

MLCC with Dipped Radial Lead

Commercial Grade

General (Up to 50V)

FK Series

Type: **FK28, FK18**
 FK24, FK14
 FK26, FK16
 FK20, FK11
 FK22

Issue date: **March 2013**

- All specifications are subject to change without notice.
 - Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
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FEATURES

- High capacitance has been achieved through improvements in the thinning process of ceramic dielectric layers and multi-layer lamination technology.
- High reliability is maintained under specified environmental conditions.
- Low residual inductance and excellent frequency characteristics has been achieved.
- The leads are formed with a "kink" to achieve consistent insertion heights and facilitate the release of gases during soldering for dramatically improved solderability.
- Taping specifications are available for automatic insertions, which contribute to reduce on-board costs.

PRODUCT IDENTIFICATION

FK 28 C0G 1H 101 J □□□□
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions and shapes of lead wire



| Dimensions in mm | | | | | | | |
|------------------|--------|--------|--------|---------|--------|---------------|-----|
| Type | L max. | W max. | T max. | F | ℓ | ød | Fig |
| 28 | 4.0 | 5.5 | 2.5 | 5.0±1.0 | 7±2 | 0.5+0.1,-0.03 | 1 |
| 24 | 4.5 | 5.5 | 2.5 | 5.0±1.0 | 7±2 | 0.5+0.1,-0.03 | 1 |
| 26 | 5.5 | 6.0 | 3.5 | 5.0±1.0 | 7±2 | 0.5+0.1,-0.03 | 1 |
| 20 | 5.5 | 7.0 | 4.0 | 5.0±1.0 | 7±2 | 0.5+0.1,-0.03 | 1 |
| 22 | 7.5 | 8.0 | 4.0 | 5.0±1.0 | 7±2 | 0.5+0.1,-0.03 | 1 |
| 18 | 4.0 | 5.5 | 2.5 | 2.5±0.8 | 5+3,-1 | 0.5+0.1,-0.03 | 2 |
| 14 | 4.5 | 5.5 | 2.5 | 2.5±0.8 | 5+3,-1 | 0.5+0.1,-0.03 | 2 |
| 16 | 5.5 | 6.0 | 3.5 | 2.5±0.8 | 5+3,-1 | 0.5+0.1,-0.03 | 2 |
| 11 | 5.5 | 7.0 | 4.0 | 2.5±0.8 | 5+3,-1 | 0.5+0.1,-0.03 | 2 |

(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

| Temperature characteristics | Capacitance change | Temperature range |
|-----------------------------|--------------------|-------------------|
| C0G | 0±30ppm/°C | -55 to +125°C |

Class 2 (Temperature stable and general purpose)

| Temperature characteristics | Capacitance change | Temperature range |
|-----------------------------|--------------------|-------------------|
| X7R | ±15% | -55 to +125°C |
| X5R | ±15% | -55 to +85°C |
| X7S | ±22% | -55 to +125°C |

(4) Rated voltage E_{dc}

| | |
|----|------|
| 0J | 6.3V |
| 1A | 10V |
| 1C | 16V |
| 1E | 25V |
| 1H | 50V |

(5) Nominal capacitance

The capacitance is expressed in three digit codes and in units of pico farads (pF).

The first and second digits identify the first and second significant figures of the capacitance.

The third digit identifies the multiplier.

| | |
|-----|---------|
| 0R5 | 0.5pF |
| 010 | 1pF |
| 100 | 10pF |
| 102 | 1,000pF |

(6) Capacitance tolerance

| Symbol | Tolerance | Applicable capacitance range |
|--------|-----------|------------------------------|
| C | ±0.25pF | 10pF max. |
| D | ±0.5pF | |
| J | ±5% | Over 10pF |
| K | ±10% | |
| M | ±20% | |

(7) TDK internal code

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)
FK28 AND FK18 TYPES
SHAPES AND DIMENSIONS

