WesTech Component Co., Ltd

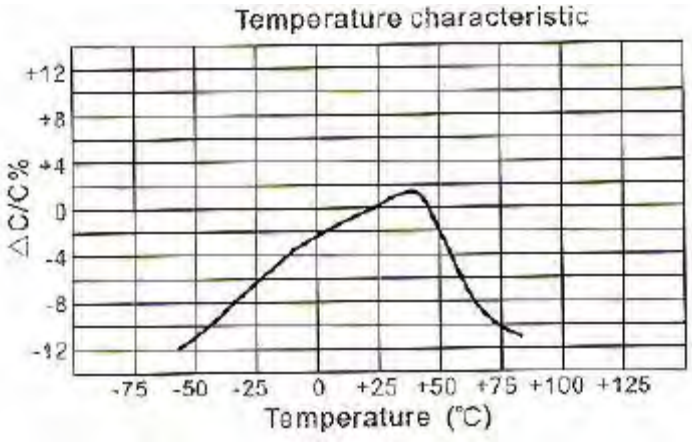
Y5V DIELECTRIC CAPACITORS

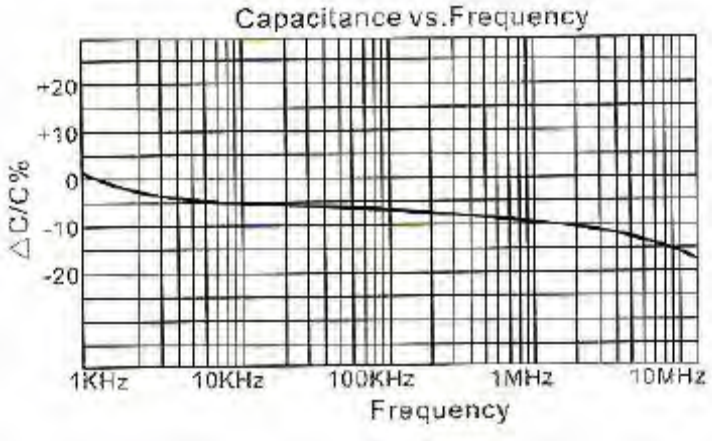
FEATURES

Y5V formulations are for general purpose use in a limited temperature range. They have a wide Temperature characteristics of + 22/-82% capacitance change over the operating temperature range Of -30 to 85°C. Y5V's high dielectric constant allows the manufacturer of the highest capacitance Value in given case size.

Performance Characteristics

Capacitance Range	1000pF ~ 22uF
Capacitance tolerance	± 80%,/- 20%
Operating temperature range	-30°C ~ +85° C
Temperature coefficient	within +22&/-82%
Rated voltage	10V,16V,25V,50V
Dissipation factor and "Q"	For ≤ 10V: DF ≤ 12.5% max For 25V min: DF ≤ 7% max
Insulation resistance	10GΩ min. or 500ΩF min. which ever is less
Dielectric withstanding voltage	250% rated voltage
Test voltage	≤10 uF , 1 ±0.2 Vrms >10 uF , 0.5 ±0.1 Vrms
Test frequency	≥10uF: 1 KHZ ± 10% >10uF, 120Hz ± 24Hz





