | 50 | FA28NP01H151JNU0□ |
| NPO | 180pF | ±5% | 50 | FA28NP01H181JNU0□ |
| NPO | 220pF | ±5% | 50 | FA28NP01H221JNU0□ |
| NPO | 270pF | ±5% | 50 | FA28NP01H271JNU0□ |
| NPO | 330pF | ±5% | 50 | FA28NP01H331JNU0□ |
| NPO | 390pF | ±5% | 50 | FA28NP01H391JNU0□ |
| NPO | 470pF | ±5% | 50 | FA28NP01H471JNU0□ |
| NPO | 560pF | ±5% | 50 | FA28NP01H561JNU0□ |
| NPO | 680pF | ±5% | 50 | FA28NP01H681JNU0□ |
| NPO | 820pF | ±5% | 50 | FA28NP01H821JNU0□ |
| NPO | 1nF | ±5% | 50 | FA28NP01H102JNU0□ |
| NPO | 1.2nF | ±5% | 50 | FA28NP01H122JNU0□ |
| NPO | 1.5nF | ±5% | 50 | FA28NP01H152JNU0□ |
| NPO | 1.8nF | ±5% | 50 | FA28NP01H182JNU0□ |
| NPO | 2.2nF | ±5% | 50 | FA28NP01H222JNU0□ |
| NPO | 2.7nF | ±5% | 50 | FA28NP01H272JNU0□ |
| NPO | 3.3nF | ±5% | 50 | FA28NP01H332JNU0□ |
| NPO | 3.9nF | ±5% | 50 | FA28NP01H392JNU0□ |
| NPO | 4.7nF | ±5% | 50 | FA28NP01H472JNU0□ |
| NPO | 5.6nF | ±5% | 50 | FA28NP01H562JNU0□ |
| NPO | 6.8nF | ±5% | 50 | FA28NP01H682JNU0□ |
| NPO | 8.2nF | ±5% | 50 | FA28NP01H822JNU0□ |
| NPO | 10nF | ±5% | 50 | FA28NP01H103JNU0□ |
| NPO | 10pF | ±0.5pF | 100 | FA28NP02A100DNU0□ |
| NPO | 15pF | ±5% | 100 | FA28NP02A150JNU0□ |
| NPO | 22pF | ±5% | 100 | FA28NP02A220JNU0□ |
| NPO | 33pF | ±5% | 100 | FA28NP02A330JNU0□ |
| NPO | 47pF | ±5% | 100 | FA28NP02A470JNU0□ |
| NPO | 68pF | ±5% | 100 | FA28NP02A680JNU0□ |
| NPO | 100pF | ±5% | 100 | FA28NP02A101JNU0□ |
| NPO | 120pF | ±5% | 100 | FA28NP02A121JNU0□ |
| NPO | 150pF | ±5% | 100 | FA28NP02A151JNU0□ |
| NPO | 180pF | ±5% | 100 | FA28NP02A181JNU0□ |
| NPO | 220pF | ±5% | 100 | FA28NP02A221JNU0□ |
| NPO | 270pF | ±5% | 100 | FA28NP02A271JNU0□ |
| NPO | 330pF | ±5% | 100 | FA28NP02A331JNU0□ |
| NPO | 390pF | ±5% | 100 | FA28NP02A391JNU0□ |
| NPO | 470pF | ±5% | 100 | FA28NP02A471JNU0□ |
| NPO | 560pF | ±5% | 100 | FA28NP02A561JNU0□ |
| NPO | 680pF | ±5% | 100 | FA28NP02A681JNU0□ |
| NPO | 820pF | ±5% | 100 | FA28NP02A821JNU0□ |
| NPO | 1nF | ±5% | 100 | FA28NP02A102JNU0□ |
| NPO | 1.2nF | ±5% | 100 | FA28NP02A122JNU0□ |
| NPO | 1.5nF | ±5% | 100 | FA28NP02A152JNU0□ |
| NPO | 1.8nF | ±5% | 100 | FA28NP02A182JNU0□ |
| NPO | 2.2nF | ±5% | 100 | FA28NP02A222JNU0□ |
| NPO | 2.7nF | ±5% | 100 | FA28NP02A272JNU0□ |
| NPO | 3.3nF | ±5% | 100 | FA28NP02A332JNU0□ |

* The part numbers are TDK's standard specification products.

** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

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FA28 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 2 (TEMPERATURE STABLE)

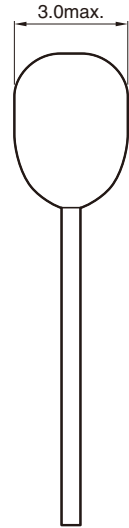
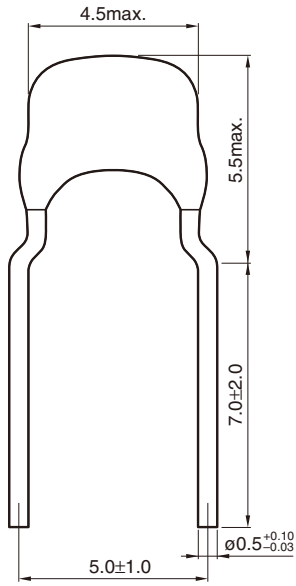
| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| X8R | 68nF | ±10% | 25 | FA28X8R1E683KNU0□** |
| X8R | 100nF | ±10% | 25 | FA28X8R1E104KNU0□ |
| X8R | 150nF | ±10% | 25 | FA28X8R1E154KRU0□ |
| X8R | 220nF | ±10% | 25 | FA28X8R1E224KRU0□ |
| X8R | 1nF | ±10% | 50 | FA28X8R1H102KNU0□ |
| X8R | 1.5nF | ±10% | 50 | FA28X8R1H152KNU0□ |
| X8R | 2.2nF | ±10% | 50 | FA28X8R1H222KNU0□ |
| X8R | 3.3nF | ±10% | 50 | FA28X8R1H332KNU0□ |
| X8R | 4.7nF | ±10% | 50 | FA28X8R1H472KNU0□ |
| X8R | 6.8nF | ±10% | 50 | FA28X8R1H682KNU0□ |
| X8R | 10nF | ±10% | 50 | FA28X8R1H103KNU0□ |
| X8R | 15nF | ±10% | 50 | FA28X8R1H153KNU0□ |
| X8R | 22nF | ±10% | 50 | FA28X8R1H223KNU0□ |
| X8R | 33nF | ±10% | 50 | FA28X8R1H333KNU0□ |
| X8R | 47nF | ±10% | 50 | FA28X8R1H473KNU0□ |
| X8R | 68nF | ±10% | 50 | FA28X8R1H683KRU0□ |
| X8R | 100nF | ±10% | 50 | FA28X8R1H104KRU0□ |
| X8R | 1nF | ±10% | 100 | FA28X8R2A102KNU0□ |
| X8R | 1.5nF | ±10% | 100 | FA28X8R2A152KNU0□ |
| X8R | 2.2nF | ±10% | 100 | FA28X8R2A222KNU0□ |
| X8R | 3.3nF | ±10% | 100 | FA28X8R2A332KNU0□ |
| X8R | 4.7nF | ±10% | 100 | FA28X8R2A472KNU0□ |
| X8R | 6.8nF | ±10% | 100 | FA28X8R2A682KNU0□ |
| X8R | 10nF | ±10% | 100 | FA28X8R2A103KNU0□ |
| X8R | 15nF | ±10% | 100 | FA28X8R2A153KNU0□ |
| X8R | 22nF | ±10% | 100 | FA28X8R2A223KRU0□ |
| X8R | 33nF | ±10% | 100 | FA28X8R2A333KRU0□ |

* The part numbers are TDK's standard specification products.

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FA24 Type

■ SHAPE & DIMENSIONS



Dimensions in mm



FA24 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|--------------------------|---------------------|
| NPO | 15nF | ±5% | 50 | FA24NP01H153JNU0□** |
| NPO | 22nF | ±5% | 50 | FA24NP01H223JNU0□ |
| NPO | 33nF | ±5% | 50 | FA24NP01H333JNU0□ |
| NPO | 3.9nF | ±5% | 100 | FA24NP02A392JNU0□ |
| NPO | 4.7nF | ±5% | 100 | FA24NP02A472JNU0□ |
| NPO | 5.6nF | ±5% | 100 | FA24NP02A562JNU0□ |
| NPO | 6.8nF | ±5% | 100 | FA24NP02A682JNU0□ |
| NPO | 8.2nF | ±5% | 100 | FA24NP02A822JNU0□ |
| NPO | 10nF | ±5% | 100 | FA24NP02A103JNU0□ |

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CLASS 2 (TEMPERATURE STABLE)