RATED VOLTAGE E_{dc}: 50V

| Temperature characteristics | Capacitance | Tolerance | Rated voltage E _{dc} (V) | Part No. FK28 type | FK18 type |
|-----------------------------|-------------|-----------|-----------------------------------|-----------------------|---------------|
| C0G | 1pF | ±0.25pF | 50 | FK28C0G1H010C | FK18C0G1H010C |
| C0G | 1.5pF | ±0.25pF | 50 | FK28C0G1H1R5C | FK18C0G1H1R5C |
| C0G | 2pF | ±0.25pF | 50 | FK28C0G1H020C | FK18C0G1H020C |
| C0G | 2.2pF | ±0.25pF | 50 | FK28C0G1H2R2C | FK18C0G1H2R2C |
| C0G | 3pF | ±0.25pF | 50 | FK28C0G1H030C | FK18C0G1H030C |
| C0G | 3.3pF | ±0.25pF | 50 | FK28C0G1H3R3C | FK18C0G1H3R3C |
| C0G | 4pF | ±0.25pF | 50 | FK28C0G1H040C | FK18C0G1H040C |
| C0G | 4.7pF | ±0.25pF | 50 | FK28C0G1H4R7C | FK18C0G1H4R7C |
| C0G | 5pF | ±0.25pF | 50 | FK28C0G1H050C | FK18C0G1H050C |
| C0G | 6pF | ±0.5pF | 50 | FK28C0G1H060D | FK18C0G1H060D |
| C0G | 6.8pF | ±0.5pF | 50 | FK28C0G1H6R8D | FK18C0G1H6R8D |
| C0G | 7pF | ±0.5pF | 50 | FK28C0G1H070D | FK18C0G1H070D |
| C0G | 8pF | ±0.5pF | 50 | FK28C0G1H080D | FK18C0G1H080D |
| C0G | 9pF | ±0.5pF | 50 | FK28C0G1H090D | FK18C0G1H090D |
| C0G | 10pF | ±0.5pF | 50 | FK28C0G1H100D | FK18C0G1H100D |
| C0G | 12pF | ±5% | 50 | FK28C0G1H120J | FK18C0G1H120J |
| C0G | 15pF | ±5% | 50 | FK28C0G1H150J | FK18C0G1H150J |
| C0G | 18pF | ±5% | 50 | FK28C0G1H180J | FK18C0G1H180J |
| C0G | 22pF | ±5% | 50 | FK28C0G1H220J | FK18C0G1H220J |
| C0G | 27pF | ±5% | 50 | FK28C0G1H270J | FK18C0G1H270J |
| C0G | 33pF | ±5% | 50 | FK28C0G1H330J | FK18C0G1H330J |
| C0G | 39pF | ±5% | 50 | FK28C0G1H390J | FK18C0G1H390J |
| C0G | 47pF | ±5% | 50 | FK28C0G1H470J | FK18C0G1H470J |
| C0G | 56pF | ±5% | 50 | FK28C0G1H560J | FK18C0G1H560J |
| C0G | 68pF | ±5% | 50 | FK28C0G1H680J | FK18C0G1H680J |
| C0G | 82pF | ±5% | 50 | FK28C0G1H820J | FK18C0G1H820J |
| C0G | 100pF | ±5% | 50 | FK28C0G1H101J | FK18C0G1H101J |
| C0G | 120pF | ±5% | 50 | FK28C0G1H121J | FK18C0G1H121J |
| C0G | 150pF | ±5% | 50 | FK28C0G1H151J | FK18C0G1H151J |
| C0G | 180pF | ±5% | 50 | FK28C0G1H181J | FK18C0G1H181J |
| C0G | 220pF | ±5% | 50 | FK28C0G1H221J | FK18C0G1H221J |
| C0G | 270pF | ±5% | 50 | FK28C0G1H271J | FK18C0G1H271J |
| C0G | 330pF | ±5% | 50 | FK28C0G1H331J | FK18C0G1H331J |
| C0G | 390pF | ±5% | 50 | FK28C0G1H391J | FK18C0G1H391J |
| C0G | 470pF | ±5% | 50 | FK28C0G1H471J | FK18C0G1H471J |
| C0G | 560pF | ±5% | 50 | FK28C0G1H561J | FK18C0G1H561J |
| C0G | 680pF | ±5% | 50 | FK28C0G1H681J | FK18C0G1H681J |
| C0G | 820pF | ±5% | 50 | FK28C0G1H821J | FK18C0G1H821J |
| C0G | 1000pF | ±5% | 50 | FK28C0G1H102J | FK18C0G1H102J |
| C0G | 1200pF | ±5% | 50 | FK28C0G1H122J | FK18C0G1H122J |
| C0G | 1500pF | ±5% | 50 | FK28C0G1H152J | FK18C0G1H152J |
| C0G | 1800pF | ±5% | 50 | FK28C0G1H182J | FK18C0G1H182J |
| C0G | 2200pF | ±5% | 50 | FK28C0G1H222J | FK18C0G1H222J |
| C0G | 2700pF | ±5% | 50 | FK28C0G1H272J | FK18C0G1H272J |
| C0G | 3300pF | ±5% | 50 | FK28C0G1H332J | FK18C0G1H332J |
| C0G | 3900pF | ±5% | 50 | FK28C0G1H392J | FK18C0G1H392J |
| C0G | 4700pF | ±5% | 50 | FK28C0G1H472J | FK18C0G1H472J |
| C0G | 5600pF | ±5% | 50 | FK28C0G1H562J | FK18C0G1H562J |
| C0G | 6800pF | ±5% | 50 | FK28C0G1H682J | FK18C0G1H682J |
| C0G | 8200pF | ±5% | 50 | FK28C0G1H822J | FK18C0G1H822J |
| C0G | 10000pF | ±5% | 50 | FK28C0G1H103J | FK18C0G1H103J |

