



KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0201, 18pF, 50 VDC  
 Product Family Qualification



		CBR02C180J5GAC																
		114B012570																
Test Performed		Sample Size (per lot)	Failure Count															
<b>Reliability and Environmental Tests</b>																		
High Temperature Life	Test temperature: 125 ±3°C Applied voltage: 200% of rated voltage (6.3 VDC - 250 VDC) 150% of rated voltage (500 VDC) Test time: 1,000 + 24/-0 hours Store at room temperature for 24 ±2 hours before measuring electrical properties.	15	0															
Humidity (Damp Heat) Steady State	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/ -0hrs.	15	0															
Humidity (Damp Heat) Load	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/-0 hrs. Applied Voltage : rated voltage Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	15	0															
Temperature Cycle	5 cycles of steps 1 - 4 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Step</th> <th>Temp. (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. operating temp. +0/-3</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room temp</td> <td>2 ~ 3</td> </tr> <tr> <td>3</td> <td>Max. operating temp. +3/-0</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room temp (25°C)</td> <td>2 ~ 3</td> </tr> </tbody> </table> Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	Step	Temp. (°C)	Time (min.)	1	Min. operating temp. +0/-3	30 ± 3	2	Room temp	2 ~ 3	3	Max. operating temp. +3/-0	30 ± 3	4	Room temp (25°C)	2 ~ 3	27	0
Step	Temp. (°C)	Time (min.)																
1	Min. operating temp. +0/-3	30 ± 3																
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3	Max. operating temp. +3/-0	30 ± 3																
4	Room temp (25°C)	2 ~ 3																
<b>Physical, Mechanical, and Process Tests</b>																		
Board Flex	Capacitor is mounted to a substrate which is flexed by means of ram at a rate of 1mm per second until the deflection becomes 1 mm. (Deflection is maintained for 5 ± 1 sec.) Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Terminal Strength	Pressurizing force: 0201 case size: 2N 0402 & 0603 case sizes: 5N 0805 case size: 10N Test time: 10 ± 1 sec.	27	0															
Solderability	Solder temperature: 235 ± 5°C Dipping time: 2 ± 0.5 sec.	12	0															
Resistance to Soldering Heat	Solder temperature: 260 ± 5°C Dipping time: 10 ± 1 sec Preheating: 120 to 150°C for 1 minute before immerse the capacitor in a eutectic solder. Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Vibration Resistance	Vibration frequency: 10 ~ 55 Hz/min. Total amplitude: 1.5mm Test time: 6 hrs. (Two hrs. each in three mutually perpendicular directions.)	12	0															
<b>Qualification Status</b>		<b>APPROVED</b>																
		147	0															

\*RH = Relative Humidity  
 C = Celsius



KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0201, 18pF, 50 VDC  
 Product Family Qualification Lot Id. 114B012570



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
High Temperature Life	Limits	17.1 - 18.9	≤ 0.13	≥ 10.00	± 3.00	≤ 0.31	≥ 1.00
	Max	18.330	0.04	20479.60	0.04	0.05	8255.23
	Min	17.730	0.04	10372.00	-0.16	0.03	1121.16
	AVG	18.050	0.04	15571.95	-0.05	0.04	3531.24
	STD	0.250	0.00	3313.90	0.06	0.00	2356.07
Humidity Steady State	Limits	17.1 - 18.9	≤ 0.13	≥ 10.00	± 5.00	≤ 0.31	≥ 1.00
	Max	18.300	0.04	52422.00	0.13	0.05	36533.20
	Min	17.720	0.04	15938.00	-0.18	0.03	11027.10
	AVG	18.000	0.04	27072.96	-0.03	0.04	17098.28
	STD	0.230	0.00	11048.68	0.07	0.00	6026.62
Humidity Load	Limits	17.1 - 18.9	≤ 0.13	≥ 10.00	± 7.50	≤ 0.63	≥ 0.50
	Max	18.330	0.040	97341.00	0.28	0.050	63246.70
	Min	17.740	0.040	21915.80	-0.12	0.030	10357.90
	AVG	17.990	0.040	52379.74	0.03	0.040	30430.98
	STD	0.230	0.000	24400.82	0.10	0.010	16734.29
Temperature Cycle	Limits	17.1 - 18.9	≤ 0.13	≥ 10.00	± 2.50	≤ 0.13	≥ 10.00
	Max	18.320	0.05	79151.99	-0.03	0.04	73045.90
	Min	17.720	0.04	11660.00	-1.66	0.03	10002.20
	AVG	18.040	0.04	47614.23	-0.25	0.03	34742.53
	STD	0.220	0.00	19950.01	0.33	0.00	21580.40

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, C0G, 0201, 18pF, 50 VDC  
 Product Family Qualification Lot Id. 114B012570



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
Resistance to Soldering Heat	Limits	17.1 - 18.9	≤ 0.13	≥ 10.00	± 2.50	≤ 0.13	≥ 10.00
	Max	18.270	0.050	38386.20	-0.08	0.060	5597.37
	Min	17.740	0.040	11565.70	-0.18	0.030	1657.39
	AVG	18.010	0.040	23568.27	-0.13	0.040	3839.98
	STD	0.220	0.000	8254.54	0.03	0.010	1114.14

		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR	Capacitance, pF	DF, 1MHz, %	IR
Vibration Resistance	Limits	17.1 - 18.9	≤ 0.13	N/A	17.1 - 18.9	≤ 0.13	N/A
	Max	18.280	0.040	N/A	18.27	0.030	N/A
	Min	17.760	0.030	N/A	17.76	0.030	N/A
	AVG	18.080	0.030	N/A	18.070	0.030	N/A
	STD	0.200	0.000	N/A	0.19	0.000	N/A

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, C0G, 0201, 33pF, 10 VDC  
 Product Family Qualification



