

July 2015

MLCC with Dipped Radial Lead

(Halogen-free, Automotive Grade)

FA Series

Type:

Lead pitch 5.0 mm FA28 [4.0x5.5mm] FA24 [4.5x5.5mm] FA26 [5.5x6.0mm] FA20 [5.5x7.0mm] FA22 [7.5x8.5mm]

Lead pitch 2.5 mm FA18 [4.0x5.5mm] FA14 [4.5x5.5mm] FA16 [5.5x6.0mm] FA11 [5.5x7.0mm]



公TDK

REMINDERS FOR USING THESE PRODUCTS

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

SAFETY REMINDERS

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

REMINDERS O not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.). Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C. Soldering corrections after mounting should be within the range of the conditions determined in the specifications. If overheated, a short circuit, performance deterioration, or lifespan shortening may occur. Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design. O Do not use for a purpose outside of the contents regulated in the delivery specifications. O The products listed on this catalog are intended for use in automotive electronic equipment under a normal operation and use condition. The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property. If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us. (8) Public information-processing equipment (1) Aerospace/Aviation equipment (2) Transportation equipment (electric trains, ships, etc.) (9) Military equipment (10) Electric heating apparatus, burning equipment (3) Medical equipment (4) Power-generation control equipment (11) Disaster prevention/crime prevention equipment (5) Atomic energy-related equipment

- (6) Seabed equipment
- (7) Transportation control equipment

- (12) Safety equipment
- (13) Other applications that are not considered general-purpose applications

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

MLCC with Dipped Radial Lead Halogen-free, Automotive Grade

Product compatible with RoHS directive Halogen-free

Overview of the FA Series

FEATURES

- A complete lineup with a rated voltage of 25V to 630V.
- \bigcirc Compatible with a wide capacitance range of 1pF to 22 μ F.
- O The FA series for automotive use is AEC-Q200 compliant.

APPLICATION

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

PART NUMBER CONSTRUCTION

FA		2		8		C0G	1	Н	0	10		С		1	
Series name	L	ead pitch (mm)	ſ	LxWxT Dimensions (mm)	ter	pacitance nperature racteristics	vo	ated Itage (V)	capa	minal citance pF)		pacitance lerance*	Internal code	Ρ	ackaging Style**
	1	2.5	8	4.0x5.5x2.5	C0G	0±30ppm/°C	1E	25	010	1	С	±0.25pF		0	Bulk
	2	5.0	4	4.5x5.5x3.0	X7R	±15%	1H	50	100	10	D	±0.5pF		6	Taping
			6	5.5x6.0x3.5	X7S	±22%	2A	100	101	100	J	±5%			
			0	5.5x7.0x4.0	X7T	+22, -33%	2E	250	102	1,000	Κ	±10%			
			1	5.5x7.0x4.0			2W	450			Μ	±20%			
			2	7.5x8.5x4.5			2J	630							

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

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

OPERATING TEMPERATURE RANGE

Consolitores temperature	Temperature range				
Capacitance temperature characteristics	Operating temperature	Storage temperature*			
characteristics	(°C)	(°C)			
C0G, X7R, X7S, X7T	-55 to +125	-55 to +125			

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

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

Overview of the FA Series

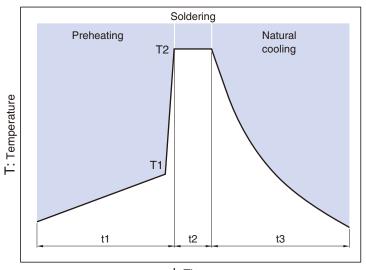
PACKAGE QUANTITY

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

CAPACITORS

Overview of the FA Series

RECOMMENDED FLOW PROFILE



t: Time

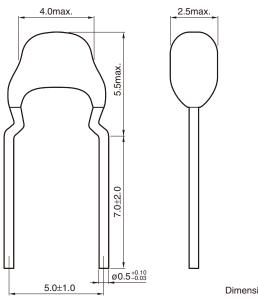
Preheating		Peak		Natural cooling
Temp.	Time	Temp.	Time	Time
T1	t1	T2	t2	t3
110°C min.	Over 60s.	260°C	Within 5s.	Over 60s.

A 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.