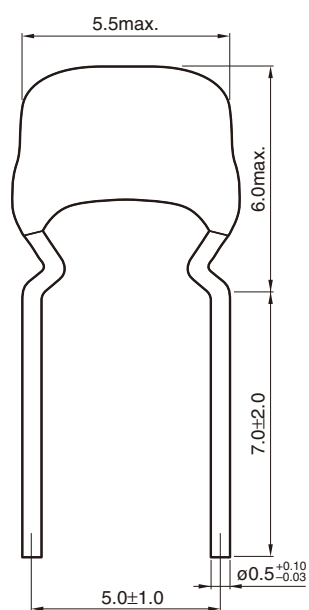
| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|--------------------------|---------------------|
| X8R | 150nF | ±10% | 25 | FA24X8R1E154KNU0□** |
| X8R | 220nF | ±10% | 25 | FA24X8R1E224KNU0□ |
| X8R | 330nF | ±10% | 25 | FA24X8R1E334KNU0□ |
| X8R | 470nF | ±10% | 25 | FA24X8R1E474KRU0□ |
| X8R | 68nF | ±10% | 50 | FA24X8R1H683KNU0□ |
| X8R | 100nF | ±10% | 50 | FA24X8R1H104KNU0□ |
| X8R | 150nF | ±10% | 50 | FA24X8R1H154KRU0□ |
| X8R | 220nF | ±10% | 50 | FA24X8R1H224KRU0□ |
| X8R | 22nF | ±10% | 100 | FA24X8R2A223KNU0□ |
| X8R | 47nF | ±10% | 100 | FA24X8R2A473KRU0□ |
| X8R | 68nF | ±10% | 100 | FA24X8R2A683KRU0□ |

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FA26 Type

■ SHAPE & DIMENSIONS



Dimensions in mm



FA26 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| NPO | 47nF | ±5% | 50 | FA26NP01H473JNU0□** |
| NPO | 68nF | ±5% | 50 | FA26NP01H683JNU0□ |
| NPO | 100nF | ±5% | 50 | FA26NP01H104JNU0□ |
| NPO | 15nF | ±5% | 100 | FA26NP02A153JNU0□ |
| NPO | 22nF | ±5% | 100 | FA26NP02A223JNU0□ |
| NPO | 33nF | ±5% | 100 | FA26NP02A333JNU0□ |

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** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

CLASS 2 (TEMPERATURE STABLE)

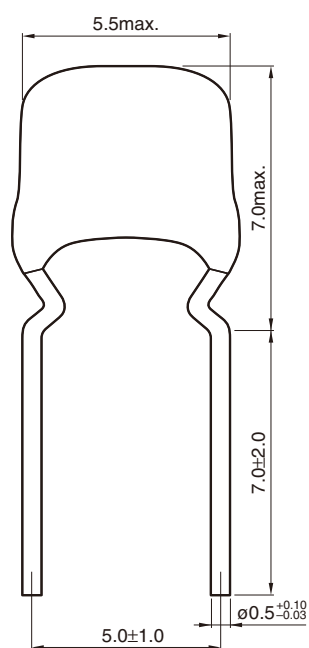
| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| X8R | 470nF | ±10% | 25 | FA26X8R1E474KNU0□** |
| X8R | 680nF | ±10% | 25 | FA26X8R1E684KNU0□ |
| X8R | 1uF | ±10% | 25 | FA26X8R1E105KNU0□ |
| X8R | 1.5uF | ±10% | 25 | FA26X8R1E155KRU0□ |
| X8R | 2.2uF | ±10% | 25 | FA26X8R1E225KRU0□ |
| X8R | 150nF | ±10% | 50 | FA26X8R1H154KNU0□ |
| X8R | 220nF | ±10% | 50 | FA26X8R1H224KNU0□ |
| X8R | 330nF | ±10% | 50 | FA26X8R1H334KNU0□ |
| X8R | 470nF | ±10% | 50 | FA26X8R1H474KNU0□ |
| X8R | 680nF | ±10% | 50 | FA26X8R1H684KRU0□ |
| X8R | 1uF | ±10% | 50 | FA26X8R1H105KRU0□ |
| X8R | 33nF | ±10% | 100 | FA26X8R2A333KNU0□ |
| X8R | 47nF | ±10% | 100 | FA26X8R2A473KNU0□ |
| X8R | 68nF | ±10% | 100 | FA26X8R2A683KNU0□ |
| X8R | 100nF | ±10% | 100 | FA26X8R2A104KNU0□ |
| X8R | 150nF | ±10% | 100 | FA26X8R2A154KNU0□ |
| X8R | 220nF | ±10% | 100 | FA26X8R2A224KRU0□ |
| X8R | 330nF | ±10% | 100 | FA26X8R2A334KRU0□ |

* The part numbers are TDK's standard specification products.

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FA20 Type

■ SHAPE & DIMENSIONS



Dimensions in mm



FA20 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| NPO | 47nF | ±5% | 100 | FA20NP02A473JNU0□** |
| NPO | 68nF | ±5% | 100 | FA20NP02A683JNU0□ |

* The part numbers are TDK's standard specification products.