		CBR02C330J8GAC																
		114A010282																
Test Performed		Sample Size (per lot)	Failure Count															
<b>Reliability and Environmental Tests</b>																		
High Temperature Life	Test temperature: 125 ±3°C Applied voltage: 200% of rated voltage (6.3 VDC - 250 VDC) 150% of rated voltage (500 VDC) Test time: 1,000 + 24/-0 hours Store at room temperature for 24 ±2 hours before measuring electrical properties.	15	0															
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Terminal Strength	Pressurizing force: 0201 case size: 2N 0402 & 0603 case sizes: 5N 0805 case size: 10N Test time: 10 ± 1 sec.	27	0															
Solderability	Solder temperature: 235 ± 5°C Dipping time: 2 ± 0.5 sec.	12	0															
Resistance to Soldering Heat	Solder temperature: 260 ± 5°C Dipping time: 10 ± 1 sec Preheating: 120 to 150°C for 1 minute before immerse the capacitor in a eutectic solder. Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Vibration Resistance	Vibration frequency: 10 ~ 55 Hz/min. Total amplitude: 1.5mm Test time: 6 hrs. (Two hrs. each in three mutually perpendicular directions.)	12	0															
<b>Qualification Status</b>		<b>APPROVED</b>																
		147	0															

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 C = Celsius



KEMET Ceramic Surface Mount Capacitors  
 CBR Series, C0G, 0201, 33pF, 10 VDC  
 Product Family Qualification Lot Id. 114A010282



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
High Temperature Life	Limits	31.35 - 34.65	≤ 0.10	≥ 10.00	± 3.00	≤ 0.29	≥ 1.00
	Max	34.170	0.06	5704.38	1.72	0.05	4932.71
	Min	31.810	0.04	1851.62	-0.13	0.03	1008.86
	AVG	33.230	0.04	3010.32	0.09	0.03	2282.95
	STD	0.890	0.01	1172.89	0.50	0.00	1168.32
Humidity Steady State	Limits	31.35 - 34.65	≤ 0.10	≥ 10.00	± 5.00	≤ 0.29	≥ 1.00
	Max	34.520	0.05	3836.60	0.65	0.04	802.10
	Min	32.120	0.03	1074.49	-0.65	0.03	240.35
	AVG	33.750	0.04	1960.64	-0.02	0.03	578.34
	STD	0.810	0.00	719.30	0.39	0.00	159.26
Humidity Load	Limits	31.35 - 34.65	≤ 0.10	≥ 10.00	± 7.50	≤ 0.50	≥ 0.50
	Max	34.500	0.040	4622.76	4.94	0.040	2047.27
	Min	32.190	0.030	1025.26	-1.54	0.030	807.03
	AVG	33.780	0.040	2184.54	0.37	0.030	1262.12
	STD	0.820	0.000	924.22	1.46	0.000	436.64
Temperature Cycle	Limits	31.35 - 34.65	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	34.460	0.08	3311.30	-0.04	0.06	1803.59
	Min	31.830	0.04	639.93	-0.20	0.03	443.61
	AVG	33.770	0.04	1455.12	-0.10	0.04	1051.53
	STD	0.810	0.01	720.55	0.03	0.01	400.35

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, C0G, 0201, 33pF, 10 VDC  
 Product Family Qualification Lot Id. 114A010282



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
Resistance to Soldering Heat	Limits	31.35 - 34.65	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	34.330	0.040	1729.29	-0.04	0.040	996.25
	Min	32.050	0.030	631.21	-0.09	0.030	483.52
	AVG	33.490	0.030	1010.77	-0.07	0.040	698.39
	STD	0.900	0.000	395.34	0.01	0.000	162.93

		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR	Capacitance, pF	DF, 1MHz, %	IR
Vibration Resistance	Limits	31.35 - 34.65	≤ 0.10	N/A	31.35 - 34.65	≤ 0.10	N/A
	Max	34.350	0.050	N/A	34.35	0.050	N/A
	Min	32.030	0.030	N/A	32.05	0.030	N/A
	AVG	33.450	0.030	N/A	33.450	0.030	N/A
	STD	0.830	0.010	N/A	0.82	0.010	N/A

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0201, 33pF, 25 VDC  
 Product Family Qualification



		CBR02C330J3GAC																
		114B012574																
Test Performed		Sample Size (per lot)	Failure Count															
<b>Reliability and Environmental Tests</b>																		
High Temperature Life	Test temperature: 125 ±3°C Applied voltage: 200% of rated voltage (6.3 VDC - 250 VDC) 150% of rated voltage (500 VDC) Test time: 1,000 + 24/-0 hours Store at room temperature for 24 ±2 hours before measuring electrical properties.	15	0															
Humidity (Damp Heat) Steady State	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/ -0hrs.	15	0															
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<b>Physical, Mechanical, and Process Tests</b>																		
Board Flex	Capacitor is mounted to a substrate which is flexed by means of ram at a rate of 1mm per second until the deflection becomes 1 mm. (Deflection is maintained for 5 ± 1 sec.) Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Terminal Strength	Pressurizing force: 0201 case size: 2N 0402 & 0603 case sizes: 5N 0805 case size: 10N Test time: 10 ± 1 sec.	27	0															
Solderability	Solder temperature: 235 ± 5°C Dipping time: 2 ± 0.5 sec.	12	0															
Resistance to Soldering Heat	Solder temperature: 260 ± 5°C Dipping time: 10 ± 1 sec Preheating: 120 to 150°C for 1 minute before immerse the capacitor in a eutectic solder. Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Vibration Resistance	Vibration frequency: 10 ~ 55 Hz/min. Total amplitude: 1.5mm Test time: 6 hrs. (Two hrs. each in three mutually perpendicular directions.)	12	0															
<b>Qualification Status</b>		<b>APPROVED</b>																
		147	0															

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, C0G, 0201, 33pF, 25 VDC  
 Product Family Qualification Lot Id. 114B012574



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
High Temperature Life	Limits	31.35 - 34.65	≤ 0.10	≥ 10.00	± 3.00	≤ 0.29	≥ 1.00
	Max	34.170	0.06	5704.38	1.72	0.05	4932.71
	Min	31.810	0.04	1851.62	-0.13	0.03	1008.86
	AVG	33.230	0.04	3010.32	0.09	0.03	2282.95
	STD	0.890	0.01	1172.89	0.50	0.00	1168.32
Humidity Steady State	Limits	31.35 - 34.65	≤ 0.10	≥ 10.00	± 5.00	≤ 0.29	≥ 1.00
	Max	34.520	0.05	3836.60	0.65	0.04	802.10
	Min	32.120	0.03	1074.49	-0.65	0.03	240.35
	AVG	33.750	0.04	1960.64	-0.02	0.03	578.34
	STD	0.810	0.00	719.30	0.39	0.00	159.26
Humidity Load	Limits	31.35 - 34.65	≤ 0.10	≥ 10.00	± 7.50	≤ 0.50	≥ 0.50
	Max	34.500	0.040	4622.76	4.94	0.040	1689.28
	Min	32.190	0.030	1025.26	-1.54	0.030	807.03
	AVG	33.780	0.040	2184.54	0.37	0.030	1108.79
	STD	0.820	0.000	924.22	1.46	0.000	312.14
Temperature Cycle	Limits	31.35 - 34.65	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	34.460	0.08	1973.42	-0.04	0.06	1607.86
	Min	31.830	0.04	728.66	-0.20	0.03	601.13
	AVG	33.770	0.04	1206.97	-0.10	0.04	1070.04
	STD	0.810	0.01	327.71	0.03	0.01	331.80