CAPACITORS

FA28 Type

SHAPE & DIMENSIONS





Dimensions in mm

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FA28 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
C0G	1.0pF	±0.25pF	50	FA28C0G1H010CNU0 **
C0G	1.5pF	±0.25pF	50	FA28C0G1H1R5CNU0
C0G	2.2pF	±0.25pF	50	FA28C0G1H2R2CNU0
C0G	3.3pF	±0.25pF	50	FA28C0G1H3R3CNU0
C0G	4.7pF	±0.25pF	50	FA28C0G1H4R7CNU0
C0G	6.8pF	±0.5pF	50	FA28C0G1H6R8DNU0
C0G	10pF	±0.5pF	50	FA28C0G1H100DNU0
C0G	15pF	±5%	50	FA28C0G1H150JNU0
C0G	22pF	±5%	50	FA28C0G1H220JNU0
C0G	33pF	±5%	50	FA28C0G1H330JNU0
C0G	47pF	±5%	50	FA28C0G1H470JNU0
C0G	68pF	±5%	50	FA28C0G1H680JNU0
C0G	100pF	±5%	50	FA28C0G1H101JNU0
C0G	120pF	±5%	50	FA28C0G1H121JNU0
C0G	150pF	±5%	50	FA28C0G1H151JNU0
C0G	180pF	±5%	50	FA28C0G1H181JNU0
C0G	220pF	±5%	50	FA28C0G1H221JNU0
COG	270pF	±5%	50	FA28C0G1H271JNU0
COG	330pF	±5%	50	FA28C0G1H331JNU0
C0G	390pF	±5%	50	FA28C0G1H391JNU0
COG	470pF	±5%	50	FA28C0G1H471JNU0
COG	560pF	±5%	50	FA28C0G1H561JNU0
COG	680pF	±5%	50	FA28C0G1H681JNU0
COG	820pF	±5%	50	FA28C0G1H821JNU0
COG	1nF	±5%	50	FA28C0G1H102JNU0
COG	1.2nF	±5%	50	FA28C0G1H122JNU0
COG	1.5nF	±5%	50	FA28C0G1H152JNU0
COG	1.8nF	±5%	50	FA28C0G1H182JNU0
COG	2.2nF	±5%	50	FA28C0G1H222JNU0
COG	2.7nF	±5%	50	FA28C0G1H272JNU0
COG	3.3nF	±5%	50	FA28C0G1H332JNU0
COG	3.9nF	±5%	50	FA28C0G1H392JNU0
COG	4.7nF	±5%	50	FA28C0G1H472JNU0
COG	5.6nF	±5%	50	FA28C0G1H562JNU0
COG	6.8nF	±5%	50	FA28C0G1H682JNU0
COG	8.2nF	±5%	50	FA28C0G1H822JNU0
COG	10nF	±5%	50	FA28C0G1H103JNU0
COG	1.0pF	±0.25pF	100	FA28C0G2A010CNU0
COG	1.5pF	±0.25pF	100	FA28C0G2A1R5CNU0
COG	2.2pF	±0.25pF	100	
COG	3.3pF	±0.25pF	100	FA28C0G2A2R2CNU0
COG	4.7pF	±0.25pF	100	
COG	6.8pF	±0.5pF	100	
COG	10pF	±0.5pF ±0.5pF	100	
COG	15pF		100	
COG	22pF	±5%	100	
COG	•	±5%		
COG	33pF 47pF	±5%	100	
	•	±5%		FA28C0G2A470JNU0
COG	68pF	±5%	100	FA28C0G2A680JNU0
C0G	100pF	±5%	100	FA28C0G2A101JNU0

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

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

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FA28 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
COG	120pF	±5%	100	FA28C0G2A121JNU0 **
C0G	150pF	±5%	100	FA28C0G2A151JNU0
C0G	180pF	±5%	100	FA28C0G2A181JNU0
C0G	220pF	±5%	100	FA28C0G2A221JNU0
C0G	270pF	±5%	100	FA28C0G2A271JNU0
C0G	330pF	±5%	100	FA28C0G2A331JNU0
C0G	390pF	±5%	100	FA28C0G2A391JNU0
C0G	470pF	±5%	100	FA28C0G2A471JNU0
COG	560pF	±5%	100	FA28C0G2A561JNU0
C0G	680pF	±5%	100	FA28C0G2A681JNU0
COG	820pF	±5%	100	FA28C0G2A821JNU0
COG	1nF	±5%	100	FA28C0G2A102JNU0
COG	1.2nF	±5%	100	FA28C0G2A122JNU0
COG	1.5nF	±5%	100	FA28C0G2A152JNU0
COG	1.8nF	±5%	100	FA28C0G2A182JNU0
C0G	2.2nF	±5%	100	FA28C0G2A222JNU0
COG	2.7nF	±5%	100	FA28C0G2A272JNU0
COG	3.3nF	±5%	100	FA28C0G2A332JNU0
COG	100pF	±5%	250	FA28C0G2E101JNU0
C0G	120pF	±5%	250	FA28C0G2E121JNU0
COG	150pF	±5%	250	FA28C0G2E151JNU0
C0G	180pF	±5%	250	FA28C0G2E181JNU0
C0G	220pF	±5%	250	FA28C0G2E221JNU0
C0G	270pF	±5%	250	FA28C0G2E271JNU0
COG	330pF	±5%	250	FA28C0G2E331JNU0
C0G	390pF	±5%	250	FA28C0G2E391JNU0
COG	470pF	±5%	250	FA28C0G2E471JNU0
C0G	560pF	±5%	250	FA28C0G2E561JNU0
COG	680pF	±5%	250	FA28C0G2E681JNU0
C0G	820pF	±5%	250	FA28C0G2E821JNU0
C0G	1nF	±5%	250	FA28C0G2E102JNU0
C0G	1.2nF	±5%	250	FA28C0G2E122JNU0
C0G	1.5nF	±5%	250	FA28C0G2E152JNU0
C0G	1.8nF	±5%	250	FA28C0G2E182JNU0
COG	2.2nF	±5%	250	FA28C0G2E222JNU0

