

Ceramic Disc Capacitors Class 1 and 2, 1 kV_{DC}, 2 kV_{DC}, 3 kV_{DC} and 6 kV_{DC}, General Purpose



Capacitors with 5 mm (0.20"), 7.5 mm (0.30") and
10 mm (0.40") lead spacing

QUICK REFERENCE DATA		
DESCRIPTION	CLASS 1 (SL0, S3N)	CLASS 2 (Y5P, X7R, Z5U, Y5V, X5F)
Voltage (V _{DC})	1000, 2000, 3000, 6000	
Min. Capacitance (pF)	10	100
Max. Capacitance (pF)	220	33 000
Mounting	Through hole	

MARKING

Straight and kinked leaded versions are gold coloured
Marking indicates capacitance value and tolerance in
accordance with "EIA 198" and voltage:

OPERATING TEMPERATURE RANGE

Class 1 SL0, S3N, - 55 °C to + 125 °C

Class 2, X7R - 55 °C to + 125 °C

Class 2, Y5P, Z5U, Y5V, - 30 °C to + 85 °C

Class 2, X5F - 55 °C to + 85 °C

TEMPERATURE COEFFICIENTS

Class 1 SL0, S3N

Class 2 X7R, Y5P, Z5U, Y5V, X5F

SECTIONAL SPECIFICATIONS

Class 1, IEC 60 384-8,

Class 2, IEC 60 384-9,

EIA 198

CLIMATIC CATEGORY

Class 1, SL0, 55/125/21

Class 2, X7R, 55/125/21

Class 2, Y5P, Z5U, Y5V, 30/85/21

Class 2, X5F, 55/85/21

FEATURES

- Low losses
- High stability
- High capacitance in small size
- Kinked (preferred) or straight leads
- Compliant to RoHS directive 2002/95/EC



RoHS
COMPLIANT

APPLICATIONS

- DC high voltage
- Pulse high voltage
- SMPS
- HV power supply
- HF ballast

DESIGN

The capacitors consist of a ceramic disc both sides of which are silver-plated. Connection leads are made of tinned copper having a diameter of 0.6 mm or 0.8 mm up to 3 kV and 0.8 mm for 6 kV.

The capacitors may be supplied with kinked or straight leads with a lead spacing of 5 mm (0.20"), 7.5 mm (0.30") or 10 mm (0.40") and a lead length from 4 mm to 30 mm. The standard tolerance on capacitance is 5 % or 10 % for class 1 capacitors and ± 10 % or ± 20 % for class 2 capacitors. Encapsulation is made of gold-colored epoxy-resin, flammable resistant in accordance with "UL 94 V-0"

CAPACITANCE RANGE

Class 1, at 1 MHz, 1.2 V_{RMS}; 10 pF to 220 pF

1 kHz, 1 V_{RMS} ± 0.2 V_{RMS} for capacitance values higher than 1000 pF

Class 2, at 1 kHz, 1 V_{RMS} ± 0.2 V_{RMS}; 100 pF to 33 000 pF

RATED DC VOLTAGE

1 kV; 2 kV; 3 kV; 6 kV

DIELECTRIC STRENGTH

200 % of rated voltage

INSULATION RESISTANCE AT 500 V_{DC}

≥ 10 000 MΩ

TOLERANCE ON CAPACITANCE

± 5 %; ± 10 %; ± 20 %; + 80/- 20 %

Other tolerances available on request

DISSIPATION FACTOR

Class 1, C ≤ 30 pF; ≤ 20 x (10/C + 0.7) x 10⁻⁴ max.