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 Product Family Qualification Lot Id. 114B012574



		Initial Readings			Post Test Readings		
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	Max	34.330	0.040	1287.34	-0.04	0.040	996.25
	Min	32.050	0.030	631.21	-0.09	0.030	483.52
	AVG	33.490	0.030	902.43	-0.07	0.040	698.39
	STD	0.900	0.000	237.81	0.01	0.000	162.93

		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR	Capacitance, pF	DF, 1MHz, %	IR
Vibration Resistance	Limits	31.35 - 34.65	≤ 0.10	N/A	31.35 - 34.65	≤ 0.10	N/A
	Max	34.350	0.050	N/A	34.35	0.050	N/A
	Min	32.030	0.030	N/A	32.05	0.030	N/A
	AVG	33.450	0.030	N/A	33.450	0.030	N/A
	STD	0.830	0.010	N/A	0.82	0.010	N/A

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		CBR04C101J3GAC																
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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0402, 100pF, 25 VDC  
 Product Family Qualification Lot Id. 111142000304



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
High Temperature Life	Limits	95 - 105	≤ 0.10	≥ 10.00	± 3.00	≤ 0.29	≥ 1.00
	Max	104.990	0.06	356.42	0.09	0.05	958.94
	Min	103.290	0.05	294.53	-0.90	0.04	234.36
	AVG	104.260	0.05	334.54	0.01	0.04	576.73
	STD	0.470	0.00	12.63	0.21	0.00	154.93
Humidity Steady State	Limits	95 - 105	≤ 0.10	≥ 10.00	± 5.00	≤ 0.29	≥ 1.00
	Max	104.430	0.02	36535.60	0.09	0.01	1413.99
	Min	101.950	0.00	1160.71	-0.05	0.00	133.40
	AVG	103.210	0.01	4311.02	0.02	0.00	233.31
	STD	0.900	0.01	8973.75	0.04	0.00	326.78
Humidity Load	Limits	95 - 105	≤ 0.10	≥ 10.00	± 7.50	≤ 0.50	≥ 0.50
	Max	104.830	0.050	95538.60	1.09	0.060	36748.30
	Min	97.630	0.000	878.32	-1.35	0.000	18025.40
	AVG	103.150	0.010	21718.41	-0.02	0.010	31210.36
	STD	1.150	0.010	27883.45	0.33	0.020	3644.30
Temperature Cycle	Limits	95 - 105	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	104.970	0.03	371.27	0.00	0.03	375.47
	Min	102.970	0.02	317.08	-0.04	0.02	120.45
	AVG	104.170	0.02	341.87	-0.02	0.02	287.49
	STD	0.510	0.00	12.74	0.01	0.00	75.99

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0402, 100pF, 25 VDC  
 Product Family Qualification Lot Id. 111142000304



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
Resistance to Soldering Heat	Limits	95 - 105	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	103.880	0.060	66603.50	0.01	0.030	90601.30
	Min	101.980	0.000	1103.71	-0.05	0.000	1131.89
	AVG	102.810	0.010	20069.09	-0.03	0.010	8984.14
	STD	0.590	0.020	26162.09	0.02	0.010	25703.79

		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR	Capacitance, pF	DF, 1MHz, %	IR
Vibration Resistance	Limits	95 - 105	≤ 0.10	N/A	95 - 105	≤ 0.10	N/A
	Max	104.360	0.030	N/A	104.35	0.050	N/A
	Min	102.680	0.000	N/A	102.69	0.000	N/A
	AVG	103.670	0.010	N/A	103.670	0.010	N/A
	STD	0.490	0.010	N/A	0.49	0.020	N/A

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, C0G, 0402, 56pF, 100 VDC  
 Product Family Qualification



		CBR04C560J1GAC																
		111141012961																
Test Performed		Sample Size (per lot)	Failure Count															
<b>Reliability and Environmental Tests</b>																		
High Temperature Life	Test temperature: 125 ±3°C Applied voltage: 200% of rated voltage (6.3 VDC - 250 VDC) 150% of rated voltage (500 VDC) Test time: 1,000 + 24/-0 hours Store at room temperature for 24 ±2 hours before measuring electrical properties.	15	0															
Humidity (Damp Heat) Steady State	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/ -0hrs.	15	0															
Humidity (Damp Heat) Load	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/-0 hrs. Applied Voltage : rated voltage Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	15	0															
Temperature Cycle	5 cycles of steps 1 - 4 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Step</th> <th>Temp. (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. operating temp. +0/-3</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room temp</td> <td>2 ~ 3</td> </tr> <tr> <td>3</td> <td>Max. operating temp. +3/-0</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room temp (25°C)</td> <td>2 ~ 3</td> </tr> </tbody> </table> Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	Step	Temp. (°C)	Time (min.)	1	Min. operating temp. +0/-3	30 ± 3	2	Room temp	2 ~ 3	3	Max. operating temp. +3/-0	30 ± 3	4	Room temp (25°C)	2 ~ 3	27	0
Step	Temp. (°C)	Time (min.)																
1	Min. operating temp. +0/-3	30 ± 3																
2	Room temp	2 ~ 3																
3	Max. operating temp. +3/-0	30 ± 3																
4	Room temp (25°C)	2 ~ 3																
<b>Physical, Mechanical, and Process Tests</b>																		
Board Flex	Capacitor is mounted to a substrate which is flexed by means of ram at a rate of 1mm per second until the deflection becomes 1 mm. (Deflection is maintained for 5 ± 1 sec.) Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Terminal Strength	Pressurizing force: 0201 case size: 2N 0402 & 0603 case sizes: 5N 0805 case size: 10N Test time: 10 ± 1 sec.	27	0															
Solderability	Solder temperature: 235 ± 5°C Dipping time: 2 ± 0.5 sec.	12	0															
Resistance to Soldering Heat	Solder temperature: 260 ± 5°C Dipping time: 10 ± 1 sec Preheating: 120 to 150°C for 1 minute before immerse the capacitor in a eutectic solder. Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Vibration Resistance	Vibration frequency: 10 ~ 55 Hz/min. Total amplitude: 1.5mm Test time: 6 hrs. (Two hrs. each in three mutually perpendicular directions.)	12	0															
<b>Qualification Status</b>		<b>APPROVED</b>																
		147	0															

