

# Capacitor with Multi-layer Lead

Conventional product\*

Commercial Grade



(\*) For a new design, FA or FG Series with halogen-free specification are recommended.

Type: General (Up to 50V)

> FK28, FK18 FK24, FK14 FK26, FK16 FK20, FK11 FK22

Mid Voltage (100 to 630V)

FK28, FK18 FK24, FK14 FK26, FK16 FK20, FK11

**FK22** 



### Capacitor with Multi-layer Lead

Product compatible with RoHS directive

### **Commercial Grade**

# Overview of the FK General (Up to 50V) Series

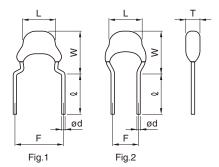
#### **FEATURES**

- 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 COG 1H 101 J (7)

- (1) Series name
- (2) Dimensions and shapes of lead wire



		Dimensions	in mı
۸	αd		Fig

Type	L max.	W max.	T max.	F	Q	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 Edc

OJ	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

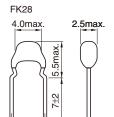
Symbol	Tolerance	Applicable capacitance range
С	±0.25pF	10pF max.
D	±0.5pF	торг шах.
J	±5%	
K	±10%	Over 10pF
M	±20%	

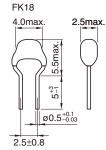
### (7) TDK internal code

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2011/65/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.



