



# Chilisin Electronics Singapore Pte Ltd

## SMD Ceramic Chip Inductors, CS Series

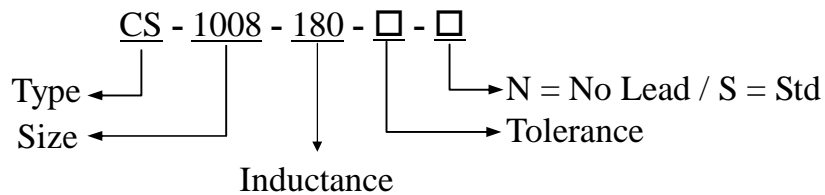


### Feature:

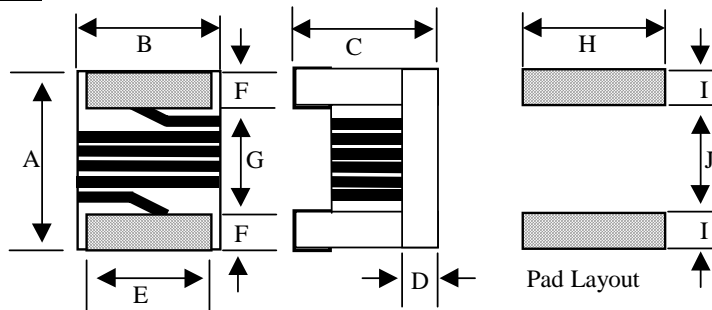


This type of Miniature SMD Ceramic Chip Inductor is specially designed for the needs of today's high frequency related product. These products deliver very high SRF and also Excellent Q factor. With the non-magnetic coil form it's assure utmost temperature stability, predictability and batch consistency.

### Ordering Code:



### Dimension in mm:



Type	A	B	C	D	E	F	G	H	I	J
CS-0402	1.19	0.64	0.66	0.25	0.51	0.23	0.56	0.66	0.36	0.46
CS-0603	1.80	1.12	1.02	0.35	0.76	0.33	0.86	1.02	0.64	0.64
CS-0805	2.29	1.73	1.52	0.50	1.27	0.44	1.02	1.78	1.02	0.76
CS-1008	2.92	2.79	2.03	0.70	2.03	0.51	1.52	2.54	1.02	1.27

### Electrical:

Part Number	Inductance	Current
CS-0402 - Series	1.0nH to 100nH	1360mA to 30mA
CS-0603 - Series	1.6 nH to 390nH	700mA to 100mA
CS-0805 - Series	2.8 nH to 1000nH	800mA to 170mA
CS-1008 - Series	10 nH to 10.0uH	1000mA to 150mA



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### Electrical Characteristics:

Part Number	@ 250 MHz			@ 900MHz		@ 1.7GHz		SRF GHz min	RDC Ω Max	IDC mA Max
	L (nH)	Tol. ± %	Q Min	L(nH) Typ.	Q Typ.	L(nH) Typ.	Q Typ.			
CS-0402-1N0□-N	1.0	10/5	16	1.02	77	1.02	69	12.70	0.045	1360
CS-0402-1N9□-N	1.9	10/5	16	1.72	68	1.74	82	11.30	0.070	1040
CS-0402-2N0□-N	2.0	10/5	16	1.93	54	1.93	75	11.10	0.070	1040
CS-0402-2N2□-N	2.2	10/5	19	2.19	59	2.23	100	10.80	0.070	960
CS-0402-2N4□-N	2.4	10/5	15	2.24	51	2.27	68	10.50	0.068	790
CS-0402-2N7□-N	2.7	10/5	16	2.58	42	2.60	61	10.40	0.120	640
CS-0402-3N3□-N	3.3	10/5	19	3.10	65	3.12	87	7.00	0.066	840
CS-0402-3N6□-N	3.6	10/5	19	3.56	45	3.62	71	6.80	0.066	840
CS-0402-3N9□-N	3.9	10/5	19	3.89	50	4.00	75	6.00	0.066	840
CS-0402-4N3□-N	4.3	10/5	18	4.19	47	4.30	71	6.00	0.091	700
CS-0402-4N7□-N	4.7	10/5	15	4.55	48	4.66	68	4.77	0.130	640
CS-0402-5N1□-N	5.1	10/5	20	5.15	56	5.25	82	4.80	0.083	760
CS-0402-5N6□-N	5.6	10/5	20	5.16	54	5.28	81	4.80	0.083	760
CS-0402-6N2□-N	6.2	10/5	20	6.16	52	6.37	76	4.80	0.083	760
CS-0402-6N8□-N	6.8	10/5	20	6.56	63	6.93	78	4.80	0.083	680
CS-0402-7N5□-N	7.5	10/5	22	7.91	60	8.22	88	4.80	0.100	680
CS-0402-8N2□-N	8.2	10/5	22	8.50	57	8.85	84	4.40	0.100	680
CS-0402-8N7□-N	8.7	10/5	18	8.78	54	9.21	73	4.10	0.200	480
CS-0402-9N0□-N	9.0	10/5	22	9.07	62	9.53	78	4.16	0.100	680
CS-0402-9N5□-N	9.5	10/5	18	9.42	54	9.96	69	4.00	0.200	480
CS-0402-10N□-N	10	10/5	21	9.80	50	10.10	67	3.90	0.200	480
CS-0402-11N□-N	11	10/5	24	10.7	52	11.20	78	3.68	0.120	640
CS-0402-12N□-N	12	10/5	24	11.9	53	12.70	71	3.60	0.120	640
CS-0402-13N□-N	13	10/5	24	13.4	51	14.63	57	3.45	0.210	440
CS-0402-15N□-N	15	10/5	24	14.6	55	15.50	77	3.28	0.170	560
CS-0402-16N□-N	16	10/5	24	15.6	46	18.86	47	3.10	0.220	560
CS-0402-18N□-N	18	10/5	25	18.3	57	20.28	62	3.10	0.230	420
CS-0402-19N□-N	19	10/5	24	19.1	50	21.10	67	3.04	0.20	480
CS-0402-20N□-N	20	10/5	25	20.7	52	23.66	53	3.00	0.25	420
CS-0402-22N□-N	22	10/5	25	23.2	53	26.75	53	2.80	0.30	400
CS-0402-23N□-N	23	10/5	22	23.8	49	26.90	64	2.72	0.30	400
CS-0402-24N□-N	24	10/5	25	25.1	51	29.50	50	2.70	0.30	400
CS-0402-27N□-N	27	10/5	24	28.7	49	33.50	63	2.48	0.30	400
CS-0402-30N□-N	30	10/5	25	31.1	46	38.50	39	2.35	0.30	400
CS-0402-33N□-N	33	10/5	24	34.9	31	41.74	32	2.35	0.40	400
CS-0402-36N□-N	36	10/5	24	39.5	44	48.40	53	2.32	0.44	320
CS-0402-39N□-N	39	10/5	24	39.5	44	48.40	53	2.32	0.44	320
CS-0402-40N□-N	40	10/5	24	39.0	44	47.40	33	2.24	0.55	200
CS-0402-43N□-N	43	10/5	25	45.8	46	61.55	34	2.03	0.44	320
CS-0402-47N□-N	47	10/5	20	50.0	38	-	-	2.10	0.83	150
CS-0402-51N□-N	51	10/5	25	56.6	40	-	-	1.75	0.82	100
CS-0402-56N□-N	56	10/5	22	62.8	42	-	-	1.76	0.97	100
CS-0402-68N□-N	68	10/5	22	78.2	36	-	-	1.62	1.12	100
CS-0402-82N□-N	82	10/5	20	-	-	-	-	1.26	1.55	50
CS-0402-R10□-N	100	10/5	20	-	-	-	-	1.16	2.00	30