\*RH = Relative Humidity  
 C = Celsius



KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0402, 56pF, 100 VDC  
 Product Family Qualification Lot Id. 111141012961



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
High Temperature Life	Limits	53.2 - 58.8	≤ 0.10	≥ 10.00	± 3.00	≤ 0.29	≥ 1.00
	Max	58.780	0.03	880.23	0.51	0.06	1662.15
	Min	57.200	0.01	306.67	-1.62	0.02	740.98
	AVG	58.050	0.02	477.25	0.07	0.03	1071.46
	STD	0.490	0.01	172.93	0.68	0.01	285.88
Humidity Steady State	Limits	53.2 - 58.8	≤ 0.10	≥ 10.00	± 5.00	≤ 0.29	≥ 1.00
	Max	58.720	0.08	1152.07	0.58	0.04	4625.30
	Min	57.350	0.00	448.01	-1.95	0.00	1267.95
	AVG	57.980	0.02	750.32	-0.09	0.01	2776.13
	STD	0.490	0.02	220.78	0.59	0.01	1020.73
Humidity Load	Limits	53.2 - 58.8	≤ 0.10	≥ 10.00	± 7.50	≤ 0.50	≥ 0.50
	Max	58.690	0.040	2134.90	0.65	0.030	1493.41
	Min	57.200	0.000	431.53	-0.02	0.000	376.62
	AVG	57.950	0.010	1090.08	0.08	0.000	724.55
	STD	0.470	0.010	638.06	0.17	0.010	292.82
Temperature Cycle	Limits	53.2 - 58.8	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	58.660	0.04	777.14	1.39	0.09	4423.77
	Min	57.160	0.00	103.71	-1.35	0.00	1239.06
	AVG	57.990	0.01	424.75	-0.05	0.02	2724.26
	STD	0.480	0.01	175.19	0.39	0.03	1165.85

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0402, 56pF, 100 VDC  
 Product Family Qualification Lot Id. 111141012961



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
Resistance to Soldering Heat	Limits	53.2 - 58.8	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	58.540	0.060	3378.68	-0.04	0.030	4278.20
	Min	57.390	0.000	1314.95	-0.07	0.000	1449.84
	AVG	57.950	0.020	2127.19	-0.06	0.010	2790.43
	STD	0.370	0.020	741.70	0.01	0.010	867.35

		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR	Capacitance, pF	DF, 1MHz, %	IR
Vibration Resistance	Limits	53.2 - 58.8	≤ 0.10	N/A	53.2 - 58.8	≤ 0.10	N/A
	Max	58.570	0.030	N/A	58.46	0.040	N/A
	Min	57.230	0.000	N/A	53.53	0.000	N/A
	AVG	57.930	0.010	N/A	57.470	0.010	N/A
	STD	0.510	0.010	N/A	1.32	0.010	N/A

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0603, 20pF, 50 VDC  
 Product Family Qualification



		CBR06C200J5GAC																
		111143002972																
Test Performed		Sample Size (per lot)	Failure Count															
<b>Reliability and Environmental Tests</b>																		
High Temperature Life	Test temperature: 125 ±3°C Applied voltage: 200% of rated voltage (6.3 VDC - 250 VDC) 150% of rated voltage (500 VDC) Test time: 1,000 + 24/-0 hours Store at room temperature for 24 ±2 hours before measuring electrical properties.	15	0															
Humidity (Damp Heat) Steady State	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/ -0hrs.	15	0															
Humidity (Damp Heat) Load	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/-0 hrs. Applied Voltage : rated voltage Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	15	0															
Temperature Cycle	5 cycles of steps 1 - 4 <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Step</th> <th>Temp. (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. operating temp. +0/-3</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room temp</td> <td>2 ~ 3</td> </tr> <tr> <td>3</td> <td>Max. operating temp. +3/-0</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room temp (25°C)</td> <td>2 ~ 3</td> </tr> </tbody> </table> Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	Step	Temp. (°C)	Time (min.)	1	Min. operating temp. +0/-3	30 ± 3	2	Room temp	2 ~ 3	3	Max. operating temp. +3/-0	30 ± 3	4	Room temp (25°C)	2 ~ 3	27	0
Step	Temp. (°C)	Time (min.)																
1	Min. operating temp. +0/-3	30 ± 3																
2	Room temp	2 ~ 3																
3	Max. operating temp. +3/-0	30 ± 3																
4	Room temp (25°C)	2 ~ 3																
<b>Physical, Mechanical, and Process Tests</b>																		
Board Flex	Capacitor is mounted to a substrate which is flexed by means of ram at a rate of 1mm per second until the deflection becomes 1 mm. (Deflection is maintained for 5 ± 1 sec.) Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Terminal Strength	Pressurizing force: 0201 case size: 2N 0402 & 0603 case sizes: 5N 0805 case size: 10N Test time: 10 ± 1 sec.	27	0															
Solderability	Solder temperature: 235 ± 5°C Dipping time: 2 ± 0.5 sec.	12	0															
Resistance to Soldering Heat	Solder temperature: 260 ± 5°C Dipping time: 10 ± 1 sec Preheating: 120 to 150°C for 1 minute before immerse the capacitor in a eutectic solder. Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Vibration Resistance	Vibration frequency: 10 ~ 55 Hz/min. Total amplitude: 1.5mm Test time: 6 hrs. (Two hrs. each in three mutually perpendicular directions.)	12	0															
<b>Qualification Status</b>		<b>APPROVED</b>																
		147	0															