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





Dimensions in mm

### RATED VOLTAGE Edc: 50V

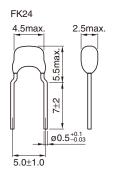
Ø0.5<sup>+0.1</sup><sub>-0.03</sub>

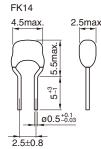
Price Syste	Temperature	Conseitones	Talawanaa	Rated voltage	Part No.	
COG	characteristics	Capacitance	Tolerance	Edc(V)	FK28 type	FK18 type
DOG	C0G	1pF	±0.25pF	50	FK28C0G1H010C	FK18C0G1H010C
COG         2.2pF         ±0.25pF         50         FX28CGG1H2R2CC         FK18CGG1H2R3CC           COG         3.3pF         ±0.25pF         50         FX28CGG1H2R3C         FK18CGG1H3R3C           COG         4.9F         ±0.25pF         50         FX28CGG1H3R3C         FK18CGG1H3R3C           COG         4.9F         ±0.25pF         50         FX28CGG1H4R7C         FK18CGG1H4R7C           COG         5.9F         ±0.25pF         50         FX28CGG1H4R7C         FK18CGG1H4R7C           COG         5.9F         ±0.25pF         50         FX28CGG1H4R8C         FK18CGG1H4R6C           COG         5.9F         ±0.25pF         50         FX28CGG1H4R8C         FK18CGG1H4R6C           COG         5.9F         ±0.5pF         50         FX28CGG1H4R8D         FK18CGG1H4R6C           COG         5.9F         ±0.5pF         50         FX28CGG1H4R8D         FK18CGG1H4R6C           COG         5.9F         ±0.5pF         50         FX28CGG1H4R8D         FK18CGG1H6R8D           COG         5.9F         ±0.5pF         50         FX28CGG1H4R8D         FK18CGG1H6R0D           COG         5.9F         ±0.5pF         50         FX28CGG1H1R0D         FK18CGG1H2G1AC	C0G	1.5pF	±0.25pF	50	FK28C0G1H1R5C	FK18C0G1H1R5C
DOG	C0G	2pF	±0.25pF	50	FK28C0G1H020C	FK18C0G1H020C
COG         3.9F         ±0.25pF         50         FX28CGG1H3R3C         FK18CDG1H3R3C         CK18CDG1H3R3C         CK18CDG1H3CDC	C0G	2.2pF	±0.25pF	50	FK28C0G1H2R2C	FK18C0G1H2R2C
COG         4-pF         ±0.25pF         50         FK2800G1H0A0C         FK18C0G1H0A0C           COG         4.7pF         ±0.25pF         50         FK28C0G1H4R7C         FK18C0G1H4B7C           COG         5pF         ±0.25pF         50         FK28C0G1H6B0C         FK18C0G1H6B0D           COG         6pF         ±0.5pF         50         FK28C0G1H6B0D         FK18C0G1H6B0D           COG         6.8pF         ±0.5pF         50         FK28C0G1H6B0D         FK18C0G1H6B0D           COG         3pF         ±0.5pF         50         FK28C0G1H090D         FK18C0G1H6B0D           COG         3pF         ±0.5pF         50         FK28C0G1H090D         FK18C0G1H090D           COG         1pF         ±0.5pF         50         FK28C0G1H100D         FK18C0G1H100D           COG         1pF         ±0.5pF         50         FK28C0G1H120D         FK18C0G1H120D           COG         1pF         ±5%         50         FK28C0G1H120D         FK18C0G1H120D           COG         1pF         ±5%         50         FK28C0G1H120D         FK18C0G1H120D           COG         1pF         ±5%         50         FK28C0G1H120D         FK18C0G1H22D           COG	C0G	3pF	±0.25pF	50	FK28C0G1H030C	FK18C0G1H030C
COG         4.7pF         ±0.25pF         50         FK28COG1H4B7C         FK18COG1H4B7C           COG         5pF         ±0.25pF         50         FK28COG1H08DD         FK18COG1H08DD           COG         6.8pF         ±0.5pF         50         FK28COG1H08DD         FK18COG1H08DD           COG         7.pF         ±0.5pF         50         FK28COG1H08DD         FK18COG1H07DD           COG         8pF         ±0.5pF         50         FK28COG1H08DD         FK18COG1H08DD           COG         9pF         ±0.5pF         50         FK28COG1H100D         FK18COG1H09DD           COG         10pF         ±0.5pF         50         FK28COG1H100D         FK18COG1H10DD           COG         12pF         ±5%         50         FK28COG1H10DD         FK18COG1H12DJ           COG         12pF         ±5%         50         FK28COG1H15DJ         FK18COG1H12DJ           COG         12pF         ±5%         50         FK28COG1H18DJ         FK18COG1H12DJ           COG         15pF         ±5%         50         FK28COG1H18DJ         FK18COG1H18DJ           COG         23pF         ±5%         50         FK28COG1H14DJ         FK18COG1H18DJ           COG <t< td=""><td>C0G</td><td>3.3pF</td><td>±0.25pF</td><td>50</td><td>FK28C0G1H3R3C</td><td>FK18C0G1H3R3C</td></t<>	C0G	3.3pF	±0.25pF	50	FK28C0G1H3R3C	FK18C0G1H3R3C
COG         5pF         ±0.25pF         50         FK28COG1H050C         FK18COG1H050C           COG         6pF         ±0.5pF         50         FK28COG1H060D         FK18COG1H060D           COG         7pF         ±0.5pF         50         FK28COG1H060D         FK18COG1H060D           COG         8pF         ±0.5pF         50         FK28COG1H060D         FK18COG1H060D           COG         9pF         ±0.5pF         50         FK28COG1H060D         FK18COG1H060D           COG         10pF         ±0.5pF         50         FK28COG1H090D         FK18COG1H000D           COG         12pF         ±5%         50         FK28COG1H102D         FK18COG1H100D           COG         12pF         ±5%         50         FK28COG1H12D         FK18COG1H12D           COG         12pF         ±5%         50         FK28COG1H12D         FK18COG1H12D           COG         12pF         ±5%         50         FK28COG1H12D         FK18COG1H2DU           COG         22pF         ±5%         50         FK28COG1H18DU         FK18COG1H2DU           COG         23pF         ±5%         50         FK28COG1H3DU         FK18COG1H2DU           COG         33pF	C0G	4pF	±0.25pF	50	FK28C0G1H040C	FK18C0G1H040C
COG         6,9F         ±0.5pF         50         FK28C0G1H6R8D         FK18C0G1H6R8D           COG         6,8pF         ±0.5pF         50         FK28C0G1H6R8D         FK18C0G1H6R8D           COG         7pF         ±0.5pF         50         FK28C0G1H070D         FK18C0G1H080D           COG         8pF         ±0.5pF         50         FK28C0G1H090D         FK18C0G1H080D           COG         10pF         ±0.5pF         50         FK28C0G1H100D         FK18C0G1H100D           COG         10pF         ±0.5pF         50         FK28C0G1H100D         FK18C0G1H120J           COG         12pF         ±5%         50         FK28C0G1H120J         FK18C0G1H180J           COG         15pF         ±5%         50         FK28C0G1H180J         FK18C0G1H180J           COG         15pF         ±5%         50         FK28C0G1H220J         FK18C0G1H270J           COG         22pF         ±5%         50         FK28C0G1H220J         FK18C0G1H270J           COG         27pF         ±5%         50         FK28C0G1H220J         FK18C0G1H270J           COG         35pF         ±5%         50         FK28C0G1H220J         FK18C0G1H270J           COG         35p	C0G	4.7pF	±0.25pF	50	FK28C0G1H4R7C	FK18C0G1H4R7C
COG         6.8pF         ±0.5pF         50         FK28COG1H6R8D         FK18COG1H6R8D           COG         7pF         ±0.5pF         50         FK28COG1H080D         FK18COG1H070D           COG         8pF         ±0.5pF         50         FK28COG1H080D         FK18COG1H080D           COG         10pF         ±0.5pF         50         FK28COG1H090D         FK18COG1H100D           COG         10pF         ±0.5pF         50         FK28COG1H100D         FK18COG1H100D           COG         12pF         ±5%         50         FK28COG1H100D         FK18COG1H120U           COG         15pF         ±5%         50         FK28COG1H120U         FK18COG1H120U           COG         15pF         ±5%         50         FK28COG1H120U         FK18COG1H20U           COG         22pF         ±5%         50         FK28COG1H220U         FK18COG1H220U           COG         23pF         ±5%         50         FK28COG1H270U         FK18COG1H220U           COG         33pF         ±5%         50         FK28COG1H330U         FK18COG1H330U           COG         33pF         ±5%         50         FK28COG1H330U         FK18COG1H330U           COG         47pF <td>C0G</td> <td>5pF</td> <td>±0.25pF</td> <td>50</td> <td>FK28C0G1H050C</td> <td>FK18C0G1H050C</td>	C0G	5pF	±0.25pF	50	FK28C0G1H050C	FK18C0G1H050C
COG         7pF         ±0.5pF         50         FK28C0G1H070D         FK18C0G1H080D           COG         8pF         ±0.5pF         50         FK28C0G1H080D         FK18C0G1H080D           COG         9pF         ±0.5pF         50         FK28C0G1H090D         FK18C0G1H080D           COG         10pF         ±0.5pF         50         FK28C0G1H100D         FK18C0G1H120J           COG         12pF         ±5%         50         FK28C0G1H120J         FK18C0G1H180J           COG         15pF         ±5%         50         FK28C0G1H180J         FK18C0G1H180J           COG         18pF         ±5%         50         FK28C0G1H220J         FK18C0G1H220J           COG         22pF         ±5%         50         FK28C0G1H220J         FK18C0G1H220J           COG         33pF         ±5%         50         FK28C0G1H270J         FK18C0G1H270J           COG         33pF         ±5%         50         FK28C0G1H270J         FK18C0G1H270J           COG         33pF         ±5%         50         FK28C0G1H330J         FK18C0G1H370J           COG         33pF         ±5%         50         FK28C0G1H3030J         FK18C0G1H390J         FK18C0G1H390J           C	C0G	6pF	±0.5pF	50	FK28C0G1H060D	FK18C0G1H060D
COG 9pF ±0.5pF 50 FK28C0G1H080D FK18C0G1H080D COG 9pF ±0.5pF 50 FK28C0G1H100D FK18C0G1H090D COG 10pF ±0.5pF 50 FK28C0G1H100D FK18C0G1H100D COG 12pF ±5% 50 FK28C0G1H100D FK18C0G1H120J COG 15pF ±5% 50 FK28C0G1H150J FK18C0G1H120J COG 15pF ±5% 50 FK28C0G1H150J FK18C0G1H120J COG 15pF ±5% 50 FK28C0G1H180J FK18C0G1H180J COG 14pF ±5% 50 FK28C0G1H180J FK18C0G1H180J COG 12pF ±5% 50 FK28C0G1H120J FK18C0G1H180J COG 22pF ±5% 50 FK28C0G1H220J FK18C0G1H220J COG 22pF ±5% 50 FK28C0G1H220J FK18C0G1H220J COG 22pF ±5% 50 FK28C0G1H220J FK18C0G1H220J COG 33pF ±5% 50 FK28C0G1H220J FK18C0G1H220J COG 33pF ±5% 50 FK28C0G1H220J FK18C0G1H220J COG 33pF ±5% 50 FK28C0G1H220J FK18C0G1H30J COG 33pF ±5% 50 FK28C0G1H20J FK18C0G1H30J COG 33pF ±5% 50 FK28C0G1H390J FK18C0G1H30J COG 47pF ±5% 50 FK28C0G1H30J FK18C0G1H30J COG 65pF ±5% 50 FK28C0G1H30J FK18C0G1H30J COG 10pF ±5% 50 FK28C0G1H30J FK18C0G1H30J COG 10pF ±5% 50 FK28C0G1H30J FK18C0G1H30J COG 10pF ±5% 50 FK28C0G1H30J FK18C0G1H30J COG 12pF ±5% 50 FK28C0G1H30J FK18C0G1H30J FK18C0G1H30J COG 12pF ±5% 50 FK28C0G1H30J FK18C0G1H30J FK18C0G1H30J COG 12pF ±5% 50 FK28C0G1H30J FK18C0G1H30J FK18C0G1H3	C0G	6.8pF	±0.5pF	50	FK28C0G1H6R8D	FK18C0G1H6R8D
COG         9pF         ±0.5pF         50         FK282CG31H090D         FK18CCG31H090D           COG         10pF         ±0.5pF         50         FK28CCG1H120D         FK18CCG1H110D           COG         12pF         ±5%         50         FK28CCG31H120D         FK18CCG31H120D           COG         13pF         ±5%         50         FK28CCG31H180D         FK18CCG31H180D           COG         22pF         ±5%         50         FK28CCG31H22DJ         FK18CCG31H22DJ           COG         22pF         ±5%         50         FK28CCG31H27DJ         FK18CCG31H22DJ           COG         27pF         ±5%         50         FK28CCG31H27DJ         FK18CCG31H22DJ           COG         33pF         ±5%         50         FK28CCG31H330J         FK18CCG31H330J           COG         33pF         ±5%         50         FK28CCG31H390J         FK18CCG31H390J           COG         35pF         ±5%         50         FK28CCG31H30J         FK18CCG31H390J           COG         45pF         ±5%         50         FK28CCG31H30J         FK18CCG31H390J           COG         56pF         ±5%         50         FK28CCG31H32DJ         FK18CCG31H32DJ           COG	C0G	7pF	±0.5pF	50	FK28C0G1H070D	FK18C0G1H070D
COG         10pF         ±0,5pF         50         FK28C0G1H100D         FK18C0G1H120J           COG         12pF         ±5%         50         FK28C0G1H120J         FK18C0G1H120J           COG         15pF         ±5%         50         FK28C0G1H180J         FK18C0G1H180J           COG         18pF         ±5%         50         FK28C0G1H180J         FK18C0G1H180J           COG         22pF         ±5%         50         FK28C0G1H270J         FK18C0G1H220J           COG         27pF         ±5%         50         FK28C0G1H270J         FK18C0G1H220J           COG         33pF         ±5%         50         FK28C0G1H270J         FK18C0G1H270J           COG         33pF         ±5%         50         FK28C0G1H390J         FK18C0G1H390J           COG         33pF         ±5%         50         FK28C0G1H390J         FK18C0G1H390J           COG         47pF         ±5%         50         FK28C0G1H300J         FK18C0G1H30J           COG         56pF         ±5%         50         FK28C0G1H800J         FK18C0G1H80J           COG         82pF         ±5%         50         FK28C0G1H80J         FK18C0G1H80J           COG         82pF         ±		8pF	±0.5pF	50	FK28C0G1H080D	FK18C0G1H080D
COG         12pF         ±5%         50         FK28C0G1H120J         FK18C0G1H150J           COG         15pF         ±5%         50         FK28C0G1H150J         FK18C0G1H150J           COG         18pF         ±5%         50         FK28C0G1H120J         FK18C0G1H220J           COG         22pF         ±5%         50         FK28C0G1H220J         FK18C0G1H220J           COG         27pF         ±5%         50         FK28C0G1H30J         FK18C0G1H220J           COG         33pF         ±5%         50         FK28C0G1H30J         FK18C0G1H330J           COG         33pF         ±5%         50         FK28C0G1H30J         FK18C0G1H330J           COG         34pF         ±5%         50         FK28C0G1H30J         FK18C0G1H330J           COG         47pF         ±5%         50         FK28C0G1H470J         FK18C0G1H30J           COG         56pF         ±5%         50         FK28C0G1H80J         FK18C0G1H50J           COG         68pF         ±5%         50         FK28C0G1H80J         FK18C0G1H50J           COG         82pF         ±5%         50         FK28C0G1H20J         FK18C0G1H50J           COG         15pF         ±5%	C0G	9pF	±0.5pF	50	FK28C0G1H090D	FK18C0G1H090D
COG         15pF         ±5%         50         FK28C0G1H180J         FK18C0G1H150J           COG         18pF         ±5%         50         FK28C0G1H180J         FK18C0G1H180J           COG         22pF         ±5%         50         FK28C0G1H220J         FK18C0G1H220J           COG         27pF         ±5%         50         FK28C0G1H220J         FK18C0G1H270J           COG         33pF         ±5%         50         FK28C0G1H390J         FK18C0G1H330J           COG         39pF         ±5%         50         FK28C0G1H390J         FK18C0G1H390J           COG         47pF         ±5%         50         FK28C0G1H500J         FK18C0G1H390J           COG         56pF         ±5%         50         FK28C0G1H500J         FK18C0G1H390J           COG         68pF         ±5%         50         FK28C0G1H500J         FK18C0G1H300J           COG         68pF         ±5%         50         FK28C0G1H860J         FK18C0G1H860J           COG         82pF         ±5%         50         FK28C0G1H101J         FK18C0G1H860J           COG         10pF         ±5%         50         FK28C0G1H101J         FK18C0G1H101J           COG         120pF <td< td=""><td>C0G</td><td>10pF</td><td>±0.5pF</td><td>50</td><td>FK28C0G1H100D</td><td>FK18C0G1H100D</td></td<>	C0G	10pF	±0.5pF	50	FK28C0G1H100D	FK18C0G1H100D