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FA28 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 2 (TEMPERATURE STABLE)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
X7R	150nF	±10%	25	FA28X7R1E154KNU0
X7R	680nF	±10%	25	FA28X7R1E684KRU0
X7R	1uF	±10%	25	FA28X7R1E105KRU0
X7R	1nF	±10%	50	FA28X7R1H102KNU0
X7R	1.5nF	±10%	50	FA28X7R1H152KNU0
X7R	2.2nF	±10%	50	FA28X7R1H222KNU0
X7R	3.3nF	±10%	50	FA28X7R1H332KNU0
X7R	4.7nF	±10%	50	FA28X7R1H472KNU0
X7R	6.8nF	±10%	50	FA28X7R1H682KNU0
X7R	10nF	±10%	50	FA28X7R1H103KNU0
X7R	15nF	±10%	50	FA28X7R1H153KNU0
X7R	22nF	±10%	50	FA28X7R1H223KNU0
X7R	33nF	±10%	50	FA28X7R1H333KNU0
X7R	47nF	±10%	50	FA28X7R1H473KNU0
X7R	68nF	±10%	50	FA28X7R1H683KNU0
X7R	100nF	±10%	50	FA28X7R1H104KNU0
X7R	150nF	±10%	50	FA28X7R1H154KRU0
X7R	220nF	±10%	50	FA28X7R1H224KRU0
X7R	330nF	±10%	50	FA28X7R1H334KRU0
X7R	470nF	±10%	50	FA28X7R1H474KRU0
X7R	1nF	±10%	100	FA28X7R2A102KNU0
X7R	1.5nF	±10%	100	FA28X7R2A152KNU0
X7R	2.2nF	±10%	100	FA28X7R2A222KNU0
X7R	3.3nF	±10%	100	FA28X7R2A332KNU0
X7R	4.7nF	±10%	100	FA28X7R2A472KNU0
X7R	6.8nF	±10%	100	FA28X7R2A682KNU0
X7R	10nF	±10%	100	FA28X7R2A103KNU0
X7R	15nF	±10%	100	FA28X7R2A153KNU0
X7R	22nF	±10%	100	FA28X7R2A223KNU0
X7S	33nF	±10%	100	FA28X7S2A333KRU0
X7S	47nF	±10%	100	FA28X7S2A473KRU0
X7S	68nF	±10%	100	FA28X7S2A683KRU0
X7S	100nF	±10%	100	FA28X7S2A104KRU0

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

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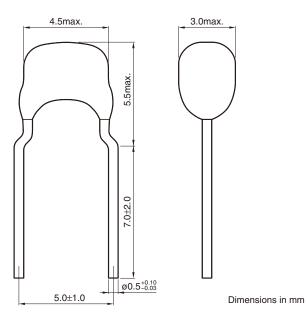
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CAPACITORS

FA24 Type

SHAPE & DIMENSIONS





FA24 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
C0G	15nF	±5%	50	FA24C0G1H153JNU0 **
C0G	22nF	±5%	50	FA24C0G1H223JNU0
C0G	33nF	±5%	50	FA24C0G1H333JNU0
C0G	3.9nF	±5%	100	FA24C0G2A392JNU0
COG	4.7nF	±5%	100	FA24C0G2A472JNU0
C0G	5.6nF	±5%	100	FA24C0G2A562JNU0
C0G	6.8nF	±5%	100	FA24C0G2A682JNU0
COG	8.2nF	±5%	100	FA24C0G2A822JNU0
COG	10nF	±5%	100	FA24C0G2A103JNU0
C0G	2.7nF	±5%	250	FA24C0G2E272JNU0
COG	3.3nF	±5%	250	FA24C0G2E332JNU0
COG	3.9nF	±5%	250	FA24C0G2E392JNU0
COG	4.7nF	±5%	250	FA24C0G2E472JNU0
COG	5.6nF	±5%	250	FA24C0G2E562JNU0
COG	6.8nF	±5%	250	FA24C0G2E682JNU0
C0G	8.2nF	±5%	250	FA24C0G2E822JNU0
COG	10nF	±5%	250	FA24C0G2E103JNU0
COG	100pF	±5%	450	FA24C0G2W101JNU0
COG	120pF	±5%	450	FA24C0G2W121JNU0
COG	150pF	±5%	450	FA24C0G2W151JNU0
COG	180pF	±5%	450	FA24C0G2W181JNU0
C0G	220pF	±5%	450	FA24C0G2W221JNU0
COG	270pF	±5%	450	FA24C0G2W271JNU0
C0G	330pF	±5%	450	FA24C0G2W331JNU0
COG	390pF	±5%	450	FA24C0G2W391JNU0
C0G	470pF	±5%	450	FA24C0G2W471JNU0
COG	560pF	±5%	450	FA24C0G2W561JNU0
C0G	680pF	±5%	450	FA24C0G2W681JNU0
C0G	820pF	±5%	450	FA24C0G2W821JNU0
C0G	1nF	±5%	450	FA24C0G2W102JNU0
COG	1.2nF	±5%	450	FA24C0G2W122JNU0
C0G	1.5nF	±5%	450	FA24C0G2W152JNU0
C0G	1.8nF	±5%	450	FA24C0G2W182JNU0
C0G	2.2nF	±5%	450	FA24C0G2W222JNU0
C0G	2.7nF	±5%	450	FA24C0G2W272JNU0
C0G	3.3nF	±5%	450	FA24C0G2W332JNU0
C0G	3.9nF	±5%	450	FA24C0G2W392JNU0
C0G	4.7nF	±5%	450	FA24C0G2W472JNU0
C0G	5.6nF	±5%	450	FA24C0G2W562JNU0