\*RH = Relative Humidity  
 C = Celsius





KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0603, 20pF, 50 VDC  
 Product Family Qualification Lot Id. 111143002972



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
High Temperature Life	Limits	19 - 21	≤ 0.13	≥ 10.00	± 3.00	≤ 0.31	≥ 1.00
	Max	20.800	0.04	3769.60	0.16	0.16	1851.19
	Min	20.380	0.03	1055.64	0.10	0.10	555.86
	AVG	20.580	0.03	2195.24	0.13	0.13	1083.53
	STD	0.120	0.00	875.97	0.02	0.02	404.69
Humidity Steady State	Limits	19 - 21	≤ 0.13	≥ 10.00	± 5.00	≤ 0.31	≥ 1.00
	Max	20.900	0.04	3311.74	0.18	0.11	4594.72
	Min	20.370	0.03	1021.72	0.10	0.09	1310.84
	AVG	20.570	0.04	1921.21	0.13	0.10	3142.34
	STD	0.140	0.00	705.86	0.03	0.00	950.32
Humidity Load	Limits	19 - 21	≤ 0.13	≥ 10.00	± 7.50	≤ 0.60	≥ 0.50
	Max	20.930	0.040	3736.37	0.15	0.100	1836.11
	Min	20.400	0.030	1004.50	0.11	0.090	1003.54
	AVG	20.600	0.030	1893.14	0.13	0.090	1397.44
	STD	0.180	0.000	798.02	0.01	0.000	290.66
Temperature Cycle	Limits	19 - 21	≤ 0.13	≥ 10.00	± 2.50	≤ 0.13	≥ 10.00
	Max	20.840	0.06	5060.24	0.81	0.07	4780.34
	Min	20.340	0.03	1071.97	0.63	0.04	1075.76
	AVG	20.540	0.03	2891.78	0.72	0.05	2650.49
	STD	0.140	0.01	1152.83	0.05	0.01	1041.81

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, C0G, 0603, 20pF, 50 VDC  
 Product Family Qualification Lot Id. 111143002972



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
Resistance to Soldering Heat	Limits	19 - 21	≤ 0.13	≥ 10.00	± 2.50	≤ 0.13	≥ 10.00
	Max	20.850	0.040	2126.78	-0.01	0.090	1975.74
	Min	20.390	0.030	1022.40	-0.07	0.030	840.03
	AVG	20.620	0.030	1619.46	-0.04	0.040	1330.55
	STD	0.150	0.000	395.66	0.02	0.020	402.46

		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR	Capacitance, pF	DF, 1MHz, %	IR
Mechanical Shock / Vibration	Limits	19 - 21	≤ 0.13	N/A	19 - 21	≤ 0.13	N/A
	Max	20.700	0.080	N/A	20.71	0.040	N/A
	Min	20.420	0.030	N/A	20.43	0.030	N/A
	AVG	20.570	0.040	N/A	20.580	0.030	N/A
	STD	0.090	0.020	N/A	0.09	0.000	N/A

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, C0G, 0603, 47pF, 250 VDC  
 Product Family Qualification



		CBR06C470JAGAC																
		114A013452																
Test Performed		Sample Size (per lot)	Failure Count															
<b>Reliability and Environmental Tests</b>																		
High Temperature Life	Test temperature: 125 ±3°C Applied voltage: 200% of rated voltage (6.3 VDC - 250 VDC) 150% of rated voltage (500 VDC) Test time: 1,000 + 24/-0 hours Store at room temperature for 24 ±2 hours before measuring electrical properties.	15	0															
Humidity (Damp Heat) Steady State	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/ -0hrs.	15	0															
Humidity (Damp Heat) Load	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/-0 hrs. Applied Voltage : rated voltage Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	15	0															
Temperature Cycle	5 cycles of steps 1 - 4 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Step</th> <th>Temp. (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. operating temp. +0/-3</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room temp</td> <td>2 ~ 3</td> </tr> <tr> <td>3</td> <td>Max. operating temp. +3/-0</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room temp (25°C)</td> <td>2 ~ 3</td> </tr> </tbody> </table> Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	Step	Temp. (°C)	Time (min.)	1	Min. operating temp. +0/-3	30 ± 3	2	Room temp	2 ~ 3	3	Max. operating temp. +3/-0	30 ± 3	4	Room temp (25°C)	2 ~ 3	27	0
Step	Temp. (°C)	Time (min.)																
1	Min. operating temp. +0/-3	30 ± 3																
2	Room temp	2 ~ 3																
3	Max. operating temp. +3/-0	30 ± 3																
4	Room temp (25°C)	2 ~ 3																
<b>Physical, Mechanical, and Process Tests</b>																		
Board Flex	Capacitor is mounted to a substrate which is flexed by means of ram at a rate of 1mm per second until the deflection becomes 1 mm. (Deflection is maintained for 5 ± 1 sec.) Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Terminal Strength	Pressurizing force: 0201 case size: 2N 0402 & 0603 case sizes: 5N 0805 case size: 10N Test time: 10 ± 1 sec.	27	0															
Solderability	Solder temperature: 235 ± 5°C Dipping time: 2 ± 0.5 sec.	12	0															
Resistance to Soldering Heat	Solder temperature: 260 ± 5°C Dipping time: 10 ± 1 sec Preheating: 120 to 150°C for 1 minute before immerse the capacitor in a eutectic solder. Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Vibration Resistance	Vibration frequency: 10 ~ 55 Hz/min. Total amplitude: 1.5mm Test time: 6 hrs. (Two hrs. each in three mutually perpendicular directions.)	12	0															
<b>Qualification Status</b>		<b>APPROVED</b>																
		147	0															

\*RH = Relative Humidity  
 C = Celsius



KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0603, 47pF, 250 VDC  
 Product Family Qualification Lot Id. 114A013452