COG         18pF         ±5%         50         FK28COG1H120J         FK18COG1H220J         FK18COG1H220J           COG         22pF         ±5%         50         FK28COG1H220J         FK18COG1H220J           COG         27pF         ±5%         50         FK28COG1H270J         FK18COG1H270J           COG         33pF         ±5%         50         FK28COG1H330J         FK18COG1H390J           COG         39pF         ±5%         50         FK28COG1H390J         FK18COG1H390J           COG         47pF         ±5%         50         FK28COG1H390J         FK18COG1H470J           COG         56pF         ±5%         50         FK28COG1H460J         FK18COG1H470J           COG         56pF         ±5%         50         FK28COG1H680J         FK18COG1H680J           COG         68pF         ±5%         50         FK28COG1H820J         FK18COG1H820J           COG         10pF         ±5%         50         FK28COG1H180J         FK18COG1H820J           COG         10pF         ±5%         50         FK28COG1H1101J         FK18COG1H121J           COG         12opF         ±5%         50         FK28COG1H1101J         FK18COG1H151J           COG		12pF	±5%		FK28C0G1H120J	FK18C0G1H120J
COG         22pF         ±5%         50         FK28C0G1H22U         FK18C0G1H22U           COG         27pF         ±5%         50         FK28C0G1H27U         FK18C0G1H27U           COG         33pF         ±5%         50         FK28C0G1H33U         FK18C0G1H33U           COG         33pF         ±5%         50         FK28C0G1H39U         FK18C0G1H39U           COG         35pF         ±5%         50         FK28C0G1H47U         FK18C0G1H47U           COG         56pF         ±5%         50         FK28C0G1H46U         FK18C0G1H46U           COG         68pF         ±5%         50         FK28C0G1H88U         FK18C0G1H8BU           COG         82pF         ±5%         50         FK28C0G1H82U         FK18C0G1H8BU           COG         100pF         ±5%         50         FK28C0G1H121J         FK18C0G1H121J           COG         120pF         ±5%         50         FK28C0G1H121J         FK18C0G1H121J           COG         120pF         ±5%         50         FK28C0G1H121J         FK18C0G1H181J           COG         120pF         ±5%         50         FK28C0G1H181J         FK18C0G1H21J           COG         120pF         ±5%	C0G	15pF	±5%	50	FK28C0G1H150J	FK18C0G1H150J
COG         27pF         ±5%         50         FK28COG1H270J         FK18COG1H270J           COG         33pF         ±5%         50         FK28COG1H330J         FK18COG1H330J           COG         39pF         ±5%         50         FK28COG1H430J         FK18COG1H390J           COG         47pF         ±5%         50         FK28COG1H470J         FK18COG1H470J           COG         56pF         ±5%         50         FK28COG1H460J         FK18COG1H560J           COG         68pF         ±5%         50         FK28COG1H660J         FK18COG1H680J           COG         68pF         ±5%         50         FK28COG1H680J         FK18COG1H680J           COG         100pF         ±5%         50         FK28COG1H120J         FK18COG1H1820J           COG         120pF         ±5%         50         FK28COG1H121J         FK18COG1H121J           COG         150pF         ±5%         50         FK28COG1H181J         FK18COG1H121J           COG         150pF         ±5%         50         FK28COG1H181J         FK18COG1H181J           COG         150pF         ±5%         50         FK28COG1H181J         FK18COG1H181J           COG         270pF		18pF		50	FK28C0G1H180J	FK18C0G1H180J
Dec	C0G	22pF	±5%	50	FK28C0G1H220J	FK18C0G1H220J
COG         39pF         ±5%         50         FK28COG1H390J         FK18COG1H390J           COG         47pF         ±5%         50         FK28COG1H470J         FK18COG1H470J           COG         56pF         ±5%         50         FK28COG1H660J         FK18COG1H680J           COG         68pF         ±5%         50         FK28COG1H680J         FK18COG1H680J           COG         82pF         ±5%         50         FK28COG1H101J         FK18COG1H820J           COG         100pF         ±5%         50         FK28COG1H101J         FK18COG1H820J           COG         120pF         ±5%         50         FK28COG1H121J         FK18COG1H121J           COG         150pF         ±5%         50         FK28COG1H151J         FK18COG1H151J           COG         150pF         ±5%         50         FK28COG1H21J         FK18COG1H21J           COG         150pF         ±5%         50         FK28COG1H81J         FK18COG1H221J           COG         220pF         ±5%         50         FK28COG1H81J         FK18COG1H221J           COG         270pF         ±5%         50         FK28COG1H331J         FK18COG1H221J           COG         270pF	C0G	27pF		50	FK28C0G1H270J	FK18C0G1H270J
COG         47pF         ±5%         50         FK28COG1H470J         FK18COG1H470J           COG         56pF         ±5%         50         FK28COG1H560J         FK18COG1H560J           COG         68pF         ±5%         50         FK28COG1H680J         FK18COG1H680J           COG         82pF         ±5%         50         FK28COG1H820J         FK18COG1H820J           COG         100pF         ±5%         50         FK28COG1H101J         FK18COG1H820J           COG         120pF         ±5%         50         FK28COG1H121J         FK18COG1H121J           COG         150pF         ±5%         50         FK28COG1H121J         FK18COG1H121J           COG         150pF         ±5%         50         FK28COG1H121J         FK18COG1H151J           COG         180pF         ±5%         50         FK28COG1H121J         FK18COG1H121J           COG         220pF         ±5%         50         FK28COG1H221J         FK18COG1H221J           COG         270pF         ±5%         50         FK28COG1H221J         FK18COG1H221J           COG         330pF         ±5%         50         FK28COG1H331J         FK18COG1H221J           COG         470pF	C0G	33pF	±5%	50	FK28C0G1H330J	FK18C0G1H330J
COG         56pF         ±5%         50         FK28C0G1H560J         FK18C0G1H560J           COG         68pF         ±5%         50         FK28C0G1H680J         FK18C0G1H880J           COG         82pF         ±5%         50         FK28C0G1H82UJ         FK18C0G1H82UJ           COG         100pF         ±5%         50         FK28C0G1H101J         FK18C0G1H101J           COG         120pF         ±5%         50         FK28C0G1H121J         FK18C0G1H121J           COG         150pF         ±5%         50         FK28C0G1H121J         FK18C0G1H151J           COG         180pF         ±5%         50         FK28C0G1H121J         FK18C0G1H151J           COG         220pF         ±5%         50         FK28C0G1H221J         FK18C0G1H181J           COG         270pF         ±5%         50         FK28C0G1H271J         FK18C0G1H271J           COG         330pF         ±5%         50         FK28C0G1H271J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H331J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H331J         FK18C0G1H321J           COG         470pF	C0G	39pF	±5%	50	FK28C0G1H390J	FK18C0G1H390J
COG         68pF         ±5%         50         FK28C0G1H680J         FK18C0G1H680J           COG         82pF         ±5%         50         FK28C0G1H820J         FK18C0G1H820J           COG         100pF         ±5%         50         FK28C0G1H101J         FK18C0G1H101J           COG         120pF         ±5%         50         FK28C0G1H121J         FK18C0G1H121J           COG         150pF         ±5%         50         FK28C0G1H181J         FK18C0G1H151J           COG         180pF         ±5%         50         FK28C0G1H181J         FK18C0G1H181J           COG         220pF         ±5%         50         FK28C0G1H221J         FK18C0G1H221J           COG         270pF         ±5%         50         FK28C0G1H271J         FK18C0G1H271J           COG         330pF         ±5%         50         FK28C0G1H331J         FK18C0G1H331J           COG         330pF         ±5%         50         FK28C0G1H331J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H471J         FK18C0G1H31J           COG         470pF         ±5%         50         FK28C0G1H471J         FK18C0G1H471J           COG         560pF	C0G	47pF			FK28C0G1H470J	FK18C0G1H470J
COG         82PF         ±5%         50         FK28COG1H820J         FK18COG1H820J           COG         100pF         ±5%         50         FK28COG1H101J         FK18COG1H101J           COG         120pF         ±5%         50         FK28COG1H121J         FK18COG1H121J           COG         150pF         ±5%         50         FK28COG1H121J         FK18COG1H151J           COG         180pF         ±5%         50         FK28COG1H181J         FK18COG1H181J           COG         220pF         ±5%         50         FK28COG1H221J         FK18COG1H221J           COG         220pF         ±5%         50         FK28COG1H221J         FK18COG1H221J           COG         270pF         ±5%         50         FK28COG1H331J         FK18COG1H271J           COG         330pF         ±5%         50         FK28COG1H331J         FK18COG1H271J           COG         390pF         ±5%         50         FK28COG1H331J         FK18COG1H391J           COG         390pF         ±5%         50         FK28COG1H391J         FK18COG1H391J           COG         470pF         ±5%         50         FK28COG1H391J         FK18COG1H391J           COG         680pF		<u>'</u>				
COG         100pF         ±5%         50         FK28C0G1H101J         FK18C0G1H101J           COG         120pF         ±5%         50         FK28C0G1H121J         FK18C0G1H121J           COG         150pF         ±5%         50         FK28C0G1H151J         FK18C0G1H151J           COG         180pF         ±5%         50         FK28C0G1H181J         FK18C0G1H181J           COG         220pF         ±5%         50         FK28C0G1H221J         FK18C0G1H221J           COG         270pF         ±5%         50         FK28C0G1H271J         FK18C0G1H271J           COG         270pF         ±5%         50         FK28C0G1H331J         FK18C0G1H271J           COG         330pF         ±5%         50         FK28C0G1H391J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H391J         FK18C0G1H391J           COG         470pF         ±5%         50         FK28C0G1H471J         FK18C0G1H471J           COG         560pF         ±5%         50         FK28C0G1H561J         FK18C0G1H561J           COG         560pF         ±5%         50         FK28C0G1H821J         FK18C0G1H561J           COG         820pF		<u>'</u>			FK28C0G1H680J	FK18C0G1H680J
COG         120pF         ±5%         50         FK28C0G1H121J         FK18C0G1H121J           COG         150pF         ±5%         50         FK28C0G1H151J         FK18C0G1H161J           COG         180pF         ±5%         50         FK28C0G1H221J         FK18C0G1H181J           COG         220pF         ±5%         50         FK28C0G1H221J         FK18C0G1H221J           COG         270pF         ±5%         50         FK28C0G1H271J         FK18C0G1H271J           COG         330pF         ±5%         50         FK28C0G1H331J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H391J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H391J         FK18C0G1H391J           COG         390pF         ±5%         50         FK28C0G1H561J         FK18C0G1H471J           COG         560pF         ±5%         50         FK28C0G1H861J         FK18C0G1H471J           COG         680pF         ±5%         50         FK28C0G1H861J         FK18C0G1H661J           COG         820pF         ±5%         50         FK28C0G1H22J         FK18C0G1H21J           COG         1200pF						
COG         150pF         ±5%         50         FK28C0G1H151J         FK18C0G1H151J           COG         180pF         ±5%         50         FK28C0G1H181J         FK18C0G1H181J           COG         220pF         ±5%         50         FK28C0G1H221J         FK18C0G1H221J           COG         270pF         ±5%         50         FK28C0G1H271J         FK18C0G1H271J           COG         330pF         ±5%         50         FK28C0G1H331J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H391J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H391J         FK18C0G1H391J           COG         470pF         ±5%         50         FK28C0G1H561J         FK18C0G1H471J           COG         560pF         ±5%         50         FK28C0G1H561J         FK18C0G1H661J           COG         680pF         ±5%         50         FK28C0G1H861J         FK18C0G1H661J           COG         820pF         ±5%         50         FK28C0G1H821J         FK18C0G1H821J           COG         1000pF         ±5%         50         FK28C0G1H102J         FK18C0G1H162J           COG         1500pF <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
COG         180pF         ±5%         50         FK28C0G1H181J         FK18C0G1H181J           COG         220pF         ±5%         50         FK28C0G1H221J         FK18C0G1H221J           COG         270pF         ±5%         50         FK28C0G1H271J         FK18C0G1H271J           COG         330pF         ±5%         50         FK28C0G1H331J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H391J         FK18C0G1H391J           COG         470pF         ±5%         50         FK28C0G1H471J         FK18C0G1H391J           COG         560pF         ±5%         50         FK28C0G1H561J         FK18C0G1H471J           COG         560pF         ±5%         50         FK28C0G1H561J         FK18C0G1H561J           COG         680pF         ±5%         50         FK28C0G1H861J         FK18C0G1H681J           COG         820pF         ±5%         50         FK28C0G1H821J         FK18C0G1H821J           COG         1000pF         ±5%         50         FK28C0G1H102J         FK18C0G1H22J           COG         1200pF         ±5%         50         FK28C0G1H122J         FK18C0G1H122J           COG         1500pF <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
COG         220pF         ±5%         50         FK28C0G1H221J         FK18C0G1H221J           COG         270pF         ±5%         50         FK28C0G1H271J         FK18C0G1H271J           COG         330pF         ±5%         50         FK28C0G1H331J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H391J         FK18C0G1H391J           COG         470pF         ±5%         50         FK28C0G1H471J         FK18C0G1H471J           COG         560pF         ±5%         50         FK28C0G1H561J         FK18C0G1H471J           COG         680pF         ±5%         50         FK28C0G1H561J         FK18C0G1H661J           COG         680pF         ±5%         50         FK28C0G1H861J         FK18C0G1H681J           COG         820pF         ±5%         50         FK28C0G1H821J         FK18C0G1H681J           COG         1000pF         ±5%         50         FK28C0G1H821J         FK18C0G1H102J           COG         1200pF         ±5%         50         FK28C0G1H102J         FK18C0G1H122J           COG         1500pF         ±5%         50         FK28C0G1H22J         FK18C0G1H182J           COG         1800pF </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