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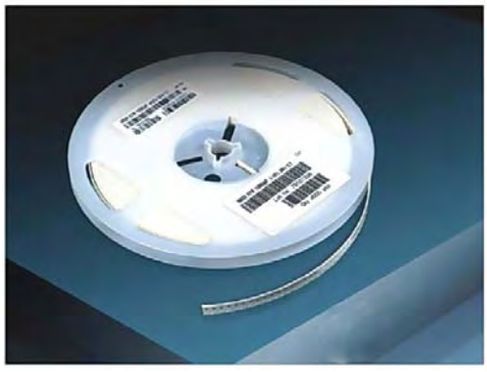
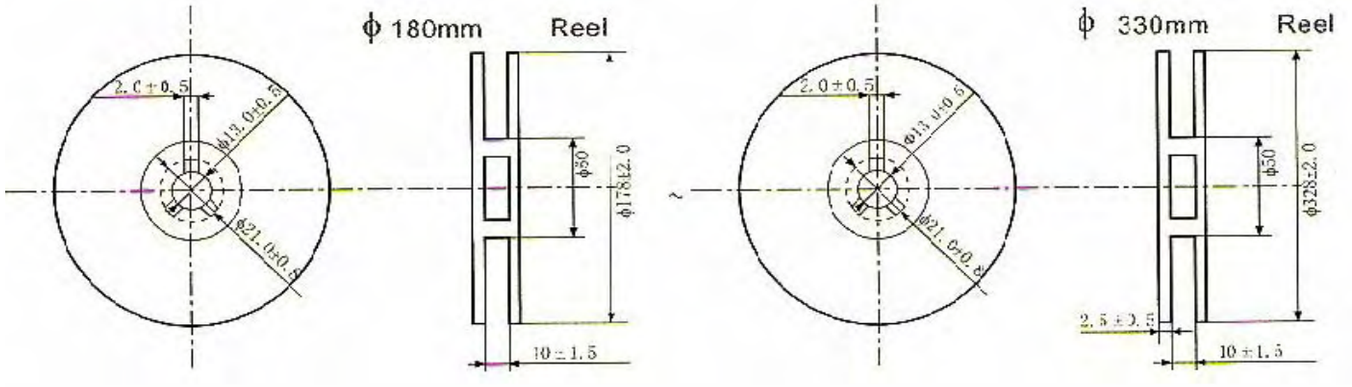
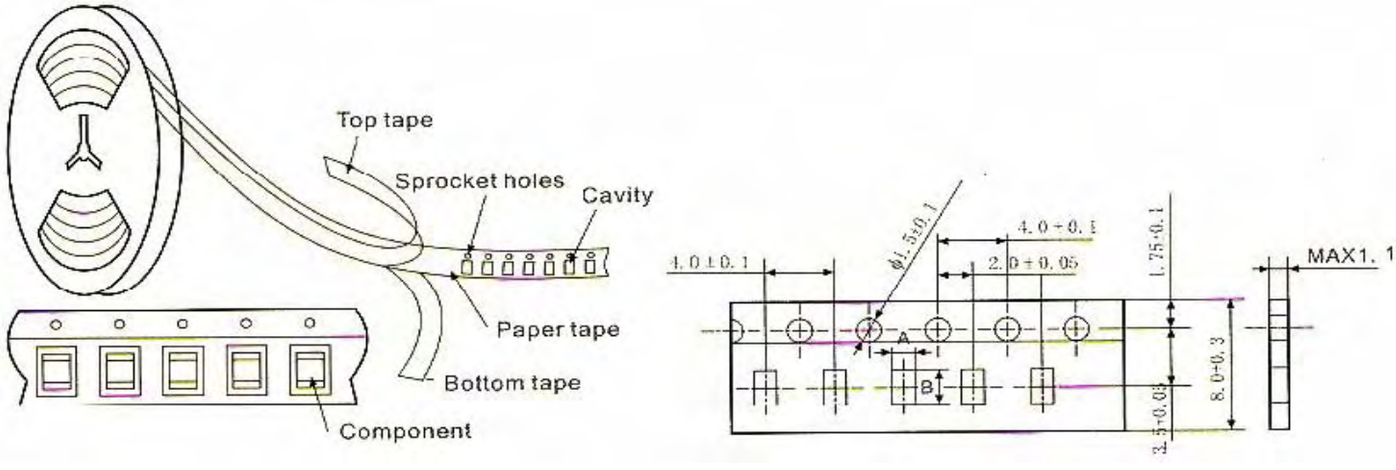
Packaging



