FS High capacitance capactior series (≥1uF)

Features

- Realize high capacitance in small sizes.
- Capacitor with lead-free termination (pure Tin).
- RoHS compliant.
- HALOGEM compliant.
- Surface mount suited for wave and reflow soldering
- High reliability and no polarity.
- Excellent in high frequency characteristic.

Applications

- Digital circuit coupling or decoupling applications.
- For high frequency and high-density type power suppliers.
- For bypassing.
- Ideal for smoothing circuits.
- Suitable for DC-DC converter, personal computer and peripherals, telecommunication and general electronic equipment

How to Order

FS	31	B	226	K	100	E	P	G
PDC Family	**Size**	**Dielectric**	**Capacitance**	**Tolerance**	**Rated voltage**	**Packaging**	**Thickness**	**Control Code**
Table1	Table2	Table3	*Below Ref.	Table4	Table5	Table6	Table7	Table8

* Two significant digits followed by no. of zeros. And R is in place of decimal point.
eg.: R47=0.47pF , 0R5=0.5pF, 101=10x10^{1}=100pF, 104=10x10^{4} =100nF.
Reference document with ref order detail.

General Electrical Data

Dielectric	X7R	X5R	Y5V
Size	0603, 0805, 1206, 1210, 1812, 1825, 2220, 2225	0402, 0603, 0805, 1206, 1210	0402, 0603, 0805, 1206, 1210, 1812
Capacitance range*	1μF to 10μF	1μF to 100μF	1μF to 100μF
Capacitance tolerance**	K (±10%), M (±20%)		Z (-20/+80%)
Rated voltage (WVDC)	6.3V, 10V, 16V, 25V, 50V, 100V, 250V, 500V, 630V	6.3V, 10V, 16V, 25V, 50V	6.3V, 10V, 16V, 25V, 35V, 50V, 100V
Tan δ*	Note 1		
Insulation resistance at Ur	RxC ≥ 500 ΩxF		
Operating temperature	-55 to +125°C	-55 to +85°C	-25 to +85°C
Capacitance characteristic	±15%		+30/-80%
Termination	Ni/Sn (lead-free termination)		

* Measured at 1.0±0.2Vrms, 1.0kHz±10% for C≤10μF; 0.5±0.2Vrms, 120Hz±20% for C>10μF, 30~70% related humidity, 25°C ambient temperature for X7R, X5R and at 20°C for Y5V.
** Preconditioning for Class II MLCC: Perform a heat treatment at 150±10°C for 1 hour, then leave in ambient condition for 24±2 hours before measurement.

Capacitance Range

X7R/X5R

Rated vol.	X7R	Exception of D.F.	
≥50V	≤2.5%	≤3.0%	0603≥0.047μF;0805≥0.18μF; 1206≥0.47μF
25V	≤3.5%	≤5.0%	0805≥1μF;1210≥10μF
		≤7.0%	0603≥0.33μF; 1206≥4.7μF
		≤10.0%	0402≥0.10μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥6.8μF
16V	≤3.5%	≤5.0%	0402≥0.033μF; 0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF
		≤10.0%	0603≥0.68μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF
10V	≤5.0%	≤10.0%	0402≥0.33μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF
		≤15.0%	0402≥1μF
6.3V	≤10.0%	≤15.0%	0603≥10μF; 0805≥4.7μF; 1210≥100μF
		≤20.0%	0402≥2.2μF

Y5V

Rated vol.	D.F.	Exception of D.F.	
≥50V	≤5.0%	≤7.0%	0603≥0.1μF; 0805≥0.47μF
35V	≤7.0%	---	--
25V	≤5.0%	≤7.0%	0402≥0.047μF; 0603≥0.1μF; 0805≥0.33μF; 1206≥1μF; 1210≥4.7μF
		≤9.0%	0402≥0.068μF; 0603≥0.47μF 1206≥4.7μF;1210≥22uF
16V (C<1.0μF)	≤7.0%	≤9.0%	0402≥0.068μF; 0603≥0.68μF
		≤12.5%	0402≥0.22μF
16V (C≥1.0μF)	≤9.0%	≤12.5%	0805≥3.3μF; 1206≥10μF; 1210≥22μF; 1812≥47μF
10V	≤12.5%	---	--
6.3V	≤20.0%	---	--