COG         270pF         ±5%         50         FK28C0G1H271J         FK18C0G1H271J           COG         330pF         ±5%         50         FK28C0G1H331J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H391J         FK18C0G1H4391J           COG         470pF         ±5%         50         FK28C0G1H471J         FK18C0G1H471J           COG         560pF         ±5%         50         FK28C0G1H561J         FK18C0G1H561J           COG         680pF         ±5%         50         FK28C0G1H681J         FK18C0G1H681J           COG         820pF         ±5%         50         FK28C0G1H821J         FK18C0G1H681J           COG         820pF         ±5%         50         FK28C0G1H821J         FK18C0G1H821J           COG         1000pF         ±5%         50         FK28C0G1H102J         FK18C0G1H102J           COG         1200pF         ±5%         50         FK28C0G1H152J         FK18C0G1H152J           COG         1200pF         ±5%         50         FK28C0G1H182J         FK18C0G1H182J           COG         2200pF         ±5%         50         FK28C0G1H222J         FK18C0G1H222J           COG         2200p						
COG         330pF         ±5%         50         FK28C0G1H331J         FK18C0G1H331J           COG         390pF         ±5%         50         FK28C0G1H391J         FK18C0G1H391J           COG         470pF         ±5%         50         FK28C0G1H471J         FK18C0G1H471J           COG         560pF         ±5%         50         FK28C0G1H561J         FK18C0G1H561J           COG         680pF         ±5%         50         FK28C0G1H681J         FK18C0G1H681J           COG         820pF         ±5%         50         FK28C0G1H821J         FK18C0G1H681J           COG         1000pF         ±5%         50         FK28C0G1H102J         FK18C0G1H821J           COG         1200pF         ±5%         50         FK28C0G1H102J         FK18C0G1H102J           COG         1200pF         ±5%         50         FK28C0G1H122J         FK18C0G1H122J           COG         1500pF         ±5%         50         FK28C0G1H152J         FK18C0G1H152J           COG         1800pF         ±5%         50         FK28C0G1H22J         FK18C0G1H22J           COG         2700pF         ±5%         50         FK28C0G1H22J         FK18C0G1H22J           COG         3300pF </td <td></td> <td>•</td> <td></td> <td></td> <td></td> <td></td>		•				
COG         390PF         ±5%         50         FK28C0G1H391J         FK18C0G1H391J           COG         470PF         ±5%         50         FK28C0G1H471J         FK18C0G1H471J           COG         560PF         ±5%         50         FK28C0G1H561J         FK18C0G1H561J           COG         680PF         ±5%         50         FK28C0G1H681J         FK18C0G1H681J           COG         820PF         ±5%         50         FK28C0G1H821J         FK18C0G1H821J           COG         1000PF         ±5%         50         FK28C0G1H102J         FK18C0G1H102J           COG         1200PF         ±5%         50         FK28C0G1H1122J         FK18C0G1H1122J           COG         1500PF         ±5%         50         FK28C0G1H152J         FK18C0G1H152J           COG         1500PF         ±5%         50         FK28C0G1H182J         FK18C0G1H182J           COG         1800PF         ±5%         50         FK28C0G1H22J         FK18C0G1H22J           COG         2200PF         ±5%         50         FK28C0G1H332J         FK18C0G1H272J           COG         2700PF         ±5%         50         FK28C0G1H332J         FK18C0G1H392J           COG         330						
COG         470pF         ±5%         50         FK28C0G1H471J         FK18C0G1H471J           COG         560pF         ±5%         50         FK28C0G1H561J         FK18C0G1H561J           COG         680pF         ±5%         50         FK28C0G1H681J         FK18C0G1H681J           COG         820pF         ±5%         50         FK28C0G1H821J         FK18C0G1H821J           COG         1000pF         ±5%         50         FK28C0G1H102J         FK18C0G1H102J           COG         1200pF         ±5%         50         FK28C0G1H122J         FK18C0G1H122J           COG         1500pF         ±5%         50         FK28C0G1H152J         FK18C0G1H152J           COG         1500pF         ±5%         50         FK28C0G1H182J         FK18C0G1H182J           COG         1800pF         ±5%         50         FK28C0G1H22J         FK18C0G1H22J           COG         2200pF         ±5%         50         FK28C0G1H22J         FK18C0G1H27J           COG         2700pF         ±5%         50         FK28C0G1H332J         FK18C0G1H32J           COG         3300pF         ±5%         50         FK28C0G1H332J         FK18C0G1H392J           COG         4700pF<						
COG         560pF         ±5%         50         FK28C0G1H561J         FK18C0G1H561J           COG         680pF         ±5%         50         FK28C0G1H681J         FK18C0G1H681J           COG         820pF         ±5%         50         FK28C0G1H821J         FK18C0G1H821J           COG         1000pF         ±5%         50         FK28C0G1H102J         FK18C0G1H102J           COG         1200pF         ±5%         50         FK28C0G1H122J         FK18C0G1H122J           COG         1500pF         ±5%         50         FK28C0G1H152J         FK18C0G1H152J           COG         1800pF         ±5%         50         FK28C0G1H182J         FK18C0G1H182J           COG         2200pF         ±5%         50         FK28C0G1H222J         FK18C0G1H222J           COG         2700pF         ±5%         50         FK28C0G1H22J         FK18C0G1H272J           COG         3300pF         ±5%         50         FK28C0G1H332J         FK18C0G1H332J           COG         3900pF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700pF         ±5%         50         FK28C0G1H362J         FK18C0G1H472J           COG         56						
COG         680pF         ±5%         50         FK28C0G1H681J         FK18C0G1H681J           COG         820pF         ±5%         50         FK28C0G1H821J         FK18C0G1H821J           COG         1000pF         ±5%         50         FK28C0G1H102J         FK18C0G1H102J           COG         1200pF         ±5%         50         FK28C0G1H122J         FK18C0G1H122J           COG         1500pF         ±5%         50         FK28C0G1H152J         FK18C0G1H152J           COG         1800pF         ±5%         50         FK28C0G1H182J         FK18C0G1H182J           COG         2200pF         ±5%         50         FK28C0G1H222J         FK18C0G1H222J           COG         2700pF         ±5%         50         FK28C0G1H272J         FK18C0G1H272J           COG         3300pF         ±5%         50         FK28C0G1H332J         FK18C0G1H332J           COG         3900pF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700pF         ±5%         50         FK28C0G1H562J         FK18C0G1H62J           COG         5600pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         6						
COG         820pF         ±5%         50         FK28C0G1H821J         FK18C0G1H821J           COG         1000pF         ±5%         50         FK28C0G1H102J         FK18C0G1H102J           COG         1200pF         ±5%         50         FK28C0G1H122J         FK18C0G1H122J           COG         1500pF         ±5%         50         FK28C0G1H152J         FK18C0G1H152J           COG         1800pF         ±5%         50         FK28C0G1H182J         FK18C0G1H182J           COG         2200pF         ±5%         50         FK28C0G1H222J         FK18C0G1H222J           COG         2700pF         ±5%         50         FK28C0G1H272J         FK18C0G1H272J           COG         3300pF         ±5%         50         FK28C0G1H332J         FK18C0G1H332J           COG         3900pF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700pF         ±5%         50         FK28C0G1H472J         FK18C0G1H472J           COG         5600pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         6800pF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J						
COG         1000pF         ±5%         50         FK28C0G1H102J         FK18C0G1H102J           COG         1200pF         ±5%         50         FK28C0G1H122J         FK18C0G1H122J           COG         1500pF         ±5%         50         FK28C0G1H152J         FK18C0G1H152J           COG         1800pF         ±5%         50         FK28C0G1H182J         FK18C0G1H182J           COG         2200pF         ±5%         50         FK28C0G1H222J         FK18C0G1H222J           COG         2700pF         ±5%         50         FK28C0G1H272J         FK18C0G1H272J           COG         3300pF         ±5%         50         FK28C0G1H332J         FK18C0G1H332J           COG         3900pF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700pF         ±5%         50         FK28C0G1H472J         FK18C0G1H472J           COG         5600pF         ±5%         50         FK28C0G1H562J         FK18C0G1H682J           COG         6800pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200pF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J						
COG         1200pF         ±5%         50         FK28C0G1H122J         FK18C0G1H122J           COG         1500pF         ±5%         50         FK28C0G1H152J         FK18C0G1H152J           COG         1800pF         ±5%         50         FK28C0G1H182J         FK18C0G1H182J           COG         2200pF         ±5%         50         FK28C0G1H222J         FK18C0G1H222J           COG         2700pF         ±5%         50         FK28C0G1H272J         FK18C0G1H272J           COG         3300pF         ±5%         50         FK28C0G1H332J         FK18C0G1H332J           COG         3900pF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700pF         ±5%         50         FK28C0G1H472J         FK18C0G1H472J           COG         5600pF         ±5%         50         FK28C0G1H562J         FK18C0G1H682J           COG         6800pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200pF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J						
COG         1500pF         ±5%         50         FK28C0G1H152J         FK18C0G1H152J           COG         1800pF         ±5%         50         FK28C0G1H182J         FK18C0G1H182J           COG         2200pF         ±5%         50         FK28C0G1H222J         FK18C0G1H222J           COG         2700pF         ±5%         50         FK28C0G1H272J         FK18C0G1H272J           COG         3300pF         ±5%         50         FK28C0G1H332J         FK18C0G1H332J           COG         3900pF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700pF         ±5%         50         FK28C0G1H472J         FK18C0G1H472J           COG         5600pF         ±5%         50         FK28C0G1H562J         FK18C0G1H682J           COG         6800pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200pF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J						
COG         1800pF         ±5%         50         FK28C0G1H182J         FK18C0G1H182J           COG         2200pF         ±5%         50         FK28C0G1H222J         FK18C0G1H222J           COG         2700pF         ±5%         50         FK28C0G1H272J         FK18C0G1H272J           COG         3300pF         ±5%         50         FK28C0G1H332J         FK18C0G1H332J           COG         3900pF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700pF         ±5%         50         FK28C0G1H472J         FK18C0G1H472J           COG         5600pF         ±5%         50         FK28C0G1H562J         FK18C0G1H682J           COG         6800pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200pF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J						
COG         2200pF         ±5%         50         FK28C0G1H222J         FK18C0G1H222J           COG         2700pF         ±5%         50         FK28C0G1H272J         FK18C0G1H272J           COG         3300pF         ±5%         50         FK28C0G1H332J         FK18C0G1H332J           COG         3900pF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700pF         ±5%         50         FK28C0G1H472J         FK18C0G1H472J           COG         5600pF         ±5%         50         FK28C0G1H562J         FK18C0G1H562J           COG         6800pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200pF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J						
COG         2700pF         ±5%         50         FK28C0G1H272J         FK18C0G1H272J           COG         3300pF         ±5%         50         FK28C0G1H332J         FK18C0G1H332J           COG         3900pF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700pF         ±5%         50         FK28C0G1H472J         FK18C0G1H472J           COG         5600pF         ±5%         50         FK28C0G1H562J         FK18C0G1H562J           COG         6800pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200pF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J						
COG         3300PF         ±5%         50         FK28C0G1H332J         FK18C0G1H332J           COG         3900PF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700PF         ±5%         50         FK28C0G1H472J         FK18C0G1H472J           COG         5600PF         ±5%         50         FK28C0G1H562J         FK18C0G1H562J           COG         6800PF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200PF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J						
COG         3900pF         ±5%         50         FK28C0G1H392J         FK18C0G1H392J           COG         4700pF         ±5%         50         FK28C0G1H472J         FK18C0G1H472J           COG         5600pF         ±5%         50         FK28C0G1H562J         FK18C0G1H562J           COG         6800pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200pF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J						
COG         4700PF         ±5%         50         FK28C0G1H472J         FK18C0G1H472J           COG         5600PF         ±5%         50         FK28C0G1H562J         FK18C0G1H562J           COG         6800PF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200PF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J	C0G					
COG         5600pF         ±5%         50         FK28C0G1H562J         FK18C0G1H562J           COG         6800pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200pF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J		<u>'</u>				
COG         6800pF         ±5%         50         FK28C0G1H682J         FK18C0G1H682J           COG         8200pF         ±5%         50         FK28C0G1H822J         FK18C0G1H822J		<b>'</b>				
COG 8200pF ±5% 50 FK28C0G1H822J FK18C0G1H822J						
	C0G	<u>'</u>				
COG 10000pF ±5% 50 FK28C0G1H103J FK18C0G1H103J	C0G					
	C0G	10000pF	±5%	50	FK28C0G1H103J	FK18C0G1H103J