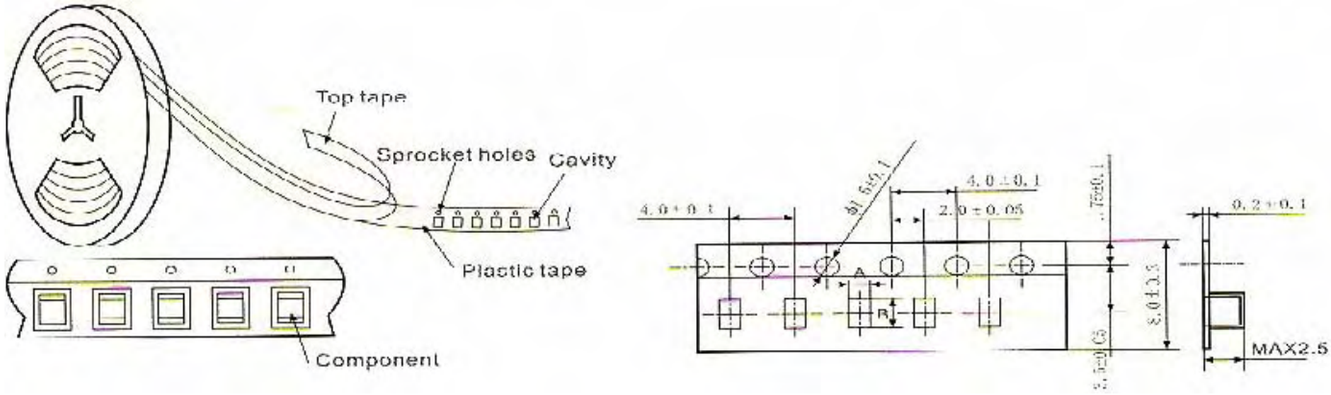
Tape and Reel Packaging



Paper tape



Embossed Tape



Packaging

Type	A	B
0402	0.65+0.1	1.15+0.1
0603	1.05+0.1	1.85+0.1
0805(T< 1.0mm)	1.55+0.15	2.3+0.15
1206(T< 1.0mm)	2.0+0.2	3.6+0.2
0805(T< 1.25mm)	1.45+0.2	2.25+0.2
1206(T< 1.0mm)	1.9+0.2	3.5+0.2

Taping Method

Tapes for the capacitors are wound clockwise.
The sprocket holes are to the right as the tape is pulled towards the user.
The top tape and the base tape are not attached at the end for a minimum of 5 pitches.
Part of the leader and part of the of the empty tape shall be attached to the end of the tape as following

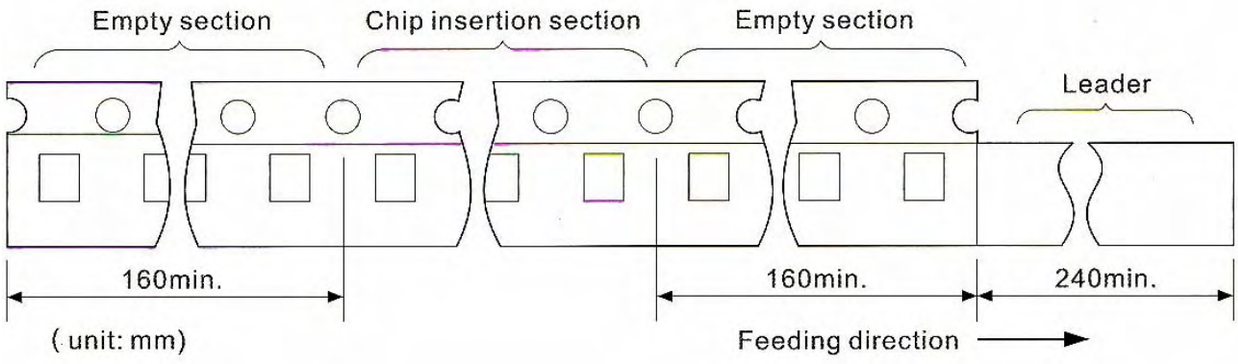
Illustration.

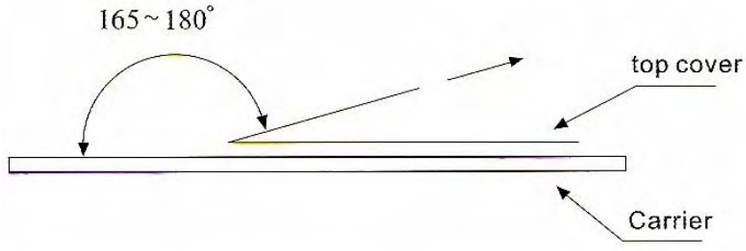
Number of missing capacitor is less than 0.1% of the total number quoted per reel or lpc, whichever is greater and are not continuous.

The top tape and bottom tape shall not protrude beyond the edges of the tape and bottom tape shall not cover sprocket below.

Cumulative tolerance of sprocket holes, 10 pitches: ± 0.3mm.