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
High Temperature Life	Limits	44.65 - 49.35	≤ 0.10	≥ 10.00	± 3.00	≤ 0.29	≥ 1.00
	Max	48.830	0.05	1568.77	0.03	0.05	965.56
	Min	46.510	0.04	1026.30	-0.11	0.01	551.37
	AVG	48.100	0.04	1293.98	-0.02	0.05	709.93
	STD	0.620	0.00	182.51	0.04	0.01	109.42
Humidity Steady State	Limits	44.65 - 49.35	≤ 0.10	≥ 10.00	± 5.00	≤ 0.29	≥ 1.00
	Max	49.060	0.05	964.55	0.04	0.05	906.40
	Min	47.380	0.04	572.37	-0.12	0.05	525.88
	AVG	48.300	0.04	701.64	-0.01	0.05	657.65
	STD	0.530	0.00	130.75	0.04	0.00	119.74
Humidity Load	Limits	44.65 - 49.35	≤ 0.10	≥ 10.00	± 7.50	≤ 0.50	≥ 0.50
	Max	48.740	0.050	1619.34	0.05	0.050	940.40
	Min	46.340	0.040	972.25	-0.08	0.050	587.08
	AVG	47.780	0.040	1181.67	0.01	0.050	691.37
	STD	0.750	0.000	183.97	0.03	0.000	106.24
Temperature Cycle	Limits	44.65 - 49.35	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	49.080	0.05	1256.01	0.39	0.04	980.48
	Min	47.470	0.04	599.24	-0.21	0.04	563.87
	AVG	48.140	0.04	754.86	-0.01	0.04	699.51
	STD	0.480	0.00	185.78	0.10	0.00	137.96

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0603, 47pF, 250 VDC  
 Product Family Qualification Lot Id. 114A013452



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
Resistance to Soldering Heat	Limits	44.65 - 49.35	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	49.010	0.050	905.84	-0.05	0.050	864.58
	Min	46.440	0.040	593.71	-0.20	0.040	567.09
	AVG	47.940	0.050	691.79	-0.09	0.040	668.07
	STD	0.600	0.000	94.37	0.05	0.000	92.54

		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR	Capacitance, pF	DF, 1MHz, %	IR
Mechanical Shock / Vibration	Limits	44.65 - 49.35	≤ 0.10	N/A	44.65 - 49.35	≤ 0.10	N/A
	Max	48.700	0.050	N/A	48.70	0.050	N/A
	Min	47.630	0.040	N/A	47.62	0.050	N/A
	AVG	48.130	0.040	N/A	48.130	0.050	N/A
	STD	0.310	0.000	N/A	0.32	0.000	N/A

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0805, 100pF, 250 VDC  
 Product Family Qualification



		CBR08C101JAGAC																
		114A005514																
Test Performed		Sample Size (per lot)	Failure Count															
<b>Reliability and Environmental Tests</b>																		
High Temperature Life	Test temperature: 125 ±3°C Applied voltage: 200% of rated voltage (6.3 VDC - 250 VDC) 150% of rated voltage (500 VDC) Test time: 1,000 + 24/-0 hours Store at room temperature for 24 ±2 hours before measuring electrical properties.	15	0															
Humidity (Damp Heat) Steady State	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/ -0hrs.	15	0															
Humidity (Damp Heat) Load	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/-0 hrs. Applied Voltage : rated voltage Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	15	0															
Temperature Cycle	5 cycles of steps 1 - 4 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Step</th> <th>Temp. (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. operating temp. +0/-3</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room temp</td> <td>2 ~ 3</td> </tr> <tr> <td>3</td> <td>Max. operating temp. +3/-0</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room temp (25°C)</td> <td>2 ~ 3</td> </tr> </tbody> </table> Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	Step	Temp. (°C)	Time (min.)	1	Min. operating temp. +0/-3	30 ± 3	2	Room temp	2 ~ 3	3	Max. operating temp. +3/-0	30 ± 3	4	Room temp (25°C)	2 ~ 3	27	0
Step	Temp. (°C)	Time (min.)																
1	Min. operating temp. +0/-3	30 ± 3																
2	Room temp	2 ~ 3																
3	Max. operating temp. +3/-0	30 ± 3																
4	Room temp (25°C)	2 ~ 3																
<b>Physical, Mechanical, and Process Tests</b>																		
Board Flex	Capacitor is mounted to a substrate which is flexed by means of ram at a rate of 1mm per second until the deflection becomes 1 mm. (Deflection is maintained for 5 ± 1 sec.) Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Terminal Strength	Pressurizing force: 0201 case size: 2N 0402 & 0603 case sizes: 5N 0805 case size: 10N Test time: 10 ± 1 sec.	27	0															
Solderability	Solder temperature: 235 ± 5°C Dipping time: 2 ± 0.5 sec.	12	0															
Resistance to Soldering Heat	Solder temperature: 260 ± 5°C Dipping time: 10 ± 1 sec Preheating: 120 to 150°C for 1 minute before immerse the capacitor in a eutectic solder. Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Vibration Resistance	Vibration frequency: 10 ~ 55 Hz/min. Total amplitude: 1.5mm Test time: 6 hrs. (Two hrs. each in three mutually perpendicular directions.)	12	0															
<b>Qualification Status</b>		<b>APPROVED</b>																
		147	0															

\*RH = Relative Humidity  
 C = Celsius



KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0805, 100pF, 250 VDC  
 Product Family Qualification Lot Id. 114A005514



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
High Temperature Life	Limits	95 - 105	≤ 0.10	≥ 10.00	± 3.00	≤ 0.29	≥ 1.00
	Max	100.910	0.01	515.75	0.01	0.01	317.96
	Min	97.120	0.00	254.04	-0.03	0.01	194.19
	AVG	99.160	0.00	300.15	-0.02	0.01	263.91
	STD	1.180	0.00	72.30	0.01	0.00	30.37
Humidity Steady State	Limits	95 - 105	≤ 0.10	≥ 10.00	± 5.00	≤ 0.29	≥ 1.00
	Max	101.570	0.03	366.07	0.07	0.04	290.53
	Min	97.860	0.01	275.73	0.04	0.01	241.64
	AVG	99.410	0.02	327.51	0.05	0.02	260.16
	STD	1.140	0.00	23.92	0.01	0.01	12.89
Humidity Load	Limits	95 - 105	≤ 0.10	≥ 10.00	± 7.50	≤ 0.50	≥ 0.50
	Max	101.150	0.008	578.31	0.04	0.008	316.81
	Min	97.440	0.002	417.38	0.02	0.002	228.32
	AVG	99.060	0.004	494.62	0.03	0.005	271.04
	STD	1.190	0.002	38.30	0.01	0.002	18.79
Temperature Cycle	Limits	95 - 105	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	102.750	0.02	282.79	0.07	0.07	134.76
	Min	96.370	0.01	202.94	0.01	0.01	120.25
	AVG	99.400	0.02	260.42	0.02	0.02	127.09
	STD	1.160	0.00	13.32	0.01	0.01	4.07