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FA24 Type

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

CLASS 2 (TEMPERATURE STABLE)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
X7R	470nF	±10%	25	FA24X7R1E474KNU0
X7R	3.3uF	±10%	25	FA24X7R1E335KRU0
X7R	4.7uF	±10%	25	FA24X7R1E475KRU0
X7R	150nF	±10%	50	FA24X7R1H154KNU0
X7R	220nF	±10%	50	FA24X7R1H224KNU0
X7R	330nF	±10%	50	FA24X7R1H334KNU0
X7R	680nF	±10%	50	FA24X7R1H684KRU0
X7R	1uF	±10%	50	FA24X7R1H105KRU0
X7R	1.5uF	±10%	50	FA24X7R1H155KRU0
X7R	2.2uF	±10%	50	FA24X7R1H225KRU0
X7R	33nF	±10%	100	FA24X7R2A333KNU0
X7R	47nF	±10%	100	FA24X7R2A473KNU0
X7R	68nF	±10%	100	FA24X7R2A683KNU0
X7R	100nF	±10%	100	FA24X7R2A104KNU0
X7R	1nF	±10%	250	FA24X7R2E102KNU0
X7R	1.5nF	±10%	250	FA24X7R2E152KNU0
X7R	2.2nF	±10%	250	FA24X7R2E222KNU0
X7R	3.3nF	±10%	250	FA24X7R2E332KNU0
X7R	4.7nF	±10%	250	FA24X7R2E472KNU0
X7R	6.8nF	±10%	250	FA24X7R2E682KNU0
X7R	10nF	±10%	250	FA24X7R2E103KNU0
X7R	15nF	±10%	250	FA24X7R2E153KNU0
X7R	22nF	±10%	250	FA24X7R2E223KNU0
X7S	150nF	±10%	100	FA24X7S2A154KRU0
X7S	220nF	±10%	100	FA24X7S2A224KRU0
X7S	330nF	±10%	100	FA24X7S2A334KRU0
X7S	470nF	±10%	100	FA24X7S2A474KRU0
X7S	680nF	±10%	100	FA24X7S2A684KRU0
X7S	1uF	±10%	100	FA24X7S2A105KRU0
X7T	33nF	±10%	250	FA24X7T2E333KNU0
X7T	47nF	±10%	250	FA24X7T2E473KNU0
X7T	68nF	±10%	250	FA24X7T2E683KNU0
X7T	100nF	±10%	250	FA24X7T2E104KNU0

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

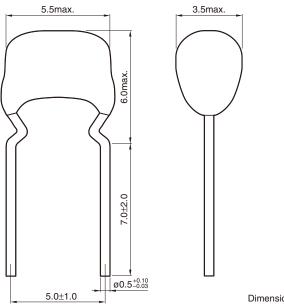
** The " 🗌 " of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

(13/30)

CAPACITORS

FA26 Type

SHAPE & DIMENSIONS





Dimensions in mm

FA26 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
C0G	47nF	±5%	50	FA26C0G1H473JNU0 **
C0G	68nF	±5%	50	FA26C0G1H683JNU0
C0G	100nF	±5%	50	FA26C0G1H104JNU0
C0G	15nF	±5%	100	FA26C0G2A153JNU0
C0G	22nF	±5%	100	FA26C0G2A223JNU0
C0G	33nF	±5%	100	FA26C0G2A333JNU0
C0G	15nF	±5%	250	FA26C0G2E153JNU0
C0G	22nF	±5%	250	FA26C0G2E223JNU0
C0G	6.8nF	±5%	450	FA26C0G2W682JNU0
C0G	8.2nF	±5%	450	FA26C0G2W822JNU0
C0G	10nF	±5%	450	FA26C0G2W103JNU0
C0G	15nF	±5%	450	FA26C0G2W153JNU0
COG	100pF	±5%	630	FA26C0G2J101JNU0
C0G	120pF	±5%	630	FA26C0G2J121JNU0
C0G	150pF	±5%	630	FA26C0G2J151JNU0
C0G	180pF	±5%	630	FA26C0G2J181JNU0
C0G	220pF	±5%	630	FA26C0G2J221JNU0
C0G	270pF	±5%	630	FA26C0G2J271JNU0
C0G	330pF	±5%	630	FA26C0G2J331JNU0
COG	390pF	±5%	630	FA26C0G2J391JNU0
COG	470pF	±5%	630	FA26C0G2J471JNU0
C0G	560pF	±5%	630	FA26C0G2J561JNU0
C0G	680pF	±5%	630	FA26C0G2J681JNU0
C0G	820pF	±5%	630	FA26C0G2J821JNU0
C0G	1nF	±5%	630	FA26C0G2J102JNU0
C0G	1.2nF	±5%	630	FA26C0G2J122JNU0
C0G	1.5nF	±5%	630	FA26C0G2J152JNU0
C0G	1.8nF	±5%	630	FA26C0G2J182JNU0
C0G	2.2nF	±5%	630	FA26C0G2J222JNU0
C0G	2.7nF	±5%	630	FA26C0G2J272JNU0
C0G	3.3nF	±5%	630	FA26C0G2J332JNU0
C0G	3.9nF	±5%	630	FA26C0G2J392JNU0
C0G	4.7nF	±5%	630	FA26C0G2J472JNU0
C0G	5.6nF	±5%	630	FA26C0G2J562JNU0
C0G	6.8nF	±5%	630	FA26C0G2J682JNU0
COG	8.2nF	±5%	630	FA26C0G2J822JNU0
COG	10nF	±5%	630	FA26C0G2J103JNU0