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CLASS 2 (TEMPERATURE STABLE)

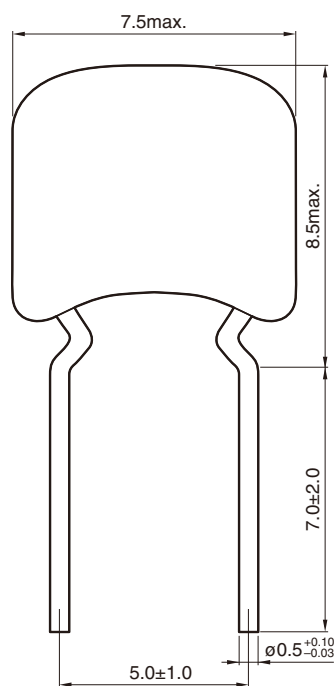
| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| X8R | 1.5uF | ±10% | 25 | FA20X8R1E155KNU0□** |
| X8R | 2.2uF | ±10% | 25 | FA20X8R1E225KNU0□ |
| X8R | 3.3uF | ±10% | 25 | FA20X8R1E335KNU0□ |
| X8R | 4.7uF | ±10% | 25 | FA20X8R1E475KRU0□ |
| X8R | 470nF | ±10% | 100 | FA20X8R2A474KRU0□ |
| X8R | 680nF | ±10% | 100 | FA20X8R2A684KRU0□ |

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** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

FA22 Type

■ SHAPE & DIMENSIONS



Dimensions in mm



Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.

FA22 Type

■ ELECTRICAL CHARACTERISTICS

□ CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

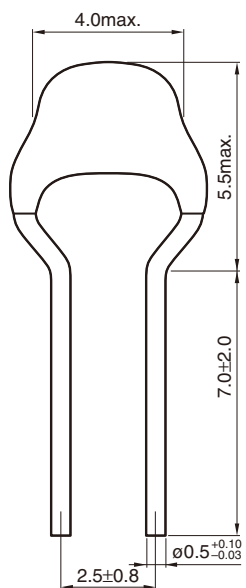
| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|--------------------------|---------------------|
| NPO | 150nF | ±5% | 50 | FA22NP01H154JNU0□** |
| NPO | 220nF | ±5% | 50 | FA22NP01H224JNU0□ |
| NPO | 100nF | ±5% | 100 | FA22NP02A104JNU0□ |

* The part numbers are TDK's standard specification products.

** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

FA18 Type

■ SHAPE & DIMENSIONS



Dimensions in mm



FA18 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| NPO | 10pF | ±0.5pF | 50 | FA18NP01H100DNU0□** |
| NPO | 15pF | ±5% | 50 | FA18NP01H150JNU0□ |
| NPO | 22pF | ±5% | 50 | FA18NP01H220JNU0□ |
| NPO | 33pF | ±5% | 50 | FA18NP01H330JNU0□ |
| NPO | 47pF | ±5% | 50 | FA18NP01H470JNU0□ |
| NPO | 68pF | ±5% | 50 | FA18NP01H680JNU0□ |
| NPO | 100pF | ±5% | 50 | FA18NP01H101JNU0□ |
| NPO | 120pF | ±5% | 50 | FA18NP01H121JNU0□ |
| NPO | 150pF | ±5% | 50 | FA18NP01H151JNU0□ |
| NPO | 180pF | ±5% | 50 | FA18NP01H181JNU0□ |
| NPO | 220pF | ±5% | 50 | FA18NP01H221JNU0□ |
| NPO | 270pF | ±5% | 50 | FA18NP01H271JNU0□ |
| NPO | 330pF | ±5% | 50 | FA18NP01H331JNU0□ |
| NPO | 390pF | ±5% | 50 | FA18NP01H391JNU0□ |
| NPO | 470pF | ±5% | 50 | FA18NP01H471JNU0□ |
| NPO | 560pF | ±5% | 50 | FA18NP01H561JNU0□ |
| NPO | 680pF | ±5% | 50 | FA18NP01H681JNU0□ |
| NPO | 820pF | ±5% | 50 | FA18NP01H821JNU0□ |
| NPO | 1nF | ±5% | 50 | FA18NP01H102JNU0□ |
| NPO | 1.2nF | ±5% | 50 | FA18NP01H122JNU0□ |
| NPO | 1.5nF | ±5% | 50 | FA18NP01H152JNU0□ |
| NPO | 1.8nF | ±5% | 50 | FA18NP01H182JNU0□ |
| NPO | 2.2nF | ±5% | 50 | FA18NP01H222JNU0□ |
| NPO | 2.7nF | ±5% | 50 | FA18NP01H272JNU0□ |
| NPO | 3.3nF | ±5% | 50 | FA18NP01H332JNU0□ |
| NPO | 3.9nF | ±5% | 50 | FA18NP01H392JNU0□ |
| NPO | 4.7nF | ±5% | 50 | FA18NP01H472JNU0□ |
| NPO | 5.6nF | ±5% | 50 | FA18NP01H562JNU0□ |
| NPO | 6.8nF | ±5% | 50 | FA18NP01H682JNU0□ |
| NPO | 8.2nF | ±5% | 50 | FA18NP01H822JNU0□ |
| NPO | 10nF | ±5% | 50 | FA18NP01H103JNU0□ |
| NPO | 10pF | ±0.5pF | 100 | FA18NP02A100DNU0□ |
| NPO | 15pF | ±5% | 100 | FA18NP02A150JNU0□ |
| NPO | 22pF | ±5% | 100 | FA18NP02A220JNU0□ |
| NPO | 33pF | ±5% | 100 | FA18NP02A330JNU0□ |
| NPO | 47pF | ±5% | 100 | FA18NP02A470JNU0□ |
| NPO | 68pF | ±5% | 100 | FA18NP02A680JNU0□ |
| NPO | 100pF | ±5% | 100 | FA18NP02A101JNU0□ |
| NPO | 120pF | ±5% | 100 | FA18NP02A121JNU0□ |
| NPO | 150pF | ±5% | 100 | FA18NP02A151JNU0□ |
| NPO | 180pF | ±5% | 100 | FA18NP02A181JNU0□ |
| NPO | 220pF | ±5% | 100 | FA18NP02A221JNU0□ |
| NPO | 270pF | ±5% | 100 | FA18NP02A271JNU0□ |
| NPO | 330pF | ±5% | 100 | FA18NP02A331JNU0□ |
| NPO | 390pF | ±5% | 100 | FA18NP02A391JNU0□ |
| NPO | 470pF | ±5% | 100 | FA18NP02A471JNU0□ |
| NPO | 560pF | ±5% | 100 | FA18NP02A561JNU0□ |
| NPO | 680pF | ±5% | 100 | FA18NP02A681JNU0□ |
| NPO | 820pF | ±5% | 100 | FA18NP02A821JNU0□ |
| NPO | 1nF | ±5% | 100 | FA18NP02A102JNU0□ |
| NPO | 1.2nF | ±5% | 100 | FA18NP02A122JNU0□ |
| NPO | 1.5nF | ±5% | 100 | FA18NP02A152JNU0□ |
| NPO | 1.8nF | ±5% | 100 | FA18NP02A182JNU0□ |
| NPO | 2.2nF | ±5% | 100 | FA18NP02A222JNU0□ |
| NPO | 2.7nF | ±5% | 100 | FA18NP02A272JNU0□ |
| NPO | 3.3nF | ±5% | 100 | FA18NP02A332JNU0□ |