Peeling off force: 0.1 to 0.6N in direction shown down.





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COG (NPO) DIELECTRIC CAPACITORS

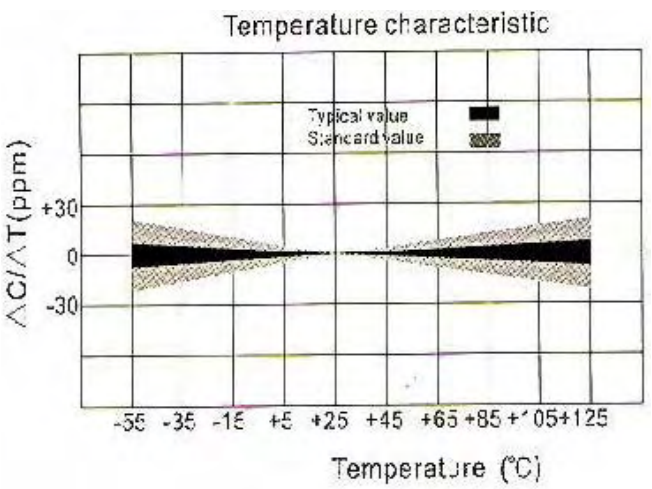
FEATURES

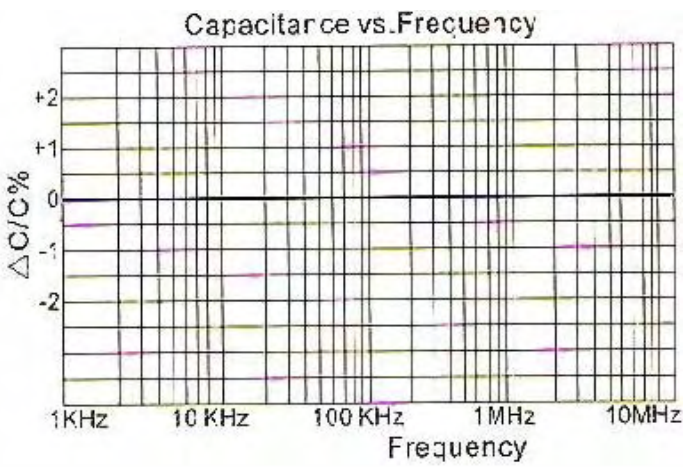
COG (NPO) is the most popular formulation of the " temperature compensation" , capacitor according to EIA, it is Class 1 dielectric and temperature coefficient is within 0 ± 30ppm/°C. Typical capacitance change With frequency and voltages is negligible at less than ± 0.05% COG (NPO) formulations show no aging Characteristics. COG (NPO) formulations usually have a "Q" in excess of 1000 and shows little capacitanc

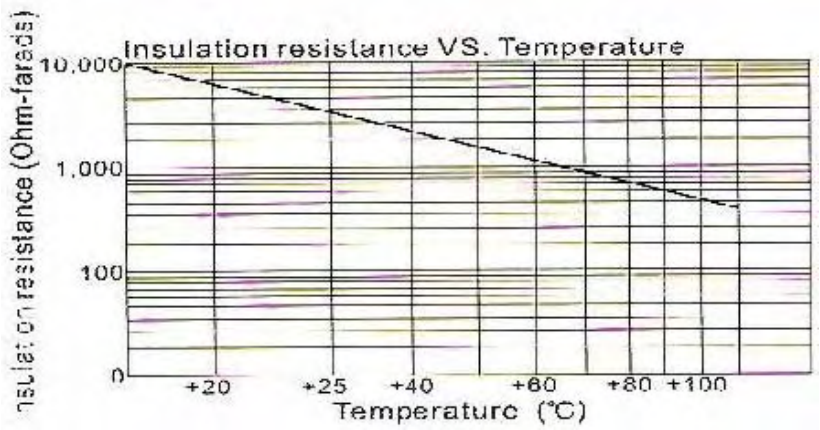
Performance Characteristics

Capacitance Range	0.2pF ~ 10nF
Capacitance tolerance	± 5%, ± 10% Preferred ± 5%, ± 10% CR ≤ 10pF, ± 0.25 pF, ± 0.5 pF For values ≤ 10pF, Preferred tolerance is ± 0.5 pF, also available ± 0.25 pF
Operating temperature range	-55 ~ 125°
Temperature coefficient	0 ± 30 ppm
Rated voltage	25V,50V,100V
Dissipation factor and "Q"	CR≥ 30 pF,Q≥1000 CR≤30pF, Q≥400+20CR
Insulation resistance	more than 10GΩ
Dielectric withstanding voltage	250 rated voltage
Test voltage	1 ±0.2 Vrms
Test frequency	CR> 1000pF, 1 KHZ ± 10 % For values > 1000pF: 1 KHZ ± 10%