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

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

FA26 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 2 (TEMPERATURE STABLE)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
X7R	1uF	±10%	25	FA26X7R1E105KNU0 **
X7R	1.5uF	±10%	25	FA26X7R1E155KNU0
X7R	2.2uF	±10%	25	FA26X7R1E225KNU0
X7R	6.8uF	±10%	25	FA26X7R1E685KRU0
X7R	10uF	±10%	25	FA26X7R1E106KRU0
X7R	470nF	±10%	50	FA26X7R1H474KNU0
X7R	680nF	±10%	50	FA26X7R1H684KNU0
X7R	3.3uF	±10%	50	FA26X7R1H335KRU0
X7R	4.7uF	±10%	50	FA26X7R1H475KRU0
X7R	150nF	±10%	100	FA26X7R2A154KNU0
X7R	220nF	±10%	100	FA26X7R2A224KNU0
X7R	330nF	±10%	100	FA26X7R2A334KNU0
X7R	470nF	±10%	100	FA26X7R2A474KNU0
X7R	680nF	±10%	100	FA26X7R2A684KNU0
X7R	1uF	±10%	100	FA26X7R2A105KNU0
X7R	33nF	±10%	250	FA26X7R2E333KNU0
X7R	47nF	±10%	250	FA26X7R2E473KNU0
X7R	68nF	±10%	250	FA26X7R2E683KNU0
X7R	100nF	±10%	250	FA26X7R2E104KNU0
X7R	1nF	±10%	630	FA26X7R2J102KNU0
X7R	1.5nF	±10%	630	FA26X7R2J152KNU0
X7R	2.2nF	±10%	630	FA26X7R2J222KNU0
X7R	3.3nF	±10%	630	FA26X7R2J332KNU0
X7R	4.7nF	±10%	630	FA26X7R2J472KNU0
X7R	6.8nF	±10%	630	FA26X7R2J682KNU0
X7R	10nF	±10%	630	FA26X7R2J103KNU0
X7R	15nF	±10%	630	FA26X7R2J153KNU0
X7R	22nF	±10%	630	FA26X7R2J223KNU0
X7R	33nF	±10%	630	FA26X7R2J333KNU0
X7S	1.5uF	±10%	100	FA26X7S2A155KRU0
X7S	2.2uF	±10%	100	FA26X7S2A225KRU0
X7S	3.3uF	±10%	100	FA26X7S2A335KRU0
X7T	150nF	±10%	250	FA26X7T2E154KNU0
X7T	220nF	±10%	250	FA26X7T2E224KNU0

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

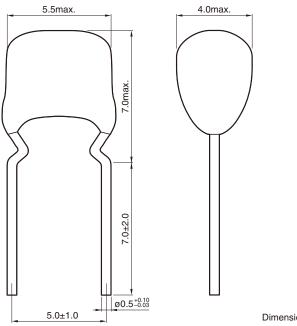
** The " 🗌 " of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

⊗TDK

CAPACITORS

FA20 Type

SHAPE & DIMENSIONS





Dimensions in mm

FA20 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
COG	47nF	±5%	100	FA20C0G2A473JNU0 **
C0G	68nF	±5%	100	FA20C0G2A683JNU0
COG	33nF	±5%	250	FA20C0G2E333JNU0
C0G	47nF	±5%	250	FA20C0G2E473JNU0
COG	22nF	±5%	450	FA20C0G2W223JNU0
C0G	33nF	±5%	450	FA20C0G2W333JNU0
COG	15nF	±5%	630	FA20C0G2J153JNU0
C0G	22nF	±5%	630	FA20C0G2J223JNU0
COG	33nF	±5%	630	FA20C0G2J333JNU0

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

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

CLASS 2 (TEMPERATURE STABLE)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
X7R	3.3uF	±10%	25	FA20X7R1E335KNU0 **
X7R	4.7uF	±10%	25	FA20X7R1E475KNU0
X7R	1uF	±10%	50	FA20X7R1H105KNU0
X7R	1.5uF	±10%	50	FA20X7R1H155KNU0
X7R	1.5uF	±10%	100	FA20X7R2A155KRU0
X7R	2.2uF	±10%	100	FA20X7R2A225KRU0
X7R	150nF	±10%	250	FA20X7R2E154KNU0
X7R	220nF	±10%	250	FA20X7R2E224KNU0
X7R	47nF	±10%	630	FA20X7R2J473KNU0
X7R	68nF	±10%	630	FA20X7R2J683KNU0
X7S	6.8uF	±10%	50	FA20X7S1H685KRU0
X7S	10uF	±10%	50	FA20X7S1H106KRU0
X7S	4.7uF	±10%	100	FA20X7S2A475KRU0
X7T	330nF	±10%	250	FA20X7T2E334KNU0

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

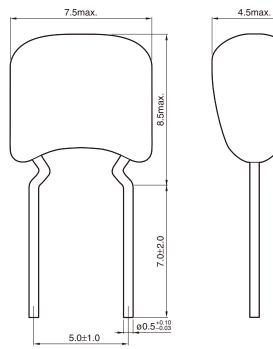
** The " 🗌 " of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

⊗TDK

CAPACITORS

FA22 Type

SHAPE & DIMENSIONS





Dimensions in mm

FA22 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
COG	150nF	±5%	50	FA22C0G1H154JNU0 **
C0G	220nF	±5%	50	FA22C0G1H224JNU0
COG	100nF	±5%	100	FA22C0G2A104JNU0
C0G	68nF	±5%	250	FA22C0G2E683JRU0
COG	100nF	±5%	250	FA22C0G2E104JRU0
C0G	47nF	±5%	450	FA22C0G2W473JNU0
COG	68nF	±5%	450	FA22C0G2W683JNU0
C0G	47nF	±5%	630	FA22C0G2J473JNU0

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

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

CLASS 2 (TEMPERATURE STABLE)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
X7R	10uF	±10%	25	FA22X7R1E106KNU0 .**
X7R	15uF	±20%	25	FA22X7R1E156MRU0
X7R	22uF	±20%	25	FA22X7R1E226MRU0
X7R	2.2uF	±10%	50	FA22X7R1H225KNU0
X7R	3.3uF	±10%	50	FA22X7R1H335KNU0
X7R	4.7uF	±10%	50	FA22X7R1H475KRU0
X7R	6.8uF	±10%	50	FA22X7R1H685KRU0
X7R	1.5uF	±10%	100	FA22X7R2A155KNU0
X7R	2.2uF	±10%	100	FA22X7R2A225KNU0
X7R	330nF	±10%	250	FA22X7R2E334KNU0
X7R	470nF	±10%	250	FA22X7R2E474KNU0
X7R	100nF	±10%	630	FA22X7R2J104KNU0
X7T	680nF	±10%	250	FA22X7T2E684KNU0
X7T	1uF	±10%	250	FA22X7T2E105KNU0