* The part numbers are TDK's standard specification products.

** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.

FA18 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 2 (TEMPERATURE STABLE)

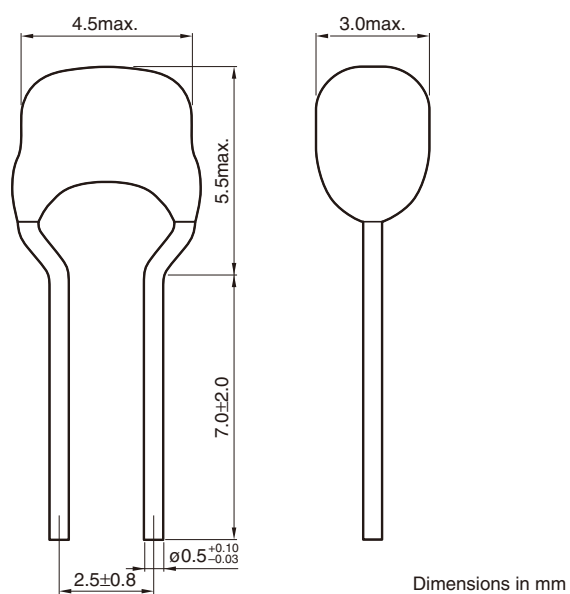
| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| X8R | 68nF | ±10% | 25 | FA18X8R1E683KNU0□** |
| X8R | 100nF | ±10% | 25 | FA18X8R1E104KNU0□ |
| X8R | 150nF | ±10% | 25 | FA18X8R1E154KRU0□ |
| X8R | 220nF | ±10% | 25 | FA18X8R1E224KRU0□ |
| X8R | 1nF | ±10% | 50 | FA18X8R1H102KNU0□ |
| X8R | 1.5nF | ±10% | 50 | FA18X8R1H152KNU0□ |
| X8R | 2.2nF | ±10% | 50 | FA18X8R1H222KNU0□ |
| X8R | 3.3nF | ±10% | 50 | FA18X8R1H332KNU0□ |
| X8R | 4.7nF | ±10% | 50 | FA18X8R1H472KNU0□ |
| X8R | 6.8nF | ±10% | 50 | FA18X8R1H682KNU0□ |
| X8R | 10nF | ±10% | 50 | FA18X8R1H103KNU0□ |
| X8R | 15nF | ±10% | 50 | FA18X8R1H153KNU0□ |
| X8R | 22nF | ±10% | 50 | FA18X8R1H223KNU0□ |
| X8R | 33nF | ±10% | 50 | FA18X8R1H333KNU0□ |
| X8R | 47nF | ±10% | 50 | FA18X8R1H473KNU0□ |
| X8R | 68nF | ±10% | 50 | FA18X8R1H683KRU0□ |
| X8R | 100nF | ±10% | 50 | FA18X8R1H104KRU0□ |
| X8R | 1nF | ±10% | 100 | FA18X8R2A102KNU0□ |
| X8R | 1.5nF | ±10% | 100 | FA18X8R2A152KNU0□ |
| X8R | 2.2nF | ±10% | 100 | FA18X8R2A222KNU0□ |
| X8R | 3.3nF | ±10% | 100 | FA18X8R2A332KNU0□ |
| X8R | 4.7nF | ±10% | 100 | FA18X8R2A472KNU0□ |
| X8R | 6.8nF | ±10% | 100 | FA18X8R2A682KNU0□ |
| X8R | 10nF | ±10% | 100 | FA18X8R2A103KNU0□ |
| X8R | 15nF | ±10% | 100 | FA18X8R2A153KNU0□ |
| X8R | 22nF | ±10% | 100 | FA18X8R2A223KRU0□ |
| X8R | 33nF | ±10% | 100 | FA18X8R2A333KRU0□ |