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.



### FK24 AND FK14 TYPES SHAPES AND DIMENSIONS



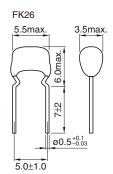


Dimensions in mm

#### RATED VOLTAGE Edc: 50V

Temperature Capacitance	Consoitance	e Tolerance	Rated voltage	Part No.	
	Сараспапсе	Tolerance	Edc(V)	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





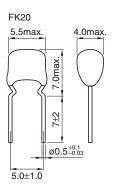
Dimensions in mm

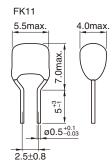
### RATED VOLTAGE Edc: 50V

Temperature	Conseitence	Tolerance	Rated voltage	Part No.	
characteristics	Capacitance	Tolerance	Edc(V)	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





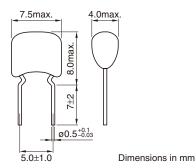
Dimensions in mm

### RATED VOLTAGE Edc: 50V

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

### FK22 TYPE

### **SHAPES AND DIMENSIONS**



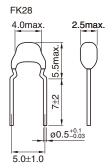
### RATED VOLTAGE Edc: 50V

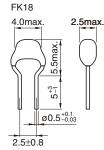
Temperature	Canacitanas	Tolerance	Rated voltage	Part No.	·
characteristics	Capacitance	roierance	Edc(V)	FK22 type	
C0G	0.15μF	±5%	50	FK22C0G1H154J	
C0G	0.22μF	±5%	50	FK22C0G1H224J	



### CAPACITANCE RANGES: CLASS 2 (TEMPERATURE STABLE) **FK28 AND FK18 TYPES**







Dimensions in mm

characteristics X7R	Capacitance				
VZD		Tolerance	Edc(V)	FK28 type	FK18 type
Λ/Π	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

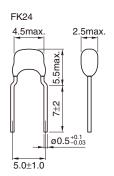
### CAPACITORS

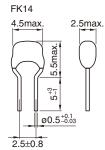


Temperature	Consolitores	Tolonopoo	Rated voltage	Part No.		
characteristics	Capacitance	Tolerance	Edc(V)	FK28 type	FK18 type	
X5R	1μF	±10%	6.3	FK28X5R0J105K	FK18X5R0J105K	
X5R	1.5µF	±10%	6.3	FK28X5R0J155K	FK18X5R0J155K	
X5R	2.2µF	±10%	6.3	FK28X5R0J225K	FK18X5R0J225K	
X5R	3.3µF	±10%	6.3	FK28X5R0J335K	FK18X5R0J335K	
X5R	4.7µF	±10%	6.3	FK28X5R0J475K	FK18X5R0J475K	
X5R	6.8µF	±10%	6.3	FK28X5R0J685K	FK18X5R0J685K	
X5R	10μF	±20%	6.3	FK28X5R0J106M	FK18X5R0J106M	



# FK24 AND FK14 TYPES SHAPES AND DIMENSIONS



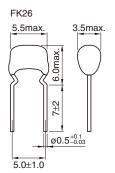


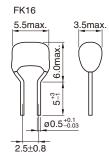
Dimensions in mm

Temperature	0	Talamana	Rated voltage	Part No.	
characteristics	Capacitance	Tolerance	Edc(V)	FK24 type	FK14 type
X7R	0.15µF	±10%	50	FK24X7R1H154K	FK14X7R1H154K
X7R	0.22µF	±10%	50	FK24X7R1H224K	FK14X7R1H224K
X7R	0.33µF	±10%	50	FK24X7R1H334K	FK14X7R1H334K
X7R	0.47µF	±10%	50	FK24X7R1H474K	FK14X7R1H474K
X7R	0.68µF	±10%	50	FK24X7R1H684K	FK14X7R1H684K
X7R	1µF	±10%	50	FK24X7R1H105K	FK14X7R1H105K
X7R	0.47µF	±10%	25	FK24X7R1E474K	FK14X7R1E474K
X7R	0.68µF	±10%	25	FK24X7R1E684K	FK14X7R1E684K
X7R	1μF	±10%	25	FK24X7R1E105K	FK14X7R1E105K
X7R	1.5µF	±10%	25	FK24X7R1E155K	FK14X7R1E155K
X7R	2.2µF	±10%	25	FK24X7R1E225K	FK14X7R1E225K
X7R	3.3µF	±10%	25	FK24X7R1E335K	FK14X7R1E335K
X7R	4.7µF	±10%	25	FK24X7R1E475K	FK14X7R1E475K
X7R	0.68µF	±10%	16	FK24X7R1C684K	FK14X7R1C684K
X7R	1µF	±10%	16	FK24X7R1C105K	FK14X7R1C105K
X7R	1.5µF	±10%	16	FK24X7R1C155K	FK14X7R1C155K
X7R	2.2µF	±10%	16	FK24X7R1C225K	FK14X7R1C225K
X7R	3.3µF	±10%	16	FK24X7R1C335K	FK14X7R1C335K
X7R	4.7µF	±10%	16	FK24X7R1C475K	FK14X7R1C475K
X7R	6.8µF	±10%	6.3	FK24X7R0J685K	FK14X7R0J685K
X7R	10µF	±10%	6.3	FK24X7R0J106K	FK14X7R0J106K
X5R	0.68µF	±10%	25	FK24X5R1E684K	FK14X5R1E684K
X5R	1μF	±10%	25	FK24X5R1E105K	FK14X5R1E105K
X5R	1.5µF	±10%	25	FK24X5R1E155K	FK14X5R1E155K
X5R	2.2µF	±10%	25	FK24X5R1E225K	FK14X5R1E225K
X5R	3.3µF	±10%	25	FK24X5R1E335K	FK14X5R1E335K
X5R	4.7μF	±10%	25	FK24X5R1E475K	FK14X5R1E475K
X5R	1µF	±10%	16	FK24X5R1C105K	FK14X5R1C105K
X5R	1.5µF	±10%	16	FK24X5R1C155K	FK14X5R1C155K
X5R	2.2µF	±10%	16	FK24X5R1C225K	FK14X5R1C225K
X5R	3.3µF	±10%	16	FK24X5R1C335K	FK14X5R1C335K
X5R	4.7µF	±10%	16	FK24X5R1C475K	FK14X5R1C475K
X5R	10µF	±10%	16	FK24X5R1C106K	FK14X5R1C106K
X5R	1.5µF	±10%	10	FK24X5R1A155K	FK14X5R1A155K
X5R	2.2µF	±10%	10	FK24X5R1A225K	FK14X5R1A225K
X5R	3.3µF	±10%	10	FK24X5R1A335K	FK14X5R1A335K
X5R	4.7µF	±10%	10	FK24X5R1A475K	FK14X5R1A475K
X5R	6.8µF	±10%	10	FK24X5R1A685K	FK14X5R1A685K
X5R	10µF	±10%	10	FK24X5R1A106K	FK14X5R1A106K
X5R	4.7µF	±10%	6.3	FK24X5R0J475K	FK14X5R0J475K
X5R	6.8µF	±10%	6.3	FK24X5R0J685K	FK14X5R0J685K
X5R	10µF	±10%	6.3	FK24X5R0J106K	FK14X5R0J106K
X5R	15µF	±20%	6.3	FK24X5R0J156M	FK14X5R0J156M
X5R	22µF	±20%	6.3	FK24X5R0J226M	FK14X5R0J226M
	p·	±=0 /0	0.0	TILL INCTIOULLUM	TITTIONIOUZZOW



# FK26 AND FK16 TYPES SHAPES AND DIMENSIONS



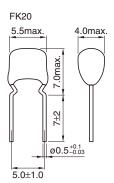


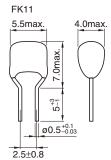
Dimensions in mm

Temperature	Canacitanas	Tolerance	Rated voltage	Part No.	
characteristics	Capacitance	iolerance	Edc(V)	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
K5R	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