FK24 AND FK14 TYPES

SHAPES AND DIMENSIONS



RATED VOLTAGE Edc: 50V

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc(V) | Part No. | |
|-----------------------------|-------------|-----------|----------------------|---------------|---------------|
| | | | | FK24 type | FK14 type |
| C0G | 2700pF | ±5% | 50 | FK24C0G1H272J | FK14C0G1H272J |
| C0G | 3300pF | ±5% | 50 | FK24C0G1H332J | FK14C0G1H332J |
| C0G | 3900pF | ±5% | 50 | FK24C0G1H392J | FK14C0G1H392J |
| C0G | 4700pF | ±5% | 50 | FK24C0G1H472J | FK14C0G1H472J |
| C0G | 5600pF | ±5% | 50 | FK24C0G1H562J | FK14C0G1H562J |
| C0G | 6800pF | ±5% | 50 | FK24C0G1H682J | FK14C0G1H682J |
| C0G | 8200pF | ±5% | 50 | FK24C0G1H822J | FK14C0G1H822J |
| C0G | 10000pF | ±5% | 50 | FK24C0G1H103J | FK14C0G1H103J |
| C0G | 15000pF | ±5% | 50 | FK24C0G1H153J | FK14C0G1H153J |
| C0G | 22000pF | ±5% | 50 | FK24C0G1H223J | FK14C0G1H223J |
| C0G | 33000pF | ±5% | 50 | FK24C0G1H333J | FK14C0G1H333J |

FK26 AND FK16 TYPES

SHAPES AND DIMENSIONS



RATED VOLTAGE Edc: 50V

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc(V) | Part No. | |
|-----------------------------|-------------|-----------|----------------------|---------------|---------------|
| | | | | FK26 type | FK16 type |
| C0G | 4700pF | ±5% | 50 | FK26C0G1H472J | FK16C0G1H472J |
| C0G | 5600pF | ±5% | 50 | FK26C0G1H562J | FK16C0G1H562J |
| C0G | 6800pF | ±5% | 50 | FK26C0G1H682J | FK16C0G1H682J |
| C0G | 8200pF | ±5% | 50 | FK26C0G1H822J | FK16C0G1H822J |
| C0G | 10000pF | ±5% | 50 | FK26C0G1H103J | FK16C0G1H103J |
| C0G | 15000pF | ±5% | 50 | FK26C0G1H153J | FK16C0G1H153J |
| C0G | 22000pF | ±5% | 50 | FK26C0G1H223J | FK16C0G1H223J |
| C0G | 33000pF | ±5% | 50 | FK26C0G1H333J | FK16C0G1H333J |
| C0G | 47000pF | ±5% | 50 | FK26C0G1H473J | FK16C0G1H473J |
| C0G | 68000pF | ±5% | 50 | FK26C0G1H683J | FK16C0G1H683J |
| C0G | 0.1μF | ±5% | 50 | FK26C0G1H104J | FK16C0G1H104J |

FK20 AND FK11 TYPES

SHAPES AND DIMENSIONS



RATED VOLTAGE Edc: 50V

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc(V) | Part No. | |
|-----------------------------|-------------|-----------|----------------------|---------------|---------------|
| | | | | FK20 type | FK11 type |
| C0G | 22000pF | ±5% | 50 | FK20C0G1H223J | FK11C0G1H223J |
| C0G | 33000pF | ±5% | 50 | FK20C0G1H333J | FK11C0G1H333J |
| C0G | 47000pF | ±5% | 50 | FK20C0G1H473J | FK11C0G1H473J |
| C0G | 68000pF | ±5% | 50 | FK20C0G1H683J | FK11C0G1H683J |
| C0G | 0.1μF | ±5% | 50 | FK20C0G1H104J | FK11C0G1H104J |

FK22 TYPE

SHAPES AND DIMENSIONS



RATED VOLTAGE Edc: 50V

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc(V) | Part No. |
|-----------------------------|-------------|-----------|----------------------|---------------|
| | | | | FK22 type |
| C0G | 0.15μF | ±5% | 50 | FK22C0G1H154J |
| C0G | 0.22μF | ±5% | 50 | FK22C0G1H224J |

