

FEATURES

- Capacitance ranging from 0.1 μF to 3300μF
- Voltage ratings of 6V – 500V
- Operating temperature rang:
 - 55°C~85°C for X5R
 - 55°C~125°C for X7R
- Epoxy molded, high physical strength
- Tin/Lead solder plated (4% Pb minimum)
- 100% temperature cycling
- 100% accelerated steady state aging



APPLICATIONS

This series is designed for the COTS requirements, it's conditioned with MIL – PRF – 49470 Group A testing, typical applications include decoupling, filtering in high frequency DC-DC.

ORDERING INFORMATION

CT4502	T	X5R	25V	477	K	T	A
Series	Size code	Dielectric	Rated voltage	Capacitance code(pF)	Capacitance tolerance	Packaging	Test Level For COTS
CT4502	E N M T L	X7R X7S X5R	6V 10V 16V 25V 35V 50V 100V 200V 500V 1KV 2KV	First two digits represent significant figures, Third digit specifies number of zeros. Example: 477=4700000 00pF	K= ± 10% M= ± 20%	T=Bulk	A B C

DIMENSIONS

Unit: mm



	E	N	M	T	L
L	7.30±0.20	L 12.7±0.50	L 12.7±0.50	L 20.50±0.50	L 30.50±0.50
W	4.30±0.20	W 4.70±0.20	W 8.40±0.20	W 8.40±0.20	W 9.90±0.20
H	4.10±0.30	H 4.10±0.25	H 7.60±0.25	H 7.60±0.25	H 8.50±0.25
W1	2.40±0.20	W1 3.00±0.20	W1 5.20±0.20	W1 5.20±0.20	W1 6.60±0.20
A	1.25±0.30	A 1.50±0.30	A 2.00±0.30	A 2.00±0.30	A 3.00±0.30

ELECTRICAL CHARACTERISTICS

Item	Specification Limits	Measuring Conditions															
Operating Temperature Range	X7R:-55°C to +125°C X5R:-55°C to +85°C	—															
Capacitance	Within specified tolerance																
Dissipation Factor	X7R U _R ≤50V tg δ ≤3.5%; 50V < U _R ≤500V tg δ ≤2.5%;	<table border="1"> <thead> <tr> <th>Item</th> <th>Frequency</th> <th>Voltage</th> </tr> </thead> <tbody> <tr> <td>C_n≤10 μF</td> <td>1.0kHz ± 10%</td> <td>1.0Vrms ± 0.2V</td> </tr> <tr> <td>10 μF < C_n < 470 μF</td> <td>120Hz ± 10%</td> <td>0.5Vrms ± 0.2V</td> </tr> <tr> <td>470 μF ≤ C_n < 2000 μF</td> <td>50Hz ± 10%</td> <td>0.5Vrms ± 0.1V</td> </tr> <tr> <td>2000 μF ≤ C_n < 4700 μF</td> <td>25Hz ± 10%</td> <td>0.25Vrms ± 0.1V</td> </tr> </tbody> </table>	Item	Frequency	Voltage	C _n ≤10 μF	1.0kHz ± 10%	1.0Vrms ± 0.2V	10 μF < C _n < 470 μF	120Hz ± 10%	0.5Vrms ± 0.2V	470 μF ≤ C _n < 2000 μF	50Hz ± 10%	0.5Vrms ± 0.1V	2000 μF ≤ C _n < 4700 μF	25Hz ± 10%	0.25Vrms ± 0.1V
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X5R U _R ≤50V tg δ ≤10%; 50V < U _R ≤100V tg δ ≤3.5%; 100V < U _R ≤500V tg δ ≤2.5%;																	
Insulation Resistance	100MΩ · μF	Rated voltage applied for 2 minutes, charge and discharge current limited to 50mA (max).															
Dielectric Strength	No breakdown or visual defects	Voltage shall be applied with follow conditions for 5 seconds: U _R < 500V 2.5U _R U _R = 500V 1.5U _R Charging and discharging current shall be 50mA or less.															
Temperature characteristics	± 15%	Capacitance change with reference to +25°C															

CAPACITANCE AND RATED VOLTAGE RANGE

Size code	E壳							N壳							M壳							T壳							L壳										
	6	10	16	25	35	50	100	200	500	4	6	10	16	25	35	50	100	200	500	4	6	10	16	25	35	50	100	200	500	4	6	10	16	25	35	50	100	200	500
104								M																															
154								M																															
224																																							
334																			M																				
474								M											M																				
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338																																							
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688																																							
109																																							

■ X5R ■ X7R ■ X7S

M(±20%) accuracy is recommended for this specification
Size code (mm) :L (7.30±0.20) ×W (4.50±0.30) ×H (4.60±0.50)

TEST LEVEL

Level A	Level B	Level C
Temperature cycling	Temperature cycling	Temperature cycling
Accelerated steady state aging @48h	Accelerated steady state aging @96h	Accelerated steady state aging @96h
Appearance	Appearance	Resistance to moisture
Solderability	Solderability	Appearance
		Solderability
		Resistance to soldering heat
		Steeping

MARKING