Class 1, C > 30 pF; ≤ 0.2 %

Class 2, ≤ 3.0 %

ORDERING INFORMATION 1 kV _{DC} , STRAIGHT								
C (pF)	TOL. (%)	D _{MAX.} (mm)	LEAD SPACING (mm)	SH ⁽¹⁾ (mm)	CLEAR TEXT CODE			
					13 TH DIGIT: T = REEL; U = AMMO; 3 = BULK 16 TH DIGIT: R = RoHS COMPLIANT			
CLASS 1 SLO								
10	± 5	6.5	5.0	4.0	S100J25SL0N6.J5.			
	± 10				S100K25SL0N6.J5.			
12	± 5				S120J25SL0N6.J5.			
	± 10				S120K25SL0N6.J5.			
15	± 5				S150J25SL0N6.J5.			
	± 10				S150K25SL0N6.J5.			
18	± 5				S180J25SL0N6.J5.			
	± 10				S180K25SL0N6.J5.			
22	± 5				S220J25SL0N6.J5.			
	± 10				S220K25SL0N6.J5.			
27	± 5				S270J25SL0N6.J5.			
	± 10				S270K25SL0N6.J5.			
33	± 5				S330J25SL0N6.J5.			
	± 10				S330K25SL0N6.J5.			
39	± 5				S390J25SL0N6.J5.			
	± 10				S390K25SL0N6.J5.			
47	± 5				S470J25SL0N6.J5.			
	± 10				S470K25SL0N6.J5.			
56	± 5	7.5	5.0	4.0	S560J29SL0N6.J5.			
	± 10				S560K29SL0N6.J5.			
68	± 5				S680J29SL0N6.J5.			
	± 10				S680K29SL0N6.J5.			
82	± 5				S820J29SL0N6.J5.			
	± 10				S820K29SL0N6.J5.			
100	± 5				S101J29SL0N6.J5.			
	± 10				S101K29SL0N6.J5.			
120	± 5				S121J33SL0N6.J5.			
	± 10				S121K33SL0N6.J5.			
150	± 10				8.5	5.0	4.0	S151K33SL0N6.J5.
220								S221K39SL0N6.J5.
CLASS 2 X7R								
100	± 10	6.5	5.0	4.0	S101K25X7RN6.J5.			
150					S151K25X7RN6.J5.			
220					S221K25X7RN6.J5.			
330					S331K25X7RN6.J5.			
470					S471K29X7RN6.J5.			
680					S681K29X7RN6.J5.			
1000		8.5	7.5	4.8	S102K33X7RN6.J5.			
1500		10			S152K39X7RN6.J5.			
2200		11			S222K43X7RN6.J5.			
3 300		12	S332K47X7RN6.J7.					
4 700		15	S472K59X7RN6.J7.					
CLASS 2 Y5P								
100	± 10	6.5	5.0	4.0	S101K25Y5PN6.J5.			
150					S151K25Y5PN6.J5.			
220					S221K25Y5PN6.J5.			
330					S331K25Y5PN6.J5.			
470					S471K25Y5PN6.J5.			
680					S681K29Y5PN6.J5.			
1000		7.5	8.5	S102K29Y5PN6.J5.				
1500		8.5		S152K33Y5PN6.J5.				



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Vishay BCcomponents

ORDERING INFORMATION 1 kV_{DC}, STRAIGHT					
C (pF)	TOL. (%)	D _{MAX.} (mm)	LEAD SPACING (mm)	SH ⁽¹⁾ (mm)	CLEAR TEXT CODE
					13 TH DIGIT: T = REEL; U = AMMO; 3 = BULK 16 TH DIGIT: R = RoHS COMPLIANT
CLASS 2 Y5P					
2200	± 10	10	5.0	4.0	S222K39Y5PN6.J5.
3300		11			S332K43Y5PN6.J5.
4700		13.5	7.5	4.8	S472K53Y5PN63J7.
6800		15			S682K59Y5PN63J7.
10 000		19			10
CLASS 2 Z5U					
1000	± 20	6.5	5.0	4.0	S102M25Z5UN6.J5.
1500					S152M29Z5UN6.J5.
2200					S222M29Z5UN6.J5.
3300					S332M33Z5UN6.J5.
4700		S472M39Z5UN6.J5.			
6800		11	S682M43Z5UN6.J5.		
10 000		12	7.5	4.8	S103M47Z5UN63J7.
15 000		15			S153M59Z5UN63J7.
22 000		19	10	S223M75Z5UN83J0.	
CLASS 2 Y5V					
1000	+ 80/- 20	6.5	5.0	4.0	S102Z25Y5VN6.J5.
1500					S152Z25Y5VN6.J5.
2200					S222Z29Y5VN6.J5.
3300					S332Z29Y5VN6.J5.
4700		8.5	S472Z33Y5VN6.J5.		
6800		10	S682Z39Y5VN6.J5.		
10 000		11	S103Z43Y5VN6.J5.		
15 000		13.5	7.5	4.8	S153Z53Y5VN6.J7.
22 000		15			S223Z59Y5VN6.J7.
33 000		19	10	S333Z75Y5VN8.J0.	