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0805, 100pF, 250 VDC  
 Product Family Qualification Lot Id. 114A005514



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
Resistance to Soldering Heat	Limits	95 - 105	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	100.550	0.007	281.49	-0.01	0.001	265.51
	Min	96.930	0.002	231.15	-0.04	0.001	209.35
	AVG	98.440	0.005	248.55	-0.04	0.001	232.87
	STD	1.020	0.002	15.52	0.01	0.000	17.18

		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR	Capacitance, pF	DF, 1MHz, %	IR
Mechanical Shock / Vibration	Limits	95 - 105	≤ 0.10	N/A	95 - 105	≤ 0.10	N/A
	Max	100.700	0.005	N/A	100.71	0.010	N/A
	Min	95.710	0.001	N/A	95.71	0.001	N/A
	AVG	98.210	0.001	N/A	98.220	0.002	N/A
	STD	1.230	0.002	N/A	1.23	0.003	N/A

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0805, 56pF, 500 VDC  
 Product Family Qualification



		CBR08C560JCGAC																
		111140006064																
Test Performed		Sample Size (per lot)	Failure Count															
<b>Reliability and Environmental Tests</b>																		
High Temperature Life	Test temperature: 125 ±3°C Applied voltage: 200% of rated voltage (6.3 VDC - 250 VDC) 150% of rated voltage (500 VDC) Test time: 1,000 + 24/-0 hours Store at room temperature for 24 ±2 hours before measuring electrical properties.	15	0															
Humidity (Damp Heat) Steady State	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/ -0hrs.	15	0															
Humidity (Damp Heat) Load	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/-0 hrs. Applied Voltage : rated voltage Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	15	0															
Temperature Cycle	5 cycles of steps 1 - 4 <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Step</th> <th>Temp. (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. operating temp. +0/-3</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room temp</td> <td>2 ~ 3</td> </tr> <tr> <td>3</td> <td>Max. operating temp. +3/-0</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room temp (25°C)</td> <td>2 ~ 3</td> </tr> </tbody> </table> Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	Step	Temp. (°C)	Time (min.)	1	Min. operating temp. +0/-3	30 ± 3	2	Room temp	2 ~ 3	3	Max. operating temp. +3/-0	30 ± 3	4	Room temp (25°C)	2 ~ 3	27	0
Step	Temp. (°C)	Time (min.)																
1	Min. operating temp. +0/-3	30 ± 3																
2	Room temp	2 ~ 3																
3	Max. operating temp. +3/-0	30 ± 3																
4	Room temp (25°C)	2 ~ 3																
<b>Physical, Mechanical, and Process Tests</b>																		
Board Flex	Capacitor is mounted to a substrate which is flexed by means of ram at a rate of 1mm per second until the deflection becomes 1 mm. (Deflection is maintained for 5 ± 1 sec.) Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Terminal Strength	Pressurizing force: 0201 case size: 2N 0402 & 0603 case sizes: 5N 0805 case size: 10N Test time: 10 ± 1 sec.	27	0															
Solderability	Solder temperature: 235 ± 5°C Dipping time: 2 ± 0.5 sec.	12	0															
Resistance to Soldering Heat	Solder temperature: 260 ± 5°C Dipping time: 10 ± 1 sec Preheating: 120 to 150°C for 1 minute before immerse the capacitor in a eutectic solder. Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Vibration Resistance	Vibration frequency: 10 ~ 55 Hz/min. Total amplitude: 1.5mm Test time: 6 hrs. (Two hrs. each in three mutually perpendicular directions.)	12	0															
<b>Qualification Status</b>		<b>APPROVED</b>																
		147	0															

\*RH = Relative Humidity  
 C = Celsius



KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0805, 56pF, 500 VDC  
 Product Family Qualification Lot Id. 1111400006064



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
High Temperature Life	Limits	53.2 - 58.8	≤ 0.10	≥ 10.00	± 3.00	≤ 0.29	≥ 1.00
	Max	57.370	0.03	648.60	-0.09	0.05	912.87
	Min	54.970	0.01	496.15	-0.15	0.03	427.13
	AVG	56.100	0.02	574.01	-0.13	0.04	635.66
	STD	0.550	0.01	43.18	0.02	0.00	147.54
Humidity Steady State	Limits	53.2 - 58.8	≤ 0.10	≥ 10.00	± 5.00	≤ 0.29	≥ 1.00
	Max	56.390	0.05	481.50	0.05	0.05	529.70
	Min	53.840	0.04	320.25	0.01	0.04	213.79
	AVG	55.070	0.04	422.84	0.03	0.04	355.07
	STD	0.680	0.00	40.24	0.01	0.00	100.37
Humidity Load	Limits	53.2 - 58.8	≤ 0.10	≥ 10.00	± 7.50	≤ 0.50	≥ 0.50
	Max	56.780	0.050	459.12	0.12	0.050	856.78
	Min	54.360	0.040	293.93	0.01	0.040	233.83
	AVG	55.180	0.005	411.80	0.06	0.050	683.61
	STD	0.660	0.000	43.32	0.03	0.000	176.39
Temperature Cycle	Limits	53.2 - 58.8	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	57.320	0.05	683.47	0.02	0.06	662.96
	Min	55.040	0.03	116.26	-0.02	0.04	135.91
	AVG	56.030	0.04	462.53	0.00	0.05	505.84
	STD	0.610	0.00	157.19	0.01	0.01	112.45

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0805, 56pF, 500 VDC  
 Product Family Qualification Lot Id. 1111400006064



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
Resistance to Soldering Heat	Limits	53.2 - 58.8	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	56.090	0.030	355.18	0.01	0.070	405.88
	Min	53.810	0.020	286.21	-0.05	0.010	347.98
	AVG	54.950	0.030	315.66	-0.03	0.030	378.54
	STD	0.740	0.010	17.21	0.02	0.020	17.86