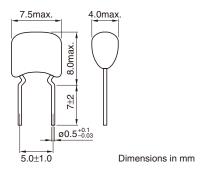


Dimensions in mm

Temperature	Consoitones	Tolerance	Rated voltage	Part No.	
characteristics	Capacitance	roierance	Edc(V)	FK20 type	FK11 type
X7R	0.68μF	±10%	50	FK20X7R1H684K	FK11X7R1H684K
X7R	1µF	±10%	50	FK20X7R1H105K	FK11X7R1H105K
(7R	1.5µF	±10%	50	FK20X7R1H155K	FK11X7R1H155K
K7R	2.2µF	±10%	50	FK20X7R1H225K	FK11X7R1H225K
K7R	3.3µF	±10%	50	FK20X7R1H335K	FK11X7R1H335K
(7R	4.7µF	±10%	50	FK20X7R1H475K	FK11X7R1H475K
(7R	2.2µF	±10%	25	FK20X7R1E225K	FK11X7R1E225K
(7R	3.3µF	±10%	25	FK20X7R1E335K	FK11X7R1E335K
(7R	4.7μF	±10%	25	FK20X7R1E475K	FK11X7R1E475K
(7R	6.8µF	±10%	25	FK20X7R1E685K	FK11X7R1E685K
(7R	10μF	±10%	25	FK20X7R1E106K	FK11X7R1E106K
(7R	10μF	±10%	16	FK20X7R1C106K	FK11X7R1C106K
(7R	15µF	±20%	16	FK20X7R1C156M	FK11X7R1C156M
7R	22µF	±20%	16	FK20X7R1C226M	FK11X7R1C226M
7R	22μF	±20%	10	FK20X7R1A226M	FK11X7R1A226M
(5R	2.2µF	±10%	50	FK20X5R1H225K	FK11X5R1H225K
(5R	3.3µF	±10%	50	FK20X5R1H335K	FK11X5R1H335K
(5R	4.7μF	±10%	25	FK20X5R1E475K	FK11X5R1E475K
(5R	6.8µF	±10%	25	FK20X5R1E685K	FK11X5R1E685K
(5R	10μF	±10%	25	FK20X5R1E106K	FK11X5R1E106K
(5R	10μF	±10%	16	FK20X5R1C106K	FK11X5R1C106K
(5R	15µF	±20%	16	FK20X5R1C156M	FK11X5R1C156M
(5R	22µF	±20%	16	FK20X5R1C226M	FK11X5R1C226M
(5R	15μF	±20%	10	FK20X5R1A156M	FK11X5R1A156M
(5R	22µF	±20%	10	FK20X5R1A226M	FK11X5R1A226M
(5R	22µF	±20%	6.3	FK20X5R0J226M	FK11X5R0J226M
(5R	33µF	±20%	6.3	FK20X5R0J336M	FK11X5R0J336M
(5R	47µF	±20%	6.3	FK20X5R0J476M	FK11X5R0J476M
(5R	68µF	±20%	6.3	FK20X5R0J686M	FK11X5R0J686M
(5R	100μF	±20%	6.3	FK20X5R0J107M	FK11X5R0J107M
(7S	4.7µF	±10%	50	FK20X7S1H475K	FK11X7S1H475K
(7S	6.8µF	±10%	50	FK20X7S1H685K	FK11X7S1H685K
(7S	10μF	±10%	50	FK20X7S1H106K	FK11X7S1H106K



### FK22 TYPE SHAPES AND DIMENSIONS

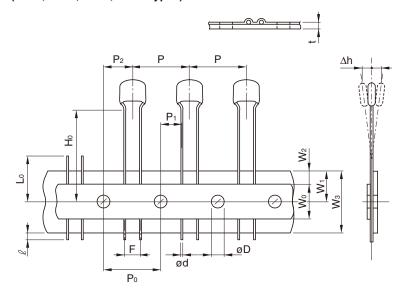


Temperature	Capacitance	Talavanaa	Rated voltage	Part No.
characteristics	(pF)	Tolerance	Edc(V)	FK22 type
X7R	1.5μF	±10%	50	FK22X7R1H155K
X7R	2.2µF	±10%	50	FK22X7R1H225K
X7R	3.3µF	±10%	50	FK22X7R1H335K
X7R	4.7μF	±10%	50	FK22X7R1H475K
X7R	6.8µF	±10%	50	FK22X7R1H685K
X7R	4.7μF	±10%	25	FK22X7R1E475K
X7R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

 $<sup>\</sup>bullet$  For more information about products with other capacitance or other data, please contact us.



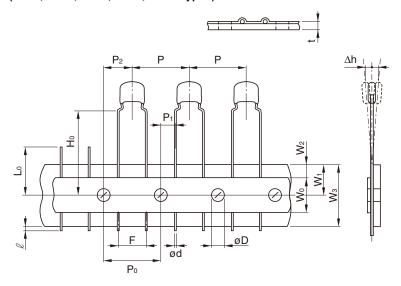
PACKAGING STYLES
TAPING DIMENSIONS
FK1 Series
(FK18, FK14, FK16, FK11 Types)



Symbol	Dimensions (mm)
Р	12.7±1.0
Po*1	12.7±0.3
P <sub>1</sub>	5.1±0.7
P <sub>2</sub>	6.35±1.3
W <sub>0</sub>	12.0±1.0
W <sub>1</sub>	9.0±0.5
W2*2	3.0max.
Wз	18.0+1.0, -0.5
H <sub>0</sub>	16.0±0.5
l t	1.0max.
t	0.6±0.2
Lo*3	11.0max.
F	2.5+0.5, -0.2
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.

FK2 Series (FK28, FK24, FK26, FK20, FK22 Types)



Symbol	Dimensions (mm)
Р	12.7±1.0
Po*1	12.7±0.3
P <sub>1</sub>	3.85±0.7
P <sub>2</sub>	6.35±1.3
Wo	12.0±1.0
W <sub>1</sub>	9.0±0.5
W2*2	3.0max.
Wз	18.0+1.0, -0.5
H <sub>0</sub>	16.0±0.5
l t	1.0max.
t	0.6±0.2
Lo*3	11.0max.
F	5.0+0.8, -0.2
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.

### **PACKAGING QUANTITIES**

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



### Capacitor with Multi-layer Lead

Product compatible with RoHS directive

### **Commercial Grade**

### Overview of the FK Mid Voltage (100 to 630V) Series

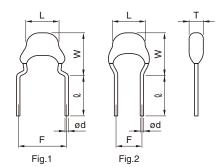
#### **FEATURES**

- The capacitors adopts the unique structure designed by TDK for high voltage applications, realizing a high withstand voltage despite being small in size.
- Rated voltage Edc: 100, 200, and 630V.
- 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

 $\frac{FK}{(1)} \frac{28}{(2)} \frac{X7R}{(3)} \frac{2A}{(4)} \frac{102}{(5)} \frac{K}{(6)} \frac{\Box \Box \Box}{(7)}$ 

- (1) Series name
- (2) Dimensions and shapes of lead wire



Dimensions in mm

Type	L max.	W max.	T max.	F	Q	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
X7S	±22%	–55 to +125°C

#### (4) Rated voltage Edc

2A	100V	
2E	250V	
2J	630V	

#### (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.

102	1,000pF	
333	33,000pF	
474	470,000pF	

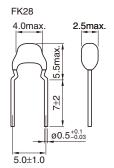
#### (6) Capacitance tolerance

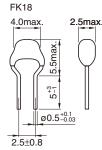
Symbol	Tolerance	
J	±5%	
K	±10%	

#### (7) TDK internal code



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





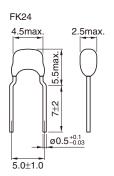
Dimensions in mm

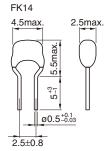
### RATED VOLTAGE Edc: 100 to 250V

Temperature	Canaaitanaa	Talayanaa	Rated voltage	Part No.		
characteristics	Capacitance	Tolerance	Edc(V)	FK28 type	FK18 type	
C0G	100pF	±5%	100	FK28C0G2A101J	FK18C0G2A101J	
C0G	120pF	±5%	100	FK28C0G2A121J	FK18C0G2A121J	
C0G	150pF	±5%	100	FK28C0G2A151J	FK18C0G2A151J	
C0G	180pF	±5%	100	FK28C0G2A181J	FK18C0G2A181J	
C0G	220pF	±5%	100	FK28C0G2A221J	FK18C0G2A221J	
C0G	270pF	±5%	100	FK28C0G2A271J	FK18C0G2A271J	
C0G	330pF	±5%	100	FK28C0G2A331J	FK18C0G2A331J	
C0G	390pF	±5%	100	FK28C0G2A391J	FK18C0G2A391J	
C0G	470pF	±5%	100	FK28C0G2A471J	FK18C0G2A471J	
C0G	560pF	±5%	100	FK28C0G2A561J	FK18C0G2A561J	
C0G	680pF	±5%	100	FK28C0G2A681J	FK18C0G2A681J	
C0G	820pF	±5%	100	FK28C0G2A821J	FK18C0G2A821J	
C0G	1000pF	±5%	100	FK28C0G2A102J	FK18C0G2A102J	
C0G	1200pF	±5%	100	FK28C0G2A122J	FK18C0G2A122J	
C0G	100pF	±5%	250	FK28C0G2E101J	FK18C0G2E101J	
C0G	120pF	±5%	250	FK28C0G2E121J	FK18C0G2E121J	
C0G	150pF	±5%	250	FK28C0G2E151J	FK18C0G2E151J	
C0G	180pF	±5%	250	FK28C0G2E181J	FK18C0G2E181J	
C0G	220pF	±5%	250	FK28C0G2E221J	FK18C0G2E221J	
C0G	270pF	±5%	250	FK28C0G2E271J	FK18C0G2E271J	
C0G	330pF	±5%	250	FK28C0G2E331J	FK18C0G2E331J	
C0G	390pF	±5%	250	FK28C0G2E391J	FK18C0G2E391J	
C0G	470pF	±5%	250	FK28C0G2E471J	FK18C0G2E471J	
C0G	560pF	±5%	250	FK28C0G2E561J	FK18C0G2E561J	
C0G	680pF	±5%	250	FK28C0G2E681J	FK18C0G2E681J	