ORDERING INFORMATION 1 kV_{DC}, KINKED					
C (pF)	TOL. (%)	D _{MAX.} (mm)	LEAD SPACING (mm)	SH ⁽²⁾ (mm)	CLEAR TEXT CODE
					13 TH DIGIT: T = REEL; U = AMMO; 3 = BULK 16 TH DIGIT: R = RoHS COMPLIANT
CLASS 2 X5F					
100	± 10	6.5	5.0	4.0	S101K25X5FN6.J5R
220					S221K25X5FN6.J5R
270					S271K25X5FN6.J5R
330					S331K25X5FN6.J5R
390					S391K25X5FN6.J5R
470					S471K25X5FN6.J5R
680					S681K29X5FN6.J5R
820		7.5	S821K29X5FN6.J5R		
1000		11	S102K29X5FN6.J5R		
2200		13.5	7.5	4.8	S222K43X5FN6.J5R
3300		16			S332K53X5FN6.J7R
4700					S472K63X5FN63J7R

Notes

- ⁽¹⁾ SH = seated height
- Maximum thickness 4.0 mm
- Lead style codes refer to inward kinked leads. Other styles available on request

ORDERING INFORMATION 2 kV _{DC} , KINKED									
C (pF)	TOL. (%)	D _{MAX.} (mm)	LEAD SPACING (mm)	SH ⁽¹⁾ (mm)	CLEAR TEXT CODE				
					13 TH DIGIT: T = REEL; U = AMMO; 3 = BULK 16 TH DIGIT: R = RoHS COMPLIANT				
CLASS 1 SLO									
10	± 5	6.5	5.0	4.0	S100J25SLOP6.K5.				
	± 10				S100K25SLOP6.K5.				
12	± 5				S120J25SLOP6.K5.				
	± 10				S120K25SLOP6.K5.				
15	± 5				S150J25SLOP6.K5.				
	± 10				S150K25SLOP6.K5.				
18	± 5				S180J25SLOP6.K5.				
	± 10				S180K25SLOP6.K5.				
22	± 5				S220J25SLOP6.K5.				
	± 10				S220K25SLOP6.K5.				
27	± 5				S270J25SLOP6.K5.				
	± 10				S270K25SLOP6.K5.				
33	± 5	7.5	5.0	4.0	S330J29SLOP6.K5.				
	± 10				S330K29SLOP6.K5.				
39	± 5				S390J29SLOP6.K5.				
	± 10				S390K29SLOP6.K5.				
47	± 5				S470J29SLOP6.K5.				
	± 10				S470K29SLOP6.K5.				
56	± 5				S560J29SLOP6.K5.				
	± 10				S560K29SLOP6.K5.				
68	± 5				8.5	5.0	4.0	S680J33SLOP6.K5.	
	± 10							S680K33SLOP6.K5.	
82	± 5							S820J33SLOP6.K5.	
	± 10							S820K33SLOP6.K5.	
100	± 5	10	5.0	4.0				S101J39SLOP6.K5.	
	± 10							S101K39SLOP6.K5.	
120	± 5				S121J39SLOP6.K5.				
	± 10				S121K39SLOP6.K5.				
150	± 5				11	5.0	4.0	S151K43SLOP6.K5.	
	± 10								
CLASS 2 X7R									
100	± 10	6.5	5.0	4.0	S101K25X7RP6.K5.				
150					S151K25X7RP6.K5.				
220					S221K25X7RP6.K5.				
330					S331K25X7RP6.K5.				
470					S471K29X7RP6.K5.				
680					S681K33X7RP6.K5.				
1000		7.5	5.0	4.0	S102K39X7RP6.K5.				
1500					S152K43X7RP6.K5.				
2200					13.5	7.5	4.8	S222K53X7RP6.K7.	
3300								S332K59X7RP6.K7.	
CLASS 2 Y5P									
100					± 10	6.5	5.0	4.0	S101K25Y5PP6.K5.
150	S151K25Y5PP6.K5.								
220	S221K25Y5PP6.K5.								
330	S331K25Y5PP6.K5.								
470	S471K29Y5PP6.K5.								
680	S681K29Y5PP6.K5.								
1000	7.5	5.0	4.0	S102K33Y5PP6.K5.					
1500				S152K39Y5PP6.K5.					
2200				11		7.5	4.8	S222K43Y5PP6.K5.	
3300								S332K53Y5PP63K7.	
4700				17.5		S472K69Y5PP63K7.			