CAPACITANCE RANGES: CLASS 2 (TEMPERATURE STABLE)
FK28 AND FK18 TYPES
SHAPES AND DIMENSIONS

RATED VOLTAGE Edc: 6.3 to 50V

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc(V) | Part No. | |
|-----------------------------|-------------|-----------|----------------------|---------------|---------------|
| | | | | FK28 type | FK18 type |
| X7R | 1000pF | ±10% | 50 | FK28X7R1H102K | FK18X7R1H102K |
| X7R | 1500pF | ±10% | 50 | FK28X7R1H152K | FK18X7R1H152K |
| X7R | 2200pF | ±10% | 50 | FK28X7R1H222K | FK18X7R1H222K |
| X7R | 3300pF | ±10% | 50 | FK28X7R1H332K | FK18X7R1H332K |
| X7R | 4700pF | ±10% | 50 | FK28X7R1H472K | FK18X7R1H472K |
| X7R | 6800pF | ±10% | 50 | FK28X7R1H682K | FK18X7R1H682K |
| X7R | 10000pF | ±10% | 50 | FK28X7R1H103K | FK18X7R1H103K |
| X7R | 15000pF | ±10% | 50 | FK28X7R1H153K | FK18X7R1H153K |
| X7R | 22000pF | ±10% | 50 | FK28X7R1H223K | FK18X7R1H223K |
| X7R | 33000pF | ±10% | 50 | FK28X7R1H333K | FK18X7R1H333K |
| X7R | 47000pF | ±10% | 50 | FK28X7R1H473K | FK18X7R1H473K |
| X7R | 68000pF | ±10% | 50 | FK28X7R1H683K | FK18X7R1H683K |
| X7R | 0.1μF | ±10% | 50 | FK28X7R1H104K | FK18X7R1H104K |
| X7R | 0.15μF | ±10% | 50 | FK28X7R1H154K | FK18X7R1H154K |
| X7R | 0.22μF | ±10% | 50 | FK28X7R1H224K | FK18X7R1H224K |
| X7R | 0.1μF | ±10% | 25 | FK28X7R1E104K | FK18X7R1E104K |
| X7R | 0.15μF | ±10% | 25 | FK28X7R1E154K | FK18X7R1E154K |
| X7R | 0.22μF | ±10% | 25 | FK28X7R1E224K | FK18X7R1E224K |
| X7R | 0.33μF | ±10% | 25 | FK28X7R1E334K | FK18X7R1E334K |
| X7R | 0.47μF | ±10% | 25 | FK28X7R1E474K | FK18X7R1E474K |
| X7R | 0.68μF | ±10% | 25 | FK28X7R1E684K | FK18X7R1E684K |
| X7R | 1μF | ±10% | 25 | FK28X7R1E105K | FK18X7R1E105K |
| X7R | 0.22μF | ±10% | 16 | FK28X7R1C224K | FK18X7R1C224K |
| X7R | 0.33μF | ±10% | 16 | FK28X7R1C334K | FK18X7R1C334K |
| X7R | 0.47μF | ±10% | 16 | FK28X7R1C474K | FK18X7R1C474K |
| X7R | 0.68μF | ±10% | 16 | FK28X7R1C684K | FK18X7R1C684K |
| X7R | 1μF | ±10% | 16 | FK28X7R1C105K | FK18X7R1C105K |
| X7R | 1.5μF | ±10% | 6.3 | FK28X7R0J155K | FK18X7R0J155K |
| X7R | 2.2μF | ±10% | 6.3 | FK28X7R0J225K | FK18X7R0J225K |
| X5R | 0.22μF | ±10% | 25 | FK28X5R1E224K | FK18X5R1E224K |
| X5R | 0.33μF | ±10% | 25 | FK28X5R1E334K | FK18X5R1E334K |
| X5R | 0.47μF | ±10% | 25 | FK28X5R1E474K | FK18X5R1E474K |
| X5R | 0.68μF | ±10% | 25 | FK28X5R1E684K | FK18X5R1E684K |
| X5R | 1μF | ±10% | 25 | FK28X5R1E105K | FK18X5R1E105K |
| X5R | 0.47μF | ±10% | 16 | FK28X5R1C474K | FK18X5R1C474K |
| X5R | 0.68μF | ±10% | 16 | FK28X5R1C684K | FK18X5R1C684K |
| X5R | 1μF | ±10% | 16 | FK28X5R1C105K | FK18X5R1C105K |
| X5R | 1.5μF | ±10% | 16 | FK28X5R1C155K | FK18X5R1C155K |
| X5R | 2.2μF | ±10% | 16 | FK28X5R1C225K | FK18X5R1C225K |
| X5R | 0.33μF | ±10% | 10 | FK28X5R1A334K | FK18X5R1A334K |
| X5R | 0.47μF | ±10% | 10 | FK28X5R1A474K | FK18X5R1A474K |
| X5R | 0.68μF | ±10% | 10 | FK28X5R1A684K | FK18X5R1A684K |
| X5R | 1μF | ±10% | 10 | FK28X5R1A105K | FK18X5R1A105K |
| X5R | 1.5μF | ±10% | 10 | FK28X5R1A155K | FK18X5R1A155K |
| X5R | 2.2μF | ±10% | 10 | FK28X5R1A225K | FK18X5R1A225K |
| X5R | 3.3μF | ±10% | 10 | FK28X5R1A335K | FK18X5R1A335K |
| X5R | 4.7μF | ±10% | 10 | FK28X5R1A475K | FK18X5R1A475K |