Typical Characteristics curves







Capacitance Range VS. Chip Size

Size	25V	50V	100V
0402	0.2pF ~ 470pF	0.2pF ~ 1.0nF	
0603	0.2pF ~ 2.2nF	0.2pF ~ 1.5nF	0.2pF ~ 1.0nF
0805	0.5pF ~ 10nF	0.5pF ~ 2.2nF	0.5pF ~ 1.25F
1206	0.5pF ~ 10nF	0.5pF ~ 4.7nF	0.5pF ~ 2.2nF

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X7R DIELECTRIC CAPACITORS

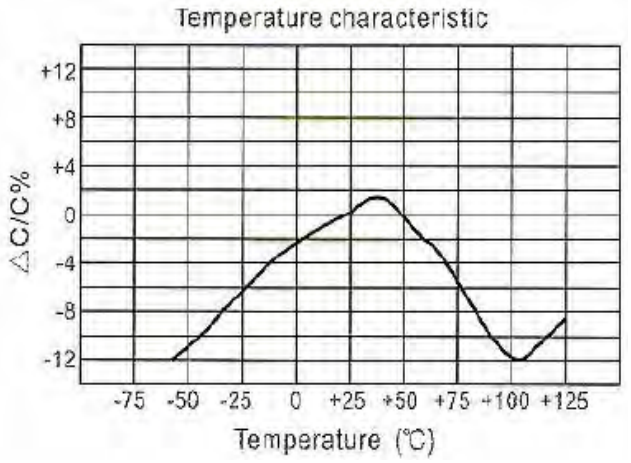
FEATURES

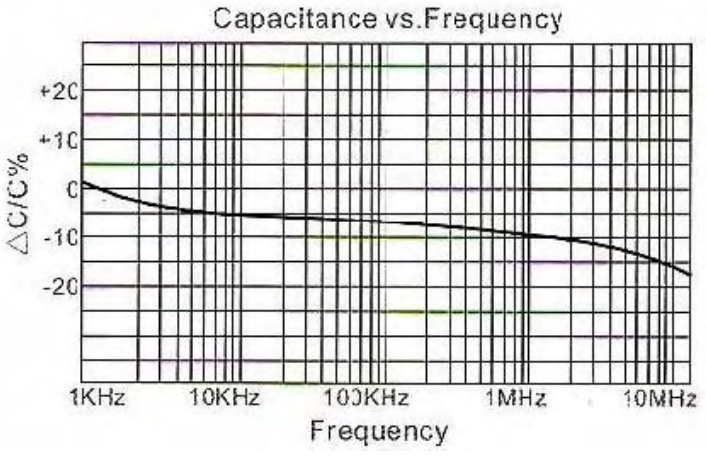
X7R formulations are called “temperature stable” ceramics and into EIA Class II dielectric. X7R is the most Popular of these intermediate dielectric constant materials. Its temperature capacitance is within ± 15% from -55 to 125°C. Its aging rate is 1%.