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ORDERING INFORMATION 2 kV_{DC}, KINKED					
C (pF)	TOL. (%)	D _{MAX.} (mm)	LEAD SPACING (mm)	SH ⁽¹⁾ (mm)	CLEAR TEXT CODE
					13 TH DIGIT: T = REEL; U = AMMO; 3 = BULK 16 TH DIGIT: R = RoHS COMPLIANT
CLASS 2 Z5U					
1000	± 20	7.5	5.0	4.0	S102M29Z5UP6.K5.
1500					S152M29Z5UP6.K5.
2200					S222M33Z5UP6.K5.
3300		11	7.5	4.8	S332M43Z5UP6.K5.
4700		12			S472M47Z5UP63K7.
6800		13.5			S682M53Z5UP63K7.
10 000		17.5			S103M69Z5UP63K7.
CLASS 2 Y5V					
1000	+ 80/- 20	7.5	5.0	4.0	S102Z29Y5VP6.K5.
1500					S152Z29Y5VP6.K5.
2200					S222Z33Y5VP6.K5.
3300		10.5	7.5	4.8	S322Z39Y5VP6.K5.
4700		11			S472Z43Y5VP6.K5.
6800		12			S682Z47Y5VP6.K7.
10 000		15			S103Z59Y5VP6.K7.
CLASS 2 X5F					
1 00	± 10	6.5	5.0	4.0	S101K25X5FP6.K5R
220					S221K25X5FP6.K5R
330					7.5
470		8	7.5	4.8	S471K31X5FP6.K5R
680		10			S681K39X5FP6.K5R
1000		11			S102K43X5FP6.K5R
2200		15			S222K59X5FP6.K7R
3300	16.5	S332K65X5FP63K7R			

Notes

⁽¹⁾ SH = seated height

- Maximum thickness 4.0 mm
- Lead style codes refer to inward kinked leads. Other styles available on request

ORDERING INFORMATION CLASS 3 kV_{DC}, KINKED					
C (pF)	TOL. (%)	D _{MAX.} (mm)	LEAD SPACING (mm)	SH ⁽¹⁾ (mm)	CLEAR TEXT CODE
					13 TH DIGIT: T = REEL; U = AMMO; 3 = BULK 16 TH DIGIT: R = RoHS COMPLIANT
CLASS 1 SL					
10	± 10	8.5	7.5	4.0	S100K33SL0R63K7.
15					S150K33SL0R63K7.
22					S220K33SL0R63K7.
33					S330K33SL0R63K7.
47					S470K33SL0R63K7.
68	10	S680K39SL0R63K7.			
CLASS 2 X7R					
100	± 10	8.5	7.5	4.0	S101K33X7RR63K7.
150					S151K33X7RR63K7.
220					S221K33X7RR63K7.
330					S331K33X7RR63K7.
470					S471K33X7RR63K7.
680		10	4.8	S681K39X7RR63K7.	
1000		11		S102K43X7RR63K7.	
1500	13.5	S152K53X7RR63K7.			
2200	17.5	S222K59X7RR83K7.			