RATED VOLTAGE Edc: 6.3 to 50V

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc(V) | Part No. | |
|-----------------------------|-------------|------------|----------------------|---------------|---------------|
| | | | | FK28 type | FK18 type |
| X5R | 1 μ F | $\pm 10\%$ | 6.3 | FK28X5R0J105K | FK18X5R0J105K |
| X5R | 1.5 μ F | $\pm 10\%$ | 6.3 | FK28X5R0J155K | FK18X5R0J155K |
| X5R | 2.2 μ F | $\pm 10\%$ | 6.3 | FK28X5R0J225K | FK18X5R0J225K |
| X5R | 3.3 μ F | $\pm 10\%$ | 6.3 | FK28X5R0J335K | FK18X5R0J335K |
| X5R | 4.7 μ F | $\pm 10\%$ | 6.3 | FK28X5R0J475K | FK18X5R0J475K |
| X5R | 6.8 μ F | $\pm 10\%$ | 6.3 | FK28X5R0J685K | FK18X5R0J685K |
| X5R | 10 μ F | $\pm 20\%$ | 6.3 | FK28X5R0J106M | FK18X5R0J106M |

FK24 AND FK14 TYPES SHAPES AND DIMENSIONS



RATED VOLTAGE Edc: 6.3 to 50V

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc(V) | Part No. | |
|-----------------------------|--------------|------------|----------------------|---------------|---------------|
| | | | | FK24 type | FK14 type |
| X7R | 0.15 μ F | $\pm 10\%$ | 50 | FK24X7R1H154K | FK14X7R1H154K |
| X7R | 0.22 μ F | $\pm 10\%$ | 50 | FK24X7R1H224K | FK14X7R1H224K |
| X7R | 0.33 μ F | $\pm 10\%$ | 50 | FK24X7R1H334K | FK14X7R1H334K |
| X7R | 0.47 μ F | $\pm 10\%$ | 50 | FK24X7R1H474K | FK14X7R1H474K |
| X7R | 0.68 μ F | $\pm 10\%$ | 50 | FK24X7R1H684K | FK14X7R1H684K |
| X7R | 1 μ F | $\pm 10\%$ | 50 | FK24X7R1H105K | FK14X7R1H105K |
| X7R | 0.47 μ F | $\pm 10\%$ | 25 | FK24X7R1E474K | FK14X7R1E474K |
| X7R | 0.68 μ F | $\pm 10\%$ | 25 | FK24X7R1E684K | FK14X7R1E684K |
| X7R | 1 μ F | $\pm 10\%$ | 25 | FK24X7R1E105K | FK14X7R1E105K |
| X7R | 1.5 μ F | $\pm 10\%$ | 25 | FK24X7R1E155K | FK14X7R1E155K |
| X7R | 2.2 μ F | $\pm 10\%$ | 25 | FK24X7R1E225K | FK14X7R1E225K |
| X7R | 3.3 μ F | $\pm 10\%$ | 25 | FK24X7R1E335K | FK14X7R1E335K |
| X7R | 4.7 μ F | $\pm 10\%$ | 25 | FK24X7R1E475K | FK14X7R1E475K |
| X7R | 0.68 μ F | $\pm 10\%$ | 16 | FK24X7R1C684K | FK14X7R1C684K |
| X7R | 1 μ F | $\pm 10\%$ | 16 | FK24X7R1C105K | FK14X7R1C105K |
| X7R | 1.5 μ F | $\pm 10\%$ | 16 | FK24X7R1C155K | FK14X7R1C155K |
| X7R | 2.2 μ F | $\pm 10\%$ | 16 | FK24X7R1C225K | FK14X7R1C225K |
| X7R | 3.3 μ F | $\pm 10\%$ | 16 | FK24X7R1C335K | FK14X7R1C335K |
| X7R | 4.7 μ F | $\pm 10\%$ | 16 | FK24X7R1C475K | FK14X7R1C475K |
| X7R | 6.8 μ F | $\pm 10\%$ | 6.3 | FK24X7R0J685K | FK14X7R0J685K |
| X7R | 10 μ F | $\pm 10\%$ | 6.3 | FK24X7R0J106K | FK14X7R0J106K |
| X5R | 0.68 μ F | $\pm 10\%$ | 25 | FK24X5R1E684K | FK14X5R1E684K |
| X5R | 1 μ F | $\pm 10\%$ | 25 | FK24X5R1E105K | FK14X5R1E105K |
| X5R | 1.5 μ F | $\pm 10\%$ | 25 | FK24X5R1E155K | FK14X5R1E155K |
| X5R | 2.2 μ F | $\pm 10\%$ | 25 | FK24X5R1E225K | FK14X5R1E225K |
| X5R | 3.3 μ F | $\pm 10\%$ | 25 | FK24X5R1E335K | FK14X5R1E335K |
| X5R | 4.7 μ F | $\pm 10\%$ | 25 | FK24X5R1E475K | FK14X5R1E475K |
| X5R | 1 μ F | $\pm 10\%$ | 16 | FK24X5R1C105K | FK14X5R1C105K |
| X5R | 1.5 μ F | $\pm 10\%$ | 16 | FK24X5R1C155K | FK14X5R1C155K |
| X5R | 2.2 μ F | $\pm 10\%$ | 16 | FK24X5R1C225K | FK14X5R1C225K |
| X5R | 3.3 μ F | $\pm 10\%$ | 16 | FK24X5R1C335K | FK14X5R1C335K |
| X5R | 4.7 μ F | $\pm 10\%$ | 16 | FK24X5R1C475K | FK14X5R1C475K |
| X5R | 10 μ F | $\pm 10\%$ | 16 | FK24X5R1C106K | FK14X5R1C106K |
| X5R | 1.5 μ F | $\pm 10\%$ | 10 | FK24X5R1A155K | FK14X5R1A155K |
| X5R | 2.2 μ F | $\pm 10\%$ | 10 | FK24X5R1A225K | FK14X5R1A225K |
| X5R | 3.3 μ F | $\pm 10\%$ | 10 | FK24X5R1A335K | FK14X5R1A335K |
| X5R | 4.7 μ F | $\pm 10\%$ | 10 | FK24X5R1A475K | FK14X5R1A475K |
| X5R | 6.8 μ F | $\pm 10\%$ | 10 | FK24X5R1A685K | FK14X5R1A685K |
| X5R | 10 μ F | $\pm 10\%$ | 10 | FK24X5R1A106K | FK14X5R1A106K |
| X5R | 4.7 μ F | $\pm 10\%$ | 6.3 | FK24X5R0J475K | FK14X5R0J475K |
| X5R | 6.8 μ F | $\pm 10\%$ | 6.3 | FK24X5R0J685K | FK14X5R0J685K |
| X5R | 10 μ F | $\pm 10\%$ | 6.3 | FK24X5R0J106K | FK14X5R0J106K |
| X5R | 15 μ F | $\pm 20\%$ | 6.3 | FK24X5R0J156M | FK14X5R0J156M |
| X5R | 22 μ F | $\pm 20\%$ | 6.3 | FK24X5R0J226M | FK14X5R0J226M |