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

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

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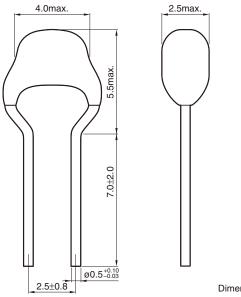
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⊗TDK

CAPACITORS

FA18 Type

SHAPE & DIMENSIONS





Dimensions in mm

FA18 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
COG	1.0pF	±0.25pF	50	FA18C0G1H010CNU0 **
C0G	1.5pF	±0.25pF	50	FA18C0G1H1R5CNU0
C0G	2.2pF	±0.25pF	50	FA18C0G1H2R2CNU0
C0G	3.3pF	±0.25pF	50	FA18C0G1H3R3CNU0
C0G	4.7pF	±0.25pF	50	FA18C0G1H4R7CNU0
C0G	6.8pF	±0.5pF	50	FA18C0G1H6R8DNU0
C0G	10pF	±0.5pF	50	FA18C0G1H100DNU0
C0G	15pF	±5%	50	FA18C0G1H150JNU0
C0G	22pF	±5%	50	FA18C0G1H220JNU0
C0G	33pF	±5%	50	FA18C0G1H330JNU0
C0G	47pF	±5%	50	FA18C0G1H470JNU0
C0G	68pF	±5%	50	FA18C0G1H680JNU0
C0G	100pF	±5%	50	FA18C0G1H101JNU0
C0G	120pF	±5%	50	FA18C0G1H121JNU0
C0G	150pF	±5%	50	FA18C0G1H151JNU0
C0G	180pF	±5%	50	FA18C0G1H181JNU0
C0G	220pF	±5%	50	FA18C0G1H221JNU0
C0G	270pF	±5%	50	FA18C0G1H271JNU0
C0G	330pF	±5%	50	FA18C0G1H331JNU0
C0G	390pF	±5%	50	FA18C0G1H391JNU0
COG	470pF	±5%	50	FA18C0G1H471JNU0
COG	560pF	±5%	50	FA18C0G1H561JNU0
C0G	680pF	±5%	50	FA18C0G1H681JNU0
C0G	820pF	±5%	50	FA18C0G1H821JNU0
C0G	1nF	±5%	50	FA18C0G1H102JNU0
COG	1.2nF	±5%	50	FA18C0G1H122JNU0
C0G	1.5nF	±5%	50	FA18C0G1H152JNU0
COG	1.8nF	±5%	50	FA18C0G1H182JNU0
C0G	2.2nF	±5%	50	FA18C0G1H222JNU0
COG	2.7nF	±5%	50	FA18C0G1H272JNU0
COG	3.3nF	±5%	50	FA18C0G1H332JNU0
COG	3.9nF	±5%	50	FA18C0G1H392JNU0
COG	4.7nF	±5%	50	FA18C0G1H472JNU0
COG	5.6nF	±5%	50	FA18C0G1H562JNU0
COG	6.8nF	±5%	50	FA18C0G1H682JNU0
COG	8.2nF	±5%	50	FA18C0G1H822JNU0
COG	10nF	±5%	50	FA18C0G1H103JNU0
COG	1.0pF	±0.25pF	100	FA18C0G2A010CNU0
COG	1.5pF	±0.25pF	100	FA18C0G2A1R5CNU0
COG	2.2pF	±0.25pF	100	FA18C0G2A2R2CNU0
COG	3.3pF	±0.25pF	100	FA18C0G2A3R3CNU0
COG	4.7pF	±0.25pF	100	FA18C0G2A4R7CNU0
COG	6.8pF	±0.5pF	100	FA18C0G2A6R8DNU0
COG	10pF	±0.5pF	100	FA18C0G2A0R8DN00
COG	15pF	±0.001 ±5%	100	FA18C0G2A150JNU0
COG	22pF	±5%	100	FA18C0G2A220JNU0
COG	33pF	±5%	100	FA18C0G2A320JNU0
COG	47pF	±5%	100	FA18C0G2A470JNU0
COG	68pF	±5% ±5%	100	FA18C0G2A470JN00
COG	100pF	±5% ±5%	100	FA18C0G2A080JN00

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

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

FA18 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
COG	120pF	±5%	100	FA18C0G2A121JNU0 **
C0G	150pF	±5%	100	FA18C0G2A151JNU0
C0G	180pF	±5%	100	FA18C0G2A181JNU0
C0G	220pF	±5%	100	FA18C0G2A221JNU0
COG	270pF	±5%	100	FA18C0G2A271JNU0
C0G	330pF	±5%	100	FA18C0G2A331JNU0
COG	390pF	±5%	100	FA18C0G2A391JNU0
C0G	470pF	±5%	100	FA18C0G2A471JNU0
COG	560pF	±5%	100	FA18C0G2A561JNU0
C0G	680pF	±5%	100	FA18C0G2A681JNU0
COG	820pF	±5%	100	FA18C0G2A821JNU0
C0G	1nF	±5%	100	FA18C0G2A102JNU0
C0G	1.2nF	±5%	100	FA18C0G2A122JNU0
C0G	1.5nF	±5%	100	FA18C0G2A152JNU0
C0G	1.8nF	±5%	100	FA18C0G2A182JNU0
C0G	2.2nF	±5%	100	FA18C0G2A222JNU0
C0G	2.7nF	±5%	100	FA18C0G2A272JNU0
C0G	3.3nF	±5%	100	FA18C0G2A332JNU0