Capacitance Range

DIELECTRIC		X7R																												
SIZE		0603					0805						1206						1210						1812					
Cap (μF)	Code	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	35V	50V	6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	200V	250V
1.0	105	B	B	B	B	B		C	C	C	C	I		J	J	J	P	P		C	C	C	P	F	C	C	C	F	F	G	G
1.5	155							I	I	I			J	J	J	P							G	G				F	F		
2.2	225		B				I	I	I	I		I	J	J	J	P	P				E	E	G	G				G	G		
3.3	335													P	P	P					E	E						G	G		
4.7	475						I	I	I	I			P	P	P	P	P			F	F	F	G								
6.8	685																														
10.0	106						I	I	I				P	P	P	P				F	F	F	G								
22.0	226												P	P						G	G	G									
47.0	476																		G	G											

Capacitance Range

DIELECTRIC		X7R															
SIZE		1825				2220				2225							
Cap (μF)	Code	50V	100V	200V	250V	50V	100V	200V	250V	50V	100V	200V	250V	500V	630V		
1.0	105	F	F	F	F	F	F	F	F	F	F	F	F	G	G		
1.5	155	F	F	G	G	F	F	G	G	F	F	G	G				
2.2	225	F	F	G	G	F	F	G	G	F	F	G	G				
3.3	335	F	F			F	F			F	F						
4.7	475	F	G			F	G			F	G						
6.8	685	G	H			G	H			G	H						
10.0	106	H	H			H	H			H	H						

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Capacitance Range

DIELECTRIC		X5R																							
SIZE		0402				0603					0805					1206					1210				
Cap(μF)	Code	6.3V	10V	16V	25V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V
1.0	105	N	N	N	N	X	X	X	X	X		C	C	C	I					P				C	P
1.2	125																							P	F
1.5	155					X					I	I	I	I			J	J				F	F	F	F
1.8	185																							G	G
2.2	225	N	N	K		X	X	X	X		I	I	I	I			J	J	P			F	F	G	G
2.7	275																							G	
3.3	335					X	X				I	I	I	I			P	P	P						
3.9	395																								
4.7	475	K	K			X	X	X			I	I	I	I	I	P	P	P	P	P		F	F	F	
5.6	565																								
6.8	685															P	P								
8.2	825																								
10.0	106	K				X	X				I	I	I	I		P	P	P	P		F	F	F	F	G
22.0	226					X					I	I				P	P	P			G	G	G	G	
47.0	476										I					P	P	P			G	G	G		
100.0	107															P					G	G	G		

Capacitance Range

DIELECTRIC		Y5V																											
SIZE		0402		0603				0805					1206						1210						1812				
Cap (μF)	Code	6.3V	10V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	35V	50V	6.3V	10V	16V	25V	35V	50V	10V	16V	25V	50V	100V
1.0	105	N	N		S	X	X		B	B	C	C		M	M	M		M		M	M	M		M	C	C	C	C	C
1.2	125																												
1.5	155				S				C	C				M	M	M				M	M	M			C	C	C	C	
1.8	185																												
2.2	225			S	S	X			C	C	I			M	M	M		J		M	M	M		E	C	C	C	C	
2.7	275																												
3.3	335								C	C				J	J	J				M	M	M			C	C	C	C	
3.9	395																												
4.7	475			X	X				C	C	I			J	J	J	J	P		M	M	C		E	C	C	C	C	
5.6	565																												
6.8	685								I					J	J					M	M	C			C	C	C	C	
8.2	825																												
10.0	106							I	I	I				J	J	P				C	C	C	F		C	C	C	F	
22.0	226							I	I					P						F	F								
47.0	476												P						F	F						G			
100.0	107																		G	G						G	G		