# FK24 AND FK14 TYPES SHAPES AND DIMENSIONS





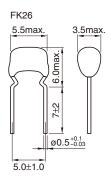
Dimensions in mm

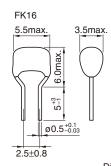
### RATED VOLTAGE Edc: 100 to 250V

Temperature	0	T-1	Rated voltage Edc(V)	Part No.	
characteristics	Capacitance	Tolerance		FK24 type	FK14 type
C0G	1000pF	±5%	100	FK24C0G2A102J	FK14C0G2A102J
C0G	1200pF	±5%	100	FK24C0G2A122J	FK14C0G2A122J
C0G	1500pF	±5%	100	FK24C0G2A152J	FK14C0G2A152J
C0G	1800pF	±5%	100	FK24C0G2A182J	FK14C0G2A182J
C0G	2200pF	±5%	100	FK24C0G2A222J	FK14C0G2A222J
C0G	2700pF	±5%	100	FK24C0G2A272J	FK14C0G2A272J
C0G	3300pF	±5%	100	FK24C0G2A332J	FK14C0G2A332J
C0G	3900pF	±5%	100	FK24C0G2A392J	FK14C0G2A392J
C0G	4700pF	±5%	100	FK24C0G2A472J	FK14C0G2A472J
C0G	820pF	±5%	250	FK24C0G2E821J	FK14C0G2E821J
C0G	1000pF	±5%	250	FK24C0G2E102J	FK14C0G2E102J
C0G	1200pF	±5%	250	FK24C0G2E122J	FK14C0G2E122J
C0G	1500pF	±5%	250	FK24C0G2E152J	FK14C0G2E152J
C0G	1800pF	±5%	250	FK24C0G2E182J	FK14C0G2E182J
C0G	2200pF	±5%	250	FK24C0G2E222J	FK14C0G2E222J
C0G	2700pF	±5%	250	FK24C0G2E272J	FK14C0G2E272J



# FK26 AND FK16 TYPES SHAPES AND DIMENSIONS





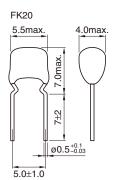
Dimensions in mm

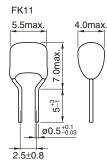
### RATED VOLTAGE Edc: 100 to 630V

Temperature	Canacitanas	Capacitance Tolerance	Rated voltage	Part No.		
characteristics	Capacitance	roierance	Edc(V)	FK26 type	FK16 type	
C0G	3900pF	±5%	100	FK26C0G2A392J	FK16C0G2A392J	
C0G	4700pF	±5%	100	FK26C0G2A472J	FK16C0G2A472J	
C0G	5600pF	±5%	100	FK26C0G2A562J	FK16C0G2A562J	
C0G	6800pF	±5%	100	FK26C0G2A682J	FK16C0G2A682J	
C0G	8200pF	±5%	100	FK26C0G2A822J	FK16C0G2A822J	
C0G	10000pF	±5%	100	FK26C0G2A103J	FK16C0G2A103J	
C0G	3300pF	±5%	250	FK26C0G2E332J		
C0G	3900pF	±5%	250	FK26C0G2E392J		
C0G	4700pF	±5%	250	FK26C0G2E472J		
C0G	5600pF	±5%	250	FK26C0G2E562J		
C0G	6800pF	±5%	250	FK26C0G2E682J		
C0G	8200pF	±5%	250	FK26C0G2E822J		
C0G	100pF	±5%	630	FK26C0G2J101J		
C0G	120pF	±5%	630	FK26C0G2J121J		
C0G	150pF	±5%	630	FK26C0G2J151J		
C0G	180pF	±5%	630	FK26C0G2J181J		
C0G	220pF	±5%	630	FK26C0G2J221J		
C0G	270pF	±5%	630	FK26C0G2J271J		
C0G	330pF	±5%	630	FK26C0G2J331J		
C0G	390pF	±5%	630	FK26C0G2J391J		
C0G	470pF	±5%	630	FK26C0G2J471J		
C0G	560pF	±5%	630	FK26C0G2J561J		
C0G	680pF	±5%	630	FK26C0G2J681J		
C0G	820pF	±5%	630	FK26C0G2J821J		
C0G	1000pF	±5%	630	FK26C0G2J102J		
C0G	1200pF	±5%	630	FK26C0G2J122J		
C0G	1500pF	±5%	630	FK26C0G2J152J		
C0G	1800pF	±5%	630	FK26C0G2J182J		
C0G	2200pF	±5%	630	FK26C0G2J222J		
C0G	2700pF	±5%	630	FK26C0G2J272J		
C0G	3300pF	±5%	630	FK26C0G2J332J		



# FK20 AND FK11 TYPES SHAPES AND DIMENSIONS



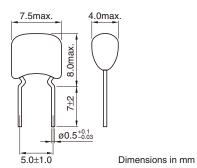


Dimensions in mm

### RATED VOLTAGE Edc: 100 to 630V

Temperature characteristics Capacita	Consoitones	Tolerance	Rated voltage	Part No.	
	Capacitance	Tolerance	Edc(V)	FK20 type	FK11 type
C0G	15000pF	±5%	100	FK20C0G2A153J	FK11C0G2A153J
C0G	22000pF	±5%	100	FK20C0G2A223J	FK11C0G2A223J
C0G	33000pF	±5%	100	FK20C0G2A333J	FK11C0G2A333J
COG	47000pF	±5%	100	FK20C0G2A473J	FK11C0G2A473J
C0G	10000pF	±5%	250	FK20C0G2E103J	
COG	15000pF	±5%	250	FK20C0G2E153J	
C0G	3900pF	±5%	630	FK20C0G2J392J	
C0G	4700pF	±5%	630	FK20C0G2J472J	
C0G	5600pF	±5%	630	FK20C0G2J562J	
C0G	6800pF	±5%	630	FK20C0G2J682J	

### FK22 TYPE SHAPES AND DIMENSIONS

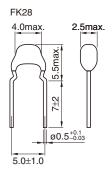


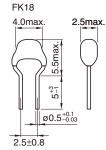
### RATED VOLTAGE Edc: 100 to 630V

Temperature	Consoitenes	T-1	Rated voltage	Part No.
characteristics	aracteristics Capacitance	Tolerance	Edc(V)	FK22 type
C0G	68000pF	±5%	100	FK22C0G2A683J
C0G	0.1μF	±5%	100	FK22C0G2A104J
C0G	22000pF	±5%	250	FK22C0G2E223J
C0G	33000pF	±5%	250	FK22C0G2E333J
C0G	47000pF	±5%	250	FK22C0G2E473J
C0G	8200pF	±5%	630	FK22C0G2J822J
C0G	10000pF	±5%	630	FK22C0G2J103J
C0G	15000pF	±5%	630	FK22C0G2J153J
C0G	22000pF	±5%	630	FK22C0G2J223J



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





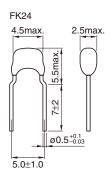
Dimensions in mm

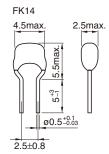
### RATED VOLTAGE Edc: 100 to 250V

Temperature Capacitance	Consoitones	Tolerance	Rated voltage	Part No.	
	Tolerance	Edc(V)	FK28 type	FK18 type	
X7R	1000pF	±10%	100	FK28X7R2A102K	FK18X7R2A102K
X7R	1500pF	±10%	100	FK28X7R2A152K	FK18X7R2A152K
X7R	2200pF	±10%	100	FK28X7R2A222K	FK18X7R2A222K
X7R	3300pF	±10%	100	FK28X7R2A332K	FK18X7R2A332K
X7R	4700pF	±10%	100	FK28X7R2A472K	FK18X7R2A472K
X7R	6800pF	±10%	100	FK28X7R2A682K	FK18X7R2A682K
X7R	10000pF	±10%	100	FK28X7R2A103K	FK18X7R2A103K
X7R	15000pF	±10%	100	FK28X7R2A153K	FK18X7R2A153K
X7R	22000pF	±10%	100	FK28X7R2A223K	FK18X7R2A223K
X7S	33000pF	±10%	100	FK28X7S2A333K	FK18X7S2A333K
X7S	47000pF	±10%	100	FK28X7S2A473K	FK18X7S2A473K
X7S	68000pF	±10%	100	FK28X7S2A683K	FK18X7S2A683K
X7S	0.1µF	±10%	100	FK28X7S2A104K	FK18X7S2A104K



# FK24 AND FK14 TYPES SHAPES AND DIMENSIONS





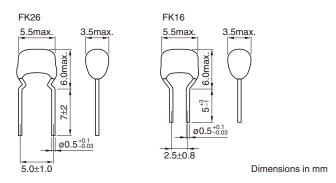
Dimensions in mm

#### RATED VOLTAGE Edc: 100 to 250V

Temperature	Capacitance	Tolerance	Rated voltage	Part No.	
characteristics	Capacitance	iolerance	Edc(V)	FK24 type	FK14 type
X7R	1000pF	±10%	100	FK24X7R2A102K	FK14X7R2A102K
X7R	1500pF	±10%	100	FK24X7R2A152K	FK14X7R2A152K
X7R	2200pF	±10%	100	FK24X7R2A222K	FK14X7R2A222K
X7R	3300pF	±10%	100	FK24X7R2A332K	FK14X7R2A332K
X7R	4700pF	±10%	100	FK24X7R2A472K	FK14X7R2A472K
X7R	6800pF	±10%	100	FK24X7R2A682K	FK14X7R2A682K
X7R	10000pF	±10%	100	FK24X7R2A103K	FK14X7R2A103K
X7R	15000pF	±10%	100	FK24X7R2A153K	FK14X7R2A153K
X7R	22000pF	±10%	100	FK24X7R2A223K	FK14X7R2A223K
X7R	33000pF	±10%	100	FK24X7R2A333K	FK14X7R2A333K
X7R	47000pF	±10%	100	FK24X7R2A473K	FK14X7R2A473K
X7R	68000pF	±10%	100	FK24X7R2A683K	FK14X7R2A683K
X7R	0.1μF	±10%	100	FK24X7R2A104K	FK14X7R2A104K
X7S	0.15μF	±10%	100	FK24X7S2A154K	FK14X7S2A154K
X7S	0.22µF	±10%	100	FK24X7S2A224K	FK14X7S2A224K
X7S	0.33μF	±10%	100	FK24X7S2A334K	FK14X7S2A334K
X7S	0.47μF	±10%	100	FK24X7S2A474K	FK14X7S2A474K
X7S	0.68μF	±10%	100	FK24X7S2A684K	FK14X7S2A684K
X7S	1μF	±10%	100	FK24X7S2A105K	FK14X7S2A105K
X7R	1000pF	±10%	250	FK24X7R2E102K	FK14X7R2E102K
X7R	1500pF	±10%	250	FK24X7R2E152K	FK14X7R2E152K
X7R	2200pF	±10%	250	FK24X7R2E222K	FK14X7R2E222K
X7R	3300pF	±10%	250	FK24X7R2E332K	FK14X7R2E332K
X7R	4700pF	±10%	250	FK24X7R2E472K	FK14X7R2E472K
X7R	6800pF	±10%	250	FK24X7R2E682K	FK14X7R2E682K
X7R	10000pF	±10%	250	FK24X7R2E103K	FK14X7R2E103K
X7R	15000pF	±10%	250	FK24X7R2E153K	FK14X7R2E153K
X7R	22000pF	±10%	250	FK24X7R2E223K	FK14X7R2E223K