FK26 AND FK16 TYPES

SHAPES AND DIMENSIONS



RATED VOLTAGE Edc: 6.3 to 50V

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc(V) | Part No. | |
|-----------------------------|-------------|-----------|----------------------|---------------|---------------|
| | | | | FK26 type | FK16 type |
| X7R | 0.47μF | ±10% | 50 | FK26X7R1H474K | FK16X7R1H474K |
| X7R | 0.68μF | ±10% | 50 | FK26X7R1H684K | FK16X7R1H684K |
| X7R | 1μF | ±10% | 50 | FK26X7R1H105K | FK16X7R1H105K |
| X7R | 1.5μF | ±10% | 50 | FK26X7R1H155K | FK16X7R1H155K |
| X7R | 2.2μF | ±10% | 50 | FK26X7R1H225K | FK16X7R1H225K |
| X7R | 0.68μF | ±10% | 25 | FK26X7R1E684K | FK16X7R1E684K |
| X7R | 1μF | ±10% | 25 | FK26X7R1E105K | FK16X7R1E105K |
| X7R | 1.5μF | ±10% | 25 | FK26X7R1E155K | FK16X7R1E155K |
| X7R | 2.2μF | ±10% | 25 | FK26X7R1E225K | FK16X7R1E225K |
| X7R | 3.3μF | ±10% | 25 | FK26X7R1E335K | FK16X7R1E335K |
| X7R | 4.7μF | ±10% | 25 | FK26X7R1E475K | FK16X7R1E475K |
| X7R | 6.8μF | ±10% | 25 | FK26X7R1E685K | FK16X7R1E685K |
| X7R | 10μF | ±10% | 25 | FK26X7R1E106K | FK16X7R1E106K |
| X7R | 3.3μF | ±10% | 16 | FK26X7R1C335K | FK16X7R1C335K |
| X7R | 4.7μF | ±10% | 16 | FK26X7R1C475K | FK16X7R1C475K |
| X7R | 6.8μF | ±10% | 16 | FK26X7R1C685K | FK16X7R1C685K |
| X7R | 10μF | ±10% | 16 | FK26X7R1C106K | FK16X7R1C106K |
| X5R | 1μF | ±10% | 50 | FK26X5R1H105K | FK16X5R1H105K |
| X5R | 1.5μF | ±10% | 25 | FK26X5R1E155K | FK16X5R1E155K |
| X5R | 2.2μF | ±10% | 25 | FK26X5R1E225K | FK16X5R1E225K |
| X5R | 3.3μF | ±10% | 25 | FK26X5R1E335K | FK16X5R1E335K |
| X5R | 4.7μF | ±10% | 25 | FK26X5R1E475K | FK16X5R1E475K |
| X5R | 3.3μF | ±10% | 16 | FK26X5R1C335K | FK16X5R1C335K |
| X5R | 4.7μF | ±10% | 16 | FK26X5R1C475K | FK16X5R1C475K |
| X5R | 6.8μF | ±10% | 16 | FK26X5R1C685K | FK16X5R1C685K |
| X5R | 10μF | ±10% | 16 | FK26X5R1C106K | FK16X5R1C106K |
| X5R | 6.8μF | ±10% | 10 | FK26X5R1A685K | FK16X5R1A685K |
| X5R | 10μF | ±10% | 10 | FK26X5R1A106K | FK16X5R1A106K |
| X5R | 6.8μF | ±10% | 6.3 | FK26X5R0J685K | FK16X5R0J685K |
| X5R | 10μF | ±10% | 6.3 | FK26X5R0J106K | FK16X5R0J106K |
| X5R | 15μF | ±20% | 6.3 | FK26X5R0J156M | FK16X5R0J156M |
| X5R | 22μF | ±20% | 6.3 | FK26X5R0J226M | FK16X5R0J226M |
| X5R | 33μF | ±20% | 6.3 | FK26X5R0J336M | FK16X5R0J336M |
| X5R | 47μF | ±20% | 6.3 | FK26X5R0J476M | FK16X5R0J476M |