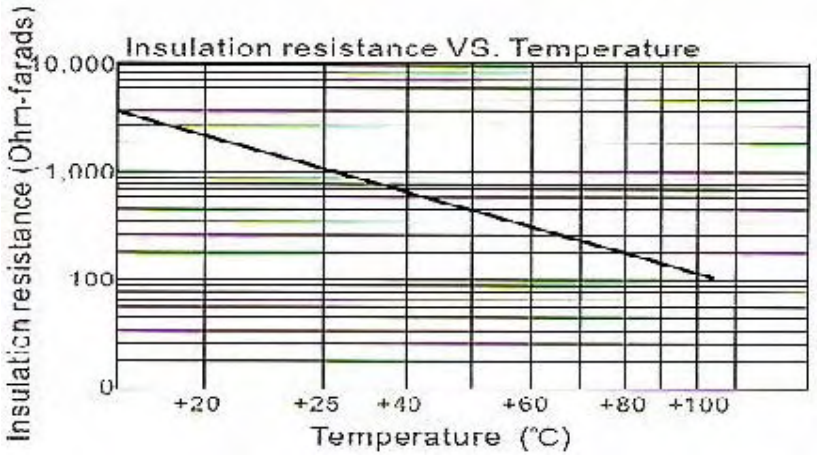
Performance Characteristics

Capacitance Range	100pF ~ 10nF
Capacitance tolerance	± 10%, ± 20% Preferred ± 10%, ± 20%
Operating temperature range	-55°C ~ 125°C
Temperature coefficient	within ± 15%
Rated voltage	6.3V,10V,16V,25V,50V,100V
Dissipation factor and “Q”	For ≤ 10V: DF ≤ 5.0% For 16V: DF ≤ 3.5% For 25V min: DF ≤ 2.5%
Insulation resistance	10GΩ min. or 500ΩF min. which ever is less
Dielectric withstanding voltage	250% rated voltage
Test voltage	≤10 uF , 1 ±0.2 Vrms >10 uF , 0.5 ±0.1 Vrms
Test frequency	≥10uF: 1 KHZ ± 10% >10uF, 120Hz ± 24Hz

Typical Characteristics curves

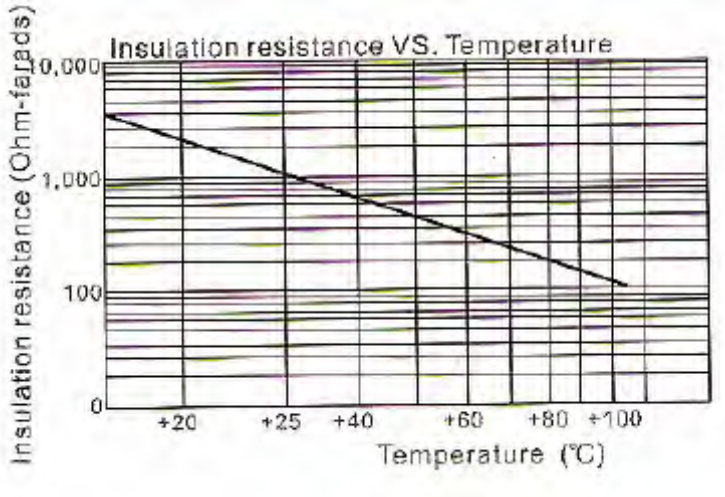






Capacitance range VS. Chip Size

Size	6.3V	10V	16V	25V	50V	100V
0402	100pF ~ 0.22uF	100pF ~ 0.1uF	100pF ~ 0.1uF	100pF ~ 22 nF	100pF ~ 10 nF	
0603	100pF ~ 2.2uF	100pF ~1.5 uF	100pF ~ 1.0 uF	100pF ~ 1.0 uF	100pF ~ 0.1uF	100pF ~ 10 nF
0805	100pF ~ 10uF	100pF ~ 4.7uF	100pF ~ 1.5 uF	100pF ~ 1.0 uF	100pF ~ 0.22uF	100pF ~ 22 nF
1206	100pF ~ 22uF	100pF ~ 10uF	100pF ~ 2.2 uF	100pF ~ 1.5 uF	100pF ~ 1.0 uF	100pF ~ 0.1uF



Capacitance range VS. Chip Size

Size	6.3V	10V	16V	25V	50V
0402	1.0nF ~ 1.0 uF	1.0pF ~ 0.1uF	1.0F ~ 0.1uF	1.0nF ~ 33 nF	1.0F ~ 10 nF
0603	2.2nF ~ 2.2uF	2.2nF ~ 2.2 uF	2.2nF ~ 1.0 uF	2.2nF ~0.22 uF	2.2nF ~ 0.1uF
0805	10nF ~ 10uF	10nF ~ 4.7uF	10nF ~ 2.2 uF	10nfF ~ 1.5 uF	10nfF ~ 1.5 uF
1206	100nF ~ 22uF	10nF ~ 10uF	10nF ~4.7 uF	10nF ~ 2.2 uF	10nF ~ 2.2 uF