### FK26 AND FK16 TYPES SHAPES AND DIMENSIONS

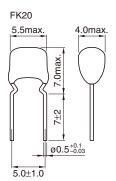


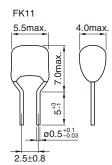
### RATED VOLTAGE Edc: 100 to 630V

Temperature	Capacitance	Tolerance	Rated voltage	Part No.	
characteristics	Сараспансе	Tolerance	Edc(V)	FK26 type	FK16 type
X7R	33000pF	±10%	100	FK26X7R2A333K	FK16X7R2A333K
X7R	47000pF	±10%	100	FK26X7R2A473K	FK16X7R2A473K
X7R	68000pF	±10%	100	FK26X7R2A683K	FK16X7R2A683K
X7R	0.1μF	±10%	100	FK26X7R2A104K	FK16X7R2A104K
X7R	0.15μF	±10%	100	FK26X7R2A154K	FK16X7R2A154K
X7R	0.22µF	±10%	100	FK26X7R2A224K	FK16X7R2A224K
X7R	0.33μF	±10%	100	FK26X7R2A334K	FK16X7R2A334K
X7R	0.47μF	±10%	100	FK26X7R2A474K	FK16X7R2A474K
X7R	0.68μF	±10%	100	FK26X7R2A684K	FK16X7R2A684K
X7R	1μF	±10%	100	FK26X7R2A105K	FK16X7R2A105K
X7S	1.5µF	±10%	100	FK26X7S2A155K	FK16X7S2A155K
X7S	2.2µF	±10%	100	FK26X7S2A225K	FK16X7S2A225K
K7R	15000pF	±10%	250	FK26X7R2E153K	
X7R	22000pF	±10%	250	FK26X7R2E223K	
X7R	33000pF	±10%	250	FK26X7R2E333K	
X7R	47000pF	±10%	250	FK26X7R2E473K	
X7R	68000pF	±10%	250	FK26X7R2E683K	
K7R	0.1µF	±10%	250	FK26X7R2E104K	
K7R	1000pF	±10%	630	FK26X7R2J102K	
K7R	1500pF	±10%	630	FK26X7R2J152K	
(7R	2200pF	±10%	630	FK26X7R2J222K	
K7R	3300pF	±10%	630	FK26X7R2J332K	
X7R	4700pF	±10%	630	FK26X7R2J472K	
K7R	6800pF	±10%	630	FK26X7R2J682K	
(7R	10000pF	±10%	630	FK26X7R2J103K	
X7R	15000pF	±10%	630	FK26X7R2J153K	
X7R	22000pF	±10%	630	FK26X7R2J223K	
X7R	33000pF	±10%	630	FK26X7R2J333K	



### FK20 AND FK11 TYPES SHAPES AND DIMENSIONS



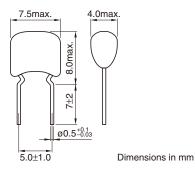


Dimensions in mm

### RATED VOLTAGE Edc: 100 to 630V

Temperature characteristics Capacitance	Canacitanas	Tolerance	Rated voltage	Part No.	
	Сараспапсе	Tolerance	Edc(V)	FK20 type	FK11 type
X7R	0.33μF	±10%	100	FK20X7R2A334K	FK11X7R2A334K
X7R	0.47μF	±10%	100	FK20X7R2A474K	FK11X7R2A474K
X7R	0.68μF	±10%	100	FK20X7R2A684K	FK11X7R2A684K
X7R	1μF	±10%	100	FK20X7R2A105K	FK11X7R2A105K
X7R	1.5µF	±10%	100	FK20X7R2A155K	FK11X7R2A155K
X7R	2.2µF	±10%	100	FK20X7R2A225K	FK11X7R2A225K
X7S	3.3µF	±10%	100	FK20X7S2A335K	FK11X7S2A335K
X7S	4.7μF	±10%	100	FK20X7S2A475K	FK11X7S2A475K
X7R	0.1µF	±10%	250	FK20X7R2E104K	
X7R	0.15μF	±10%	250	FK20X7R2E154K	
X7R	0.22µF	±10%	250	FK20X7R2E224K	
X7R	47000pF	±10%	630	FK20X7R2J473K	
X7R	68000pF	±10%	630	FK20X7R2J683K	

### FK22 TYPE SHAPES AND DIMENSIONS



### RATED VOLTAGE Edc: 100 to 630V

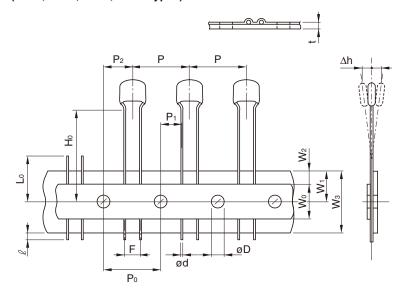
Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc(V)	Part No.
				FK22 type
X7R	0.68µF	±10%	100	FK22X7R2A684K
X7R	1μF	±10%	100	FK22X7R2A105K
X7R	1.5μF	±10%	100	FK22X7R2A155K
X7R	2.2µF	±10%	100	FK22X7R2A225K
X7R	0.15μF	±10%	250	FK22X7R2E154K
X7R	0.22μF	±10%	250	FK22X7R2E224K
X7R	0.33μF	±10%	250	FK22X7R2E334K
X7R	0.47μF	±10%	250	FK22X7R2E474K
X7R	0.1µF	±10%	630	FK22X7R2J104K

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.

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



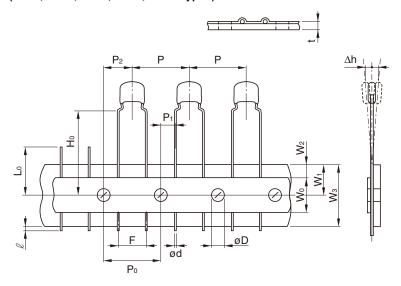
PACKAGING STYLES
TAPING DIMENSIONS
FK1 Series
(FK18, FK14, FK16, FK11 Types)



Symbol	Dimensions (mm)
Р	12.7±1.0
Po*1	12.7±0.3
P <sub>1</sub>	5.1±0.7
P <sub>2</sub>	6.35±1.3
Wo	12.0±1.0
W <sub>1</sub>	9.0±0.5
W2*2	3.0max.
Wз	18.0+1.0, -0.5
H <sub>0</sub>	16.0±0.5
l t	1.0max.
t	0.6±0.2
Lo*3	11.0max.
F	2.5+0.5, -0.2
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.

FK2 Series (FK28, FK24, FK26, FK20, FK22 Types)



Symbol	Dimensions (mm)
Р	12.7±1.0
Po*1	12.7±0.3
P <sub>1</sub>	3.85±0.7
P <sub>2</sub>	6.35±1.3
Wo	12.0±1.0
W <sub>1</sub>	9.0±0.5
W2*2	3.0max.
Wз	18.0+1.0, -0.5
H <sub>0</sub>	16.0±0.5
l t	1.0max.
t	0.6±0.2
Lo*3	11.0max.
F	5.0+0.8, -0.2
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.
- $\ensuremath{^{*3}}$  The number of consecutive gaps in the product shall be three or less.

### **PACKAGING QUANTITIES**

Туре	Quantity			
FK28, FK18				
FK24, FK14	2000 pieces/1box			
FK26, FK16				
FK20, FK11	1500 pieces/1box			
FK22	1500 pieces/1b0x			

### **Mouser Electronics**

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

### TDK:

FK24X7R2A223K	FK24X7R2A222K	FK26C0G2J471J	FK24C0G2E102J	FK26X5R0J226M	1 FK20X7R1E225K
FK26X7R2E223K	FK20X7R1H105K	FK22C0G2A104J	FK22C0G2E473J	FK26Y5V0J476Z	FK26X7R1H474K
FK24X7R1C105K	FK24X7R1C225K	FK24X5R1A475K	FK24X7R2A473K	FK24X7R2A472K	FK26Y5V1E475Z
FK22Y5V1C476Z	FK22X7R1E106K	FK22X7R1E106M	FK26Y5V1A226Z	FK26X7R2E473K	FK28C0G2A471J
FK26X7R2A104K	FK22X7R2A105K	FK22X7R2E474K	FK24Y5V1H105Z	FK22X7R1E475K	FK24X5R0J106K
FK24X5R0J106M	FK24X7R1H224K	FK26C0G2A103J	FK26C0G2E472J	FK26C0G2J102J	FK26C0G2J101J
FK20Y5V1A476Z	FK24X7R2E103K	FK24X7R2E102K	FK24C0G2A472J	FK20X7R1C106M	FK20X7R1C106K
FK26X7R2J472K	FK28C0G2E101J	FK28C0G2E221J	FK20Y5V1C226Z	FK20X7R2A474K	FK24Y5V1E225Z
FK28X7R2A222K	FK28X7R2A472K	FK26X7R1E105K	FK28X5R1A474K	FK20C0G2E103J	FK26X7R1C475K
FK22X7R2E224K	FK24Y5V1A106Z	FK28Y5V1C105Z	FK28X7R1C224K	FK14C0G2A102J	FK14C0G2A122J
FK14C0G2A152J	FK14C0G2A182J	FK14C0G2A222J	FK14C0G2A272J	FK14C0G2A332J	FK14C0G2A392J
FK14C0G2A472J	FK14C0G2E102J	FK14C0G2E122J	FK14C0G2E152J	FK14C0G2E182J	FK14C0G2E222J
FK14C0G2E821J	FK18C0G2A101J	FK18C0G2A102J	FK18C0G2A121J	FK18C0G2A122J	FK18C0G2A151J
FK18C0G2A181J	FK18C0G2A221J	FK18C0G2A271J	FK18C0G2A331J	FK18C0G2A391J	FK18C0G2A471J
FK18C0G2A561J	FK18C0G2A681J	FK18C0G2A821J	FK18C0G2E101J	FK18C0G2E121J	FK18C0G2E151J
FK18C0G2E181J	FK18C0G2E221J	FK18C0G2E271J	FK18C0G2E331J	FK18C0G2E391J	FK18C0G2E471J
FK18C0G2E561J	FK18C0G2E681J	FK20C0G2A153J	FK20C0G2A333J		