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

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

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FA18 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 2 (TEMPERATURE STABLE)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
X7R	150nF	±10%	25	FA18X7R1E154KNU0 **
X7R	680nF	±10%	25	FA18X7R1E684KRU0
X7R	1uF	±10%	25	FA18X7R1E105KRU0
X7R	1nF	±10%	50	FA18X7R1H102KNU0
X7R	1.5nF	±10%	50	FA18X7R1H152KNU0
X7R	2.2nF	±10%	50	FA18X7R1H222KNU0
X7R	3.3nF	±10%	50	FA18X7R1H332KNU0
X7R	4.7nF	±10%	50	FA18X7R1H472KNU0
X7R	6.8nF	±10%	50	FA18X7R1H682KNU0
X7R	10nF	±10%	50	FA18X7R1H103KNU0
X7R	15nF	±10%	50	FA18X7R1H153KNU0
X7R	22nF	±10%	50	FA18X7R1H223KNU0
X7R	33nF	±10%	50	FA18X7R1H333KNU0
X7R	47nF	±10%	50	FA18X7R1H473KNU0
X7R	68nF	±10%	50	FA18X7R1H683KNU0
X7R	100nF	±10%	50	FA18X7R1H104KNU0
X7R	150nF	±10%	50	FA18X7R1H154KRU0
X7R	220nF	±10%	50	FA18X7R1H224KRU0
X7R	330nF	±10%	50	FA18X7R1H334KRU0
X7R	470nF	±10%	50	FA18X7R1H474KRU0
X7R	1nF	±10%	100	FA18X7R2A102KNU0
X7R	1.5nF	±10%	100	FA18X7R2A152KNU0
X7R	2.2nF	±10%	100	FA18X7R2A222KNU0
X7R	3.3nF	±10%	100	FA18X7R2A332KNU0
X7R	4.7nF	±10%	100	FA18X7R2A472KNU0
X7R	6.8nF	±10%	100	FA18X7R2A682KNU0
X7R	10nF	±10%	100	FA18X7R2A103KNU0
X7R	15nF	±10%	100	FA18X7R2A153KNU0
X7R	22nF	±10%	100	FA18X7R2A223KNU0
X7S	33nF	±10%	100	FA18X7S2A333KRU0
X7S	47nF	±10%	100	FA18X7S2A473KRU0
X7S	68nF	±10%	100	FA18X7S2A683KRU0
X7S	100nF	±10%	100	FA18X7S2A104KRU0

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

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

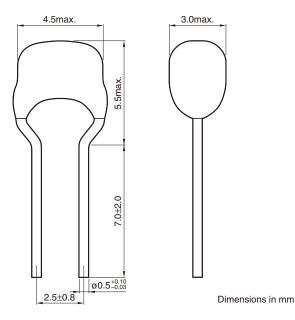
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⊗TDK

CAPACITORS

FA14 Type

SHAPE & DIMENSIONS





FA14 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
C0G	15nF	±5%	50	FA14C0G1H153JNU0
C0G	22nF	±5%	50	FA14C0G1H223JNU0
COG	33nF	±5%	50	FA14C0G1H333JNU0
C0G	3.9nF	±5%	100	FA14C0G2A392JNU0
COG	4.7nF	±5%	100	FA14C0G2A472JNU0
C0G	5.6nF	±5%	100	FA14C0G2A562JNU0
COG	6.8nF	±5%	100	FA14C0G2A682JNU0
C0G	8.2nF	±5%	100	FA14C0G2A822JNU0
C0G	10nF	±5%	100	FA14C0G2A103JNU0

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

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

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 2 (TEMPERATURE STABLE)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
X7R	470nF	±10%	25	FA14X7R1E474KNU0 **
X7R	3.3uF	±10%	25	FA14X7R1E335KRU0
X7R	4.7uF	±10%	25	FA14X7R1E475KRU0
X7R	150nF	±10%	50	FA14X7R1H154KNU0
X7R	220nF	±10%	50	FA14X7R1H224KNU0
X7R	330nF	±10%	50	FA14X7R1H334KNU0
X7R	680nF	±10%	50	FA14X7R1H684KRU0
X7R	1uF	±10%	50	FA14X7R1H105KRU0
X7R	1.5uF	±10%	50	FA14X7R1H155KRU0
X7R	2.2uF	±10%	50	FA14X7R1H225KRU0
X7R	33nF	±10%	100	FA14X7R2A333KNU0
X7R	47nF	±10%	100	FA14X7R2A473KNU0
X7R	68nF	±10%	100	FA14X7R2A683KNU0
X7R	100nF	±10%	100	FA14X7R2A104KNU0
X7S	150nF	±10%	100	FA14X7S2A154KRU0
X7S	220nF	±10%	100	FA14X7S2A224KRU0
X7S	330nF	±10%	100	FA14X7S2A334KRU0
X7S	470nF	±10%	100	FA14X7S2A474KRU0
X7S	680nF	±10%	100	FA14X7S2A684KRU0
X7S	1uF	±10%	100	FA14X7S2A105KRU0

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

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

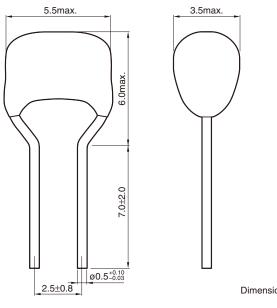
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CAPACITORS

FA16 Type

SHAPE & DIMENSIONS





Dimensions in mm

FA16 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
C0G	47nF	±5%	50	FA16C0G1H473JNU0 **
C0G	68nF	±5%	50	FA16C0G1H683JNU0
COG	100nF	±5%	50	FA16C0G1H104JNU0
C0G	15nF	±5%	100	FA16C0G2A153JNU0
C0G	22nF	±5%	100	FA16C0G2A223JNU0
C0G	33nF	±5%	100	FA16C0G2A333JNU0