		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR	Capacitance, pF	DF, 1MHz, %	IR
Mechanical Shock / Vibration	Limits	53.2 - 58.8	≤ 0.10	N/A	53.2 - 58.8	≤ 0.10	N/A
	Max	55.580	0.040	N/A	55.57	0.030	N/A
	Min	53.860	0.000	N/A	53.85	0.000	N/A
	AVG	54.490	0.020	N/A	54.490	0.020	N/A
	STD	0.580	0.010	N/A	0.59	0.010	N/A

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0805, 68pF, 500 VDC  
 Product Family Qualification



		CBR08C560JCGAC																
		111142002941																
Test Performed		Sample Size (per lot)	Failure Count															
<b>Reliability and Environmental Tests</b>																		
High Temperature Life	Test temperature: 125 ±3°C Applied voltage: 200% of rated voltage (6.3 VDC - 250 VDC) 150% of rated voltage (500 VDC) Test time: 1,000 + 24/-0 hours Store at room temperature for 24 ±2 hours before measuring electrical properties.	15	0															
Humidity (Damp Heat) Steady State	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/ -0hrs.	15	0															
Humidity (Damp Heat) Load	Test temperature: 40 ± 2°C Humidity: 90 ~ 95% RH Test time: 500 + 24/-0 hrs. Applied Voltage : rated voltage Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	15	0															
Temperature Cycle	5 cycles of steps 1 - 4 <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Step</th> <th>Temp. (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. operating temp. +0/-3</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room temp</td> <td>2 ~ 3</td> </tr> <tr> <td>3</td> <td>Max. operating temp. +3/-0</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room temp (25°C)</td> <td>2 ~ 3</td> </tr> </tbody> </table> Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	Step	Temp. (°C)	Time (min.)	1	Min. operating temp. +0/-3	30 ± 3	2	Room temp	2 ~ 3	3	Max. operating temp. +3/-0	30 ± 3	4	Room temp (25°C)	2 ~ 3	27	0
Step	Temp. (°C)	Time (min.)																
1	Min. operating temp. +0/-3	30 ± 3																
2	Room temp	2 ~ 3																
3	Max. operating temp. +3/-0	30 ± 3																
4	Room temp (25°C)	2 ~ 3																
<b>Physical, Mechanical, and Process Tests</b>																		
Board Flex	Capacitor is mounted to a substrate which is flexed by means of ram at a rate of 1mm per second until the deflection becomes 1 mm. (Deflection is maintained for 5 ± 1 sec.) Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Terminal Strength	Pressurizing force: 0201 case size: 2N 0402 & 0603 case sizes: 5N 0805 case size: 10N Test time: 10 ± 1 sec.	27	0															
Solderability	Solder temperature: 235 ± 5°C Dipping time: 2 ± 0.5 sec.	12	0															
Resistance to Soldering Heat	Solder temperature: 260 ± 5°C Dipping time: 10 ± 1 sec Preheating: 120 to 150°C for 1 minute before immerse the capacitor in a eutectic solder. Store at room temperature for 24 ± 2 hrs. before measuring electrical properties.	12	0															
Vibration Resistance	Vibration frequency: 10 ~ 55 Hz/min. Total amplitude: 1.5mm Test time: 6 hrs. (Two hrs. each in three mutually perpendicular directions.)	12	0															
<b>Qualification Status</b>		<b>APPROVED</b>																
		147	0															

\*RH = Relative Humidity  
 C = Celsius



KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0805, 68pF, 500 VDC  
 Product Family Qualification Lot Id. 111142002941



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
High Temperature Life	Limits	64.6 - 71.4	≤ 0.10	≥ 10.00	± 3.00	≤ 0.29	≥ 1.00
	Max	70.620	0.06	623.97	0.03	0.05	755.37
	Min	67.950	0.04	366.07	-0.03	0.03	332.74
	AVG	69.620	0.05	449.51	-0.01	0.05	496.68
	STD	0.720	0.00	61.07	0.02	0.01	127.26
Humidity Steady State	Limits	64.6 - 71.4	≤ 0.10	≥ 10.00	± 5.00	≤ 0.29	≥ 1.00
	Max	70.490	0.04	978.13	0.05	0.06	700.46
	Min	67.640	0.03	193.93	0.03	0.04	116.03
	AVG	69.360	0.04	613.36	0.04	0.04	317.60
	STD	0.750	0.00	223.79	0.01	0.01	194.98
Humidity Load	Limits	64.6 - 71.4	≤ 0.10	≥ 10.00	± 7.50	≤ 0.50	≥ 0.50
	Max	70.520	0.050	1228.11	0.05	0.090	9367.33
	Min	68.340	0.030	515.96	0.04	0.030	1015.41
	AVG	69.440	0.040	816.30	0.05	0.040	3659.16
	STD	0.730	0.000	183.46	0.00	0.010	2548.88
Temperature Cycle	Limits	64.6 - 71.4	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	68.300	0.09	550.63	0.09	0.10	544.45
	Min	66.120	0.07	145.34	0.02	0.08	332.56
	AVG	67.410	0.08	338.77	0.07	0.09	411.40
	STD	0.430	0.01	112.36	0.02	0.01	53.92

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KEMET Ceramic Surface Mount Capacitors  
 CBR Series, COG, 0805, 68pF, 500 VDC  
 Product Family Qualification Lot Id. 111142002941



		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR, 25°C, GOhms	Delta Cap, %	DF, 1MHz, %	IR, 25°C, GOhms
Resistance to Soldering Heat	Limits	64.6 - 71.4	≤ 0.10	≥ 10.00	± 2.50	≤ 0.10	≥ 10.00
	Max	67.190	0.060	457.92	-0.02	0.050	464.09
	Min	65.710	0.040	145.68	-0.07	0.040	139.43
	AVG	66.430	0.040	276.43	-0.04	0.040	213.33
	STD	0.430	0.010	108.67	0.01	0.000	103.83

		Initial Readings			Post Test Readings		
		Capacitance, pF	DF, 1MHz, %	IR	Capacitance, pF	DF, 1MHz, %	IR
Mechanical Shock / Vibration	Limits	64.6 - 71.4	≤ 0.10	N/A	64.6 - 71.4	≤ 0.10	N/A
	Max	66.660	0.060	N/A	66.65	0.090	N/A
	Min	65.140	0.040	N/A	65.15	0.040	N/A
	AVG	66.150	0.050	N/A	66.150	0.050	N/A
	STD	0.500	0.010	N/A	0.50	0.010	N/A

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