ORDERING INFORMATION CLASS 3 kV _{DC} , KINKED					
C (pF)	TOL. (%)	D _{MAX.} (mm)	LEAD SPACING (mm)	SH ⁽¹⁾ (mm)	CLEAR TEXT CODE
					13 TH DIGIT: T = REEL; U = AMMO; 3 = BULK 16 TH DIGIT: R = RoHS COMPLIANT
CLASS 2 Y5P					
100	± 10	8.5	7.5	4.0	S101K33Y5PR63K7.
150					S151K33Y5PR63K7.
220					S221K33Y5PR63K7.
330					S331K33Y5PR63K7.
470					S471K33Y5PR63K7.
680					S681K39Y5PR63K7.
1000		10	4.8	S102K43Y5PR63K7.	
1500		11		S152K47Y5PR63K7.	
2200		12		S222K59Y5PR63K7.	
3 300		15		S332K75Y5PR83K0.	
		19	10		
CLASS 2 Z5U					
470	± 20	8.5	7.5	4.0	S471M33Z5UR63K7.
680					S681M33Z5UR63K7.
1000					S102M33Z5UR63K7.
1500		10	4.8	S152M39Z5UR63K7.	
2200		11		S222M43Z5UR63K7.	
3300		13.5		S332M53Z5UR63K7.	
4700	17.5	S472M69Z5UR83K7.			
CLASS 2 Y5V					
1000	+ 80/- 20	8.5	7.5	4.0	S102Z33Y5VR63K7.
1500					S152Z33Y5VR63K7.
2200					S222Z39Y5VR63K7.
3300		10	4.8	S322Z43Y5VR63K7.	
4700		11		S472Z47Y5VR63K7.	
6800		12		S682Z59Y5VR63K7.	
		15			

Notes

- ⁽¹⁾ SH = seated height
- Maximum thickness 4.0 mm
- Lead style codes refer to inward kinked leads. Other styles available on request

ORDERING INFORMATION CLASS 6 kV _{DC} , KINKED					
C (pF)	TOL. (%)	D _{MAX.} (mm)	LEAD SPACING (mm)	SH ⁽¹⁾ (mm)	CLEAR TEXT CODE
					13 TH DIGIT: T = REEL; U = AMMO; 3 = BULK 16 TH DIGIT: R = RoHS COMPLIANT
CLASS 1 SL					
10	± 20	10	10	3.0	S100M39SL0U83L0.
15					S150M43SL0U83L0.
22		S220M43SL0U83L0.			
33		13.5			S330M53SL0U83L0.
CLASS 1 S3N					
47	± 20	11	10	3.0	S470M43S3NU83L0.
68		13.5			S680M53S3NU83L0.
100		15			S101M59S3NU83L0.
150		15			S151M59S3NU83L0.
CLASS 2 Z5U					
220	± 20	10	10	3.0	S221M39Z5UU83L0.
330		11			S331M43Z5UU83L0.
470		12			S471M47Z5UU83L0.

DIMENSIONS OF TAPE			
SYMBOL	PARAMETER	DIMENSIONS (mm)	
		NOMINAL	TOLERANCE
D	Body diameter	11.0 maximum	-
d	Lead diameter	0.6	± 0.05
P	Pitch between capacitors	12.7	± 1.0
P ₀ ⁽¹⁾	Feed-hole pitch	12.7	± 0.3
ΔP	Plane deviation	1.0 maximum	-
P ₁ ⁽²⁾	Feed-hole center to lead center	3.85	± 0.7
P ₂ ⁽²⁾	Feed-hole center to component center	6.35	± 1.3
F	Lead spacing	5.0	0.6 - 0.4
Δh	Component alignment	0	± 1.0
W	Tape width	18.0	1.0 - 0.5
W ₀	Hold-down tape width	5.0 minimum	-
W ₁	Hole position	9.0	0.75 - 0.5
W ₂	Hold-down tape margin	3.0 maximum	-
H ₀	Height to seating plane	16.0	± 0.5
H ₁	Maximum component height	32.0	-
e	Lead end protrusion	1.0 maximum	-
L	Maximum length of snapped lead	11.0	-
D ₀	Feed-hole diameter	4.0	± 0.2
t	Total tape thickness	0.9 maximum	-
t ₁	Maximum thickness of tape and wires	1.5 maximum	-

Notes

(1) Cumulative pitch error: $\pm \leq 1 \text{ mm}/20 \text{ pitches}$

(2) Obliquity maximum 3°

REEL AND TAPE DATA in millimeters





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Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.

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

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

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

«FORSTAR» (основан в 1998 г.)

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

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



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