FK20 AND FK11 TYPES SHAPES AND DIMENSIONS



RATED VOLTAGE Edc: 6.3 to 50V

| Temperature characteristics | Capacitance | Tolerance | Rated voltage Edc(V) | Part No. | |
|-----------------------------|--------------|------------|----------------------|---------------|---------------|
| | | | | FK20 type | FK11 type |
| X7R | 0.68 μ F | $\pm 10\%$ | 50 | FK20X7R1H684K | FK11X7R1H684K |
| X7R | 1 μ F | $\pm 10\%$ | 50 | FK20X7R1H105K | FK11X7R1H105K |
| X7R | 1.5 μ F | $\pm 10\%$ | 50 | FK20X7R1H155K | FK11X7R1H155K |
| X7R | 2.2 μ F | $\pm 10\%$ | 50 | FK20X7R1H225K | FK11X7R1H225K |
| X7R | 3.3 μ F | $\pm 10\%$ | 50 | FK20X7R1H335K | FK11X7R1H335K |
| X7R | 4.7 μ F | $\pm 10\%$ | 50 | FK20X7R1H475K | FK11X7R1H475K |
| X7R | 2.2 μ F | $\pm 10\%$ | 25 | FK20X7R1E225K | FK11X7R1E225K |
| X7R | 3.3 μ F | $\pm 10\%$ | 25 | FK20X7R1E335K | FK11X7R1E335K |
| X7R | 4.7 μ F | $\pm 10\%$ | 25 | FK20X7R1E475K | FK11X7R1E475K |
| X7R | 6.8 μ F | $\pm 10\%$ | 25 | FK20X7R1E685K | FK11X7R1E685K |
| X7R | 10 μ F | $\pm 10\%$ | 25 | FK20X7R1E106K | FK11X7R1E106K |
| X7R | 10 μ F | $\pm 10\%$ | 16 | FK20X7R1C106K | FK11X7R1C106K |
| X7R | 15 μ F | $\pm 20\%$ | 16 | FK20X7R1C156M | FK11X7R1C156M |
| X7R | 22 μ F | $\pm 20\%$ | 16 | FK20X7R1C226M | FK11X7R1C226M |
| X7R | 22 μ F | $\pm 20\%$ | 10 | FK20X7R1A226M | FK11X7R1A226M |
| X5R | 2.2 μ F | $\pm 10\%$ | 50 | FK20X5R1H225K | FK11X5R1H225K |
| X5R | 3.3 μ F | $\pm 10\%$ | 50 | FK20X5R1H335K | FK11X5R1H335K |
| X5R | 4.7 μ F | $\pm 10\%$ | 25 | FK20X5R1E475K | FK11X5R1E475K |
| X5R | 6.8 μ F | $\pm 10\%$ | 25 | FK20X5R1E685K | FK11X5R1E685K |
| X5R | 10 μ F | $\pm 10\%$ | 25 | FK20X5R1E106K | FK11X5R1E106K |
| X5R | 10 μ F | $\pm 10\%$ | 16 | FK20X5R1C106K | FK11X5R1C106K |
| X5R | 15 μ F | $\pm 20\%$ | 16 | FK20X5R1C156M | FK11X5R1C156M |
| X5R | 22 μ F | $\pm 20\%$ | 16 | FK20X5R1C226M | FK11X5R1C226M |
| X5R | 15 μ F | $\pm 20\%$ | 10 | FK20X5R1A156M | FK11X5R1A156M |
| X5R | 22 μ F | $\pm 20\%$ | 10 | FK20X5R1A226M | FK11X5R1A226M |
| X5R | 22 μ F | $\pm 20\%$ | 6.3 | FK20X5R0J226M | FK11X5R0J226M |
| X5R | 33 μ F | $\pm 20\%$ | 6.3 | FK20X5R0J336M | FK11X5R0J336M |
| X5R | 47 μ F | $\pm 20\%$ | 6.3 | FK20X5R0J476M | FK11X5R0J476M |
| X5R | 68 μ F | $\pm 20\%$ | 6.3 | FK20X5R0J686M | FK11X5R0J686M |
| X5R | 100 μ F | $\pm 20\%$ | 6.3 | FK20X5R0J107M | FK11X5R0J107M |
| X7S | 4.7 μ F | $\pm 10\%$ | 50 | FK20X7S1H475K | FK11X7S1H475K |
| X7S | 6.8 μ F | $\pm 10\%$ | 50 | FK20X7S1H685K | FK11X7S1H685K |
| X7S | 10 μ F | $\pm 10\%$ | 50 | FK20X7S1H106K | FK11X7S1H106K |