* The part numbers are TDK's standard specification products.

** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

FA14 Type

■ SHAPE & DIMENSIONS



FA14 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|--------------------------|---------------------|
| NPO | 15nF | ±5% | 50 | FA14NP01H153JNU0□** |
| NPO | 22nF | ±5% | 50 | FA14NP01H223JNU0□ |
| NPO | 33nF | ±5% | 50 | FA14NP01H333JNU0□ |
| NPO | 3.9nF | ±5% | 100 | FA14NP02A392JNU0□ |
| NPO | 4.7nF | ±5% | 100 | FA14NP02A472JNU0□ |
| NPO | 5.6nF | ±5% | 100 | FA14NP02A562JNU0□ |
| NPO | 6.8nF | ±5% | 100 | FA14NP02A682JNU0□ |
| NPO | 8.2nF | ±5% | 100 | FA14NP02A822JNU0□ |
| NPO | 10nF | ±5% | 100 | FA14NP02A103JNU0□ |

* The part numbers are TDK's standard specification products.

** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

CLASS 2 (TEMPERATURE STABLE)

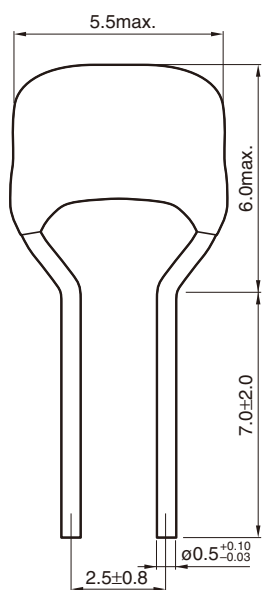
| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|--------------------------|---------------------|
| X8R | 150nF | ±10% | 25 | FA14X8R1E154KNU0□** |
| X8R | 220nF | ±10% | 25 | FA14X8R1E224KNU0□ |
| X8R | 330nF | ±10% | 25 | FA14X8R1E334KNU0□ |
| X8R | 470nF | ±10% | 25 | FA14X8R1E474KRU0□ |
| X8R | 68nF | ±10% | 50 | FA14X8R1H683KNU0□ |
| X8R | 100nF | ±10% | 50 | FA14X8R1H104KNU0□ |
| X8R | 150nF | ±10% | 50 | FA14X8R1H154KRU0□ |
| X8R | 220nF | ±10% | 50 | FA14X8R1H224KRU0□ |
| X8R | 22nF | ±10% | 100 | FA14X8R2A223KNU0□ |
| X8R | 47nF | ±10% | 100 | FA14X8R2A473KRU0□ |
| X8R | 68nF | ±10% | 100 | FA14X8R2A683KRU0□ |

* The part numbers are TDK's standard specification products.

** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

FA16 Type

■ SHAPE & DIMENSIONS



Dimensions in mm



FA16 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| NPO | 47nF | ±5% | 50 | FA16NP01H473JNU0□** |
| NPO | 68nF | ±5% | 50 | FA16NP01H683JNU0□ |
| NPO | 100nF | ±5% | 50 | FA16NP01H104JNU0□ |
| NPO | 15nF | ±5% | 100 | FA16NP02A153JNU0□ |
| NPO | 22nF | ±5% | 100 | FA16NP02A223JNU0□ |
| NPO | 33nF | ±5% | 100 | FA16NP02A333JNU0□ |

* The part numbers are TDK's standard specification products.

** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

CLASS 2 (TEMPERATURE STABLE)

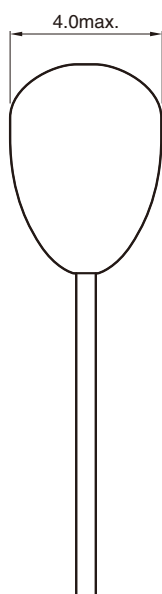
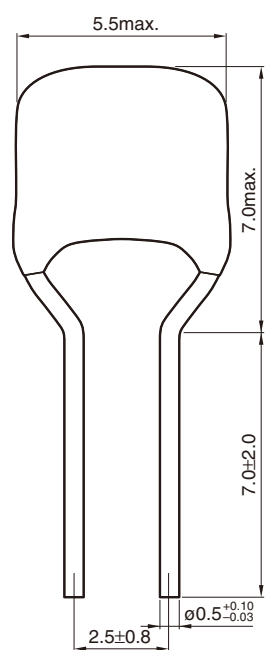
| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| X8R | 470nF | ±10% | 25 | FA16X8R1E474KNU0□** |
| X8R | 680nF | ±10% | 25 | FA16X8R1E684KNU0□ |
| X8R | 1uF | ±10% | 25 | FA16X8R1E105KNU0□ |
| X8R | 1.5uF | ±10% | 25 | FA16X8R1E155KRU0□ |
| X8R | 2.2uF | ±10% | 25 | FA16X8R1E225KRU0□ |
| X8R | 150nF | ±10% | 50 | FA16X8R1H154KNU0□ |
| X8R | 220nF | ±10% | 50 | FA16X8R1H224KNU0□ |
| X8R | 330nF | ±10% | 50 | FA16X8R1H334KNU0□ |
| X8R | 470nF | ±10% | 50 | FA16X8R1H474KNU0□ |
| X8R | 680nF | ±10% | 50 | FA16X8R1H684KRU0□ |
| X8R | 1uF | ±10% | 50 | FA16X8R1H105KRU0□ |
| X8R | 33nF | ±10% | 100 | FA16X8R2A333KNU0□ |
| X8R | 47nF | ±10% | 100 | FA16X8R2A473KNU0□ |
| X8R | 68nF | ±10% | 100 | FA16X8R2A683KNU0□ |
| X8R | 100nF | ±10% | 100 | FA16X8R2A104KNU0□ |
| X8R | 150nF | ±10% | 100 | FA16X8R2A154KNU0□ |
| X8R | 220nF | ±10% | 100 | FA16X8R2A224KRU0□ |
| X8R | 330nF | ±10% | 100 | FA16X8R2A334KRU0□ |

* The part numbers are TDK's standard specification products.

** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

FA11 Type

■ SHAPE & DIMENSIONS



Dimensions in mm



FA11 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| NPO | 47nF | ±5% | 100 | FA11NP02A473JNU0□** |
| NPO | 68nF | ±5% | 100 | FA11NP02A683JNU0□ |

* The part numbers are TDK's standard specification products.

** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

CLASS 2 (TEMPERATURE STABLE)

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc (V) | Part No.* |
|-----------------------------|-------------|-----------|-----------------------|---------------------|
| X8R | 1.5uF | ±10% | 25 | FA11X8R1E155KNU0□** |
| X8R | 2.2uF | ±10% | 25 | FA11X8R1E225KNU0□ |
| X8R | 3.3uF | ±10% | 25 | FA11X8R1E335KNU0□ |
| X8R | 4.7uF | ±10% | 25 | FA11X8R1E475KRU0□ |
| X8R | 470nF | ±10% | 100 | FA11X8R2A474KRU0□ |
| X8R | 680nF | ±10% | 100 | FA11X8R2A684KRU0□ |

* The part numbers are TDK's standard specification products.

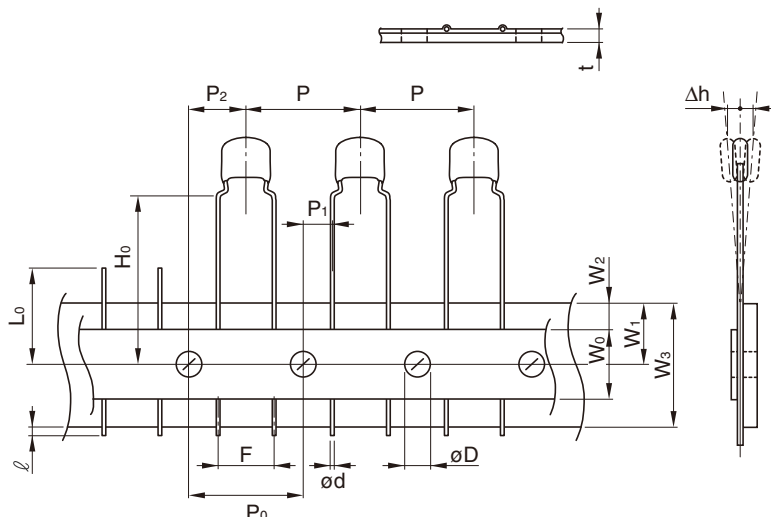
** The "□" of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