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

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

CHARACTERISTICS SPECIFICATION TABLE

CLASS 2 (TEMPERATURE STABLE)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
X7R	1uF	±10%	25	FA16X7R1E105KNU0 **
X7R	1.5uF	±10%	25	FA16X7R1E155KNU0
X7R	2.2uF	±10%	25	FA16X7R1E225KNU0
X7R	6.8uF	±10%	25	FA16X7R1E685KRU0
X7R	10uF	±10%	25	FA16X7R1E106KRU0
X7R	470nF	±10%	50	FA16X7R1H474KNU0
X7R	680nF	±10%	50	FA16X7R1H684KNU0
X7R	3.3uF	±10%	50	FA16X7R1H335KRU0
X7R	4.7uF	±10%	50	FA16X7R1H475KRU0
X7R	150nF	±10%	100	FA16X7R2A154KNU0
X7R	220nF	±10%	100	FA16X7R2A224KNU0
X7R	330nF	±10%	100	FA16X7R2A334KNU0
X7R	470nF	±10%	100	FA16X7R2A474KNU0
X7R	680nF	±10%	100	FA16X7R2A684KNU0
X7R	1uF	±10%	100	FA16X7R2A105KNU0
X7S	1.5uF	±10%	100	FA16X7S2A155KRU0
X7S	2.2uF	±10%	100	FA16X7S2A225KRU0
X7S	3.3uF	±10%	100	FA16X7S2A335KRU0

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

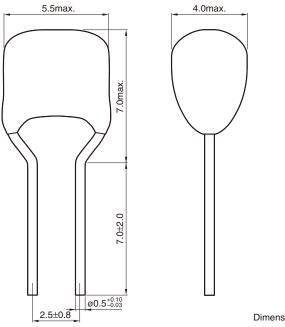
** The " \Box " of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

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CAPACITORS

FA11 Type

SHAPE & DIMENSIONS





Dimensions in mm

FA11 Type

ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

CLASS 1 (TEMPERATURE COMPENSATION)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
C0G	47nF	±5%	100	FA11C0G2A473JNU0 **
COG	68nF	±5%	100	FA11C0G2A683JNU0

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

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

CLASS 2 (TEMPERATURE STABLE)

Temperature characteristics	Capacitance	Tolerance	Rated voltage Edc (V)	Part No.*
X7R	3.3uF	±10%	25	FA11X7R1E335KNU0 **
X7R	4.7uF	±10%	25	FA11X7R1E475KNU0
X7R	1uF	±10%	50	FA11X7R1H105KNU0
X7R	1.5uF	±10%	50	FA11X7R1H155KNU0
X7R	1.5uF	±10%	100	FA11X7R2A155KRU0
X7R	2.2uF	±10%	100	FA11X7R2A225KRU0
X7S	6.8uF	±10%	50	FA11X7S1H685KRU0
X7S	10uF	±10%	50	FA11X7S1H106KRU0
X7S	4.7uF	±10%	100	FA11X7S2A475KRU0

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

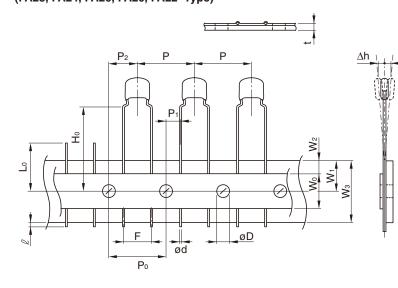
** The " 🗌 " of the Part Number contains the packaging symbol, 0 (Bulk packaging) or 6 (Taping packaging).

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Packaging Style

TAPING DIMENSIONS

□Lead pitch 5.0 mm (FA28, FA24, FA26, FA20, FA22 Type)



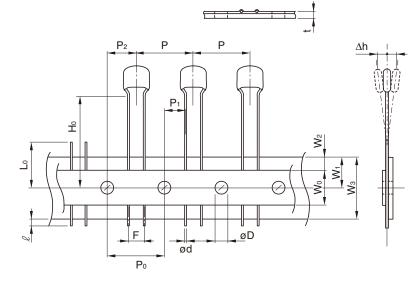
Symbol	Dimensions (mm)
Р	12.7±1.0
Po*1	12.7±0.3
P1	3.85±0.7
P2	6.35±1.3
Wo	12.0±1.0
W1	9.0±0.5
W2*2	3.0max.
Wз	18.0+1.0, -0.5
Ho	16.0±0.5
l t	1.0max.
t	0.6±0.2
Lo*3	11.0max.
F	5.0+0.8, -0.2
ød	ø0.5+0.1, -0.03
øD	ø4.0±0.2
Δh	0±2

 *1 Accumulated pitch tolerance shall be $\pm 2\text{mm}$ 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.

Lead pitch 2.5 mm (FA18, FA14, FA16, FA11 Type)

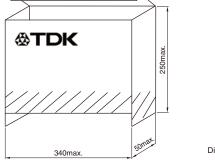


Symbol	Dimensions (mm)
Р	12.7±1.0
Po*1	12.7±0.3
P1	5.1±0.7
P2	6.35±1.3
Wo	12.0±1.0
W1	9.0±0.5
W2*2	3.0max.
Wз	18.0+1.0, -0.5
Ho	16.0±0.5
l t	1.0max.
t	0.6±0.2
Lo*3	11.0max.
F	2.5+0.5, -0.2
ød	ø0.5+0.1, -0.03
øD	ø4.0±0.2
Δh	0±2

*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.

AMMO PACK INNER BOX SIZE



Dimensions in mm