FK22 TYPE

SHAPES AND DIMENSIONS



RATED VOLTAGE Edc: 6.3 to 50V

| Temperature characteristics | Capacitance (pF) | Tolerance | Rated voltage Edc(V) | Part No. |
|-----------------------------|------------------|------------|----------------------|---------------|
| | | | | FK22 type |
| X7R | 1.5 μ F | $\pm 10\%$ | 50 | FK22X7R1H155K |
| X7R | 2.2 μ F | $\pm 10\%$ | 50 | FK22X7R1H225K |
| X7R | 3.3 μ F | $\pm 10\%$ | 50 | FK22X7R1H335K |
| X7R | 4.7 μ F | $\pm 10\%$ | 50 | FK22X7R1H475K |
| X7R | 6.8 μ F | $\pm 10\%$ | 50 | FK22X7R1H685K |
| X7R | 4.7 μ F | $\pm 10\%$ | 25 | FK22X7R1E475K |
| X7R | 6.8 μ F | $\pm 10\%$ | 25 | FK22X7R1E685K |
| X7R | 10 μ F | $\pm 10\%$ | 25 | FK22X7R1E106K |
| X7R | 15 μ F | $\pm 20\%$ | 25 | FK22X7R1E156M |
| X7R | 22 μ F | $\pm 20\%$ | 25 | FK22X7R1E226M |
| X7R | 15 μ F | $\pm 20\%$ | 16 | FK22X7R1C156M |
| X7R | 22 μ F | $\pm 20\%$ | 16 | FK22X7R1C226M |
| X7R | 33 μ F | $\pm 20\%$ | 16 | FK22X7R1C336M |
| X5R | 4.7 μ F | $\pm 10\%$ | 50 | FK22X5R1H475K |
| X5R | 6.8 μ F | $\pm 10\%$ | 50 | FK22X5R1H685K |
| X5R | 15 μ F | $\pm 20\%$ | 25 | FK22X5R1E156M |
| X5R | 22 μ F | $\pm 20\%$ | 25 | FK22X5R1E226M |
| X5R | 33 μ F | $\pm 20\%$ | 16 | FK22X5R1C336M |
| X5R | 33 μ F | $\pm 20\%$ | 10 | FK22X5R1A336M |
| X5R | 47 μ F | $\pm 20\%$ | 10 | FK22X5R1A476M |
| X5R | 68 μ F | $\pm 20\%$ | 6.3 | FK22X5R0J686M |
| X5R | 100 μ F | $\pm 20\%$ | 6.3 | FK22X5R0J107M |

• For more information about products with other capacitance or other data, please contact us.

• All specifications are subject to change without notice.

PACKAGING STYLES

TAPING DIMENSIONS

FK1 Series

(FK18, FK14, FK16, FK11 Types)



| 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. |
| L_0^{*3} | 11.0max. |
| F | $2.5 + 0.5, -0.2$ |
| ϕd | $\phi 0.5 + 0.1, -0.03$ |
| ϕD | $\phi 4.0 \pm 0.2$ |
| Δh | 0 ± 2 |

*1 Accumulated pitch tolerance shall be ± 2 mm 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.

FK2 Series

(FK28, FK24, FK26, FK20, FK22 Types)



| 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 | $5.0 + 0.8, -0.2$ |
| ϕd | $\phi 0.5 + 0.1, -0.03$ |
| ϕD | $\phi 4.0 \pm 0.2$ |
| Δh | 0 ± 2 |

*1 Accumulated pitch tolerance shall be ± 2 mm 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.

PACKAGING QUANTITIES

| Type | Quantity |
|------------|------------------|
| FK28, FK18 | |
| FK24, FK14 | 2000 pieces/1box |
| FK26, FK16 | |
| FK20, FK11 | 1500 pieces/1box |
| FK22 | |