Packaging Style

■ TAPING DIMENSIONS

□ Lead pitch 5.0 mm

(FA28, FA24, FA26, FA20, FA22 Type)



| Symbol | Dimensions (mm) |
|-------------------------------|-----------------|
| P | 12.7±1.0 |
| P ₀ * ¹ | 12.7±0.3 |
| P ₁ | 3.85±0.7 |
| P ₂ | 6.35±1.3 |
| W ₀ | 12.0±1.0 |
| W ₁ | 9.0±0.5 |
| W ₂ * ² | 3.0max. |
| W ₃ | 18.0+1.0, -0.5 |
| H ₀ | 16.0±0.5 |
| ℓ | 1.0max. |
| t | 0.6±0.2 |
| L ₀ * ³ | 11.0max. |
| F | 5.0+0.8 |
| ød | ø0.5+0.1, -0.03 |
| øD | ø4.0±0.2 |
| Δh | 0±2 |

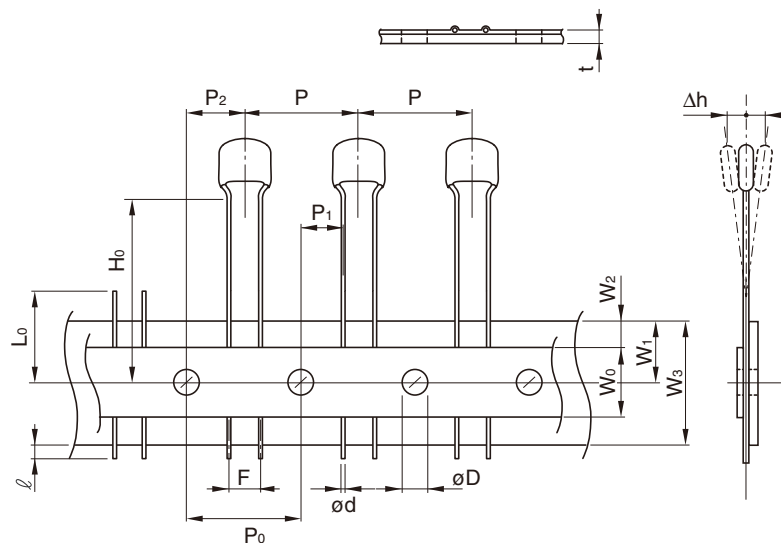
*¹ Accumulated pitch tolerance shall be ±2mm for 20 pitches.

*² Adhesive tape shall not stick out from carrier tape.

*³ The number of consecutive gaps in the product shall be three or less.

□ Lead pitch 2.5 mm

(FA18, FA14, FA16, FA11 Type)



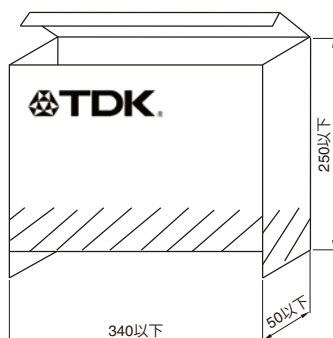
| Symbol | Dimensions (mm) |
|-------------------------------|-----------------|
| P | 12.7±1.0 |
| P ₀ * ¹ | 12.7±0.3 |
| P ₁ | 5.1±0.7 |
| P ₂ | 6.35±1.3 |
| W ₀ | 12.0±1.0 |
| W ₁ | 9.0±0.5 |
| W ₂ * ² | 3.0max. |
| W ₃ | 18.0+1.0, -0.5 |
| H ₀ | 16.0±0.5 |
| ℓ | 1.0max. |
| t | 0.6±0.2 |
| L ₀ * ³ | 11.0max. |
| F | 2.5+0.5 |
| ød | ø0.5+0.1, -0.03 |
| øD | ø4.0±0.2 |
| Δh | 0±2 |

*¹ Accumulated pitch tolerance shall be ±2mm for 20 pitches.

*² Adhesive tape shall not stick out from carrier tape.

*³ The number of consecutive gaps in the product shall be three or less.

■ AMMO PACK INNER BOX SIZE



Dimensions in mm

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
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JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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