Tolerance : G=2% , H=3% , J=5% , K=10%

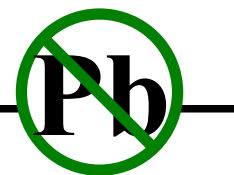
19, Woodlands Industrial Park E1 #03-07 Singapore 757719

Tel : 65 - 68921191 Fax : 65 - 67606760



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## SMD Ceramic Chip Inductors, CS Series



### Electrical Characteristics:

Part Number	L (nH)	Tolerance ±%	Test Freq. MHz	Q min	SRF MHz min	RDC Ω Max	IDC mA max	900MHz		1.7GHz	
								L Typ.	Q Typ.	L Typ.	Q Typ.
CS-0603-1N6-□-N	1.6	10/5	250	24	12500	0.030	700	1.67	49	1.65	63
CS-0603-1N8-□-N	1.8	10/5	250	16	12500	0.043	700	1.63	35	1.66	50
CS-0603-3N6-□-N	3.6	10/5	250	22	5900	0.063	700	3.72	53	3.71	65
CS-0603-3N9-□-N	3.9	10/5	250	22	6900	0.080	700	3.95	49	3.96	67
CS-0603-4N3-□-N	4.3	10/5	250	22	5900	0.063	700	4.32	50	4.33	70
CS-0603-4N7-□-N	4.7	10/5	250	20	5800	0.116	700	4.72	47	4.75	57
CS-0603-5N1-□-N	5.1	10/5	250	20	5700	0.140	700	4.93	47	4.95	56
CS-0603-6N3-□-N	6.3	10/5	250	20	5700	0.140	700	5.5	47	6.1	60
CS-0603-6N8-□-N	6.8	10/5	250	27	5800	0.110	700	6.75	60	7.1	81
CS-0603-7N5-□-N	7.5	10/5	250	28	4800	0.106	700	7.70	60	7.82	65
CS-0603-8N2-□-N	8.2	10/5	250	28	4700	0.109	700	8.30	60	8.50	60
CS-0603-8N7-□-N	8.7	10/5	250	28	4600	0.109	700	8.86	62	9.32	58
CS-0603-9N5-□-N	9.5	10/5	250	28	5400	0.135	700	9.70	59	9.92	61
CS-0603-10N-□-N	10.0	10/5/2	250	31	4800	0.130	700	10	66	10.6	83
CS-0603-11N-□-N	11.0	10/5/2	250	33	4000	0.086	700	11	53	11.5	56
CS-0603-12N-□-N	12.0	10/5/2	250	35	4000	0.130	700	12.3	72	13.5	83
CS-0603-15N-□-N	15.0	10/5/2	250	35	4000	0.170	700	15.4	64	16.8	89
CS-0603-16N-□-N	16.0	10/5/2	250	34	3300	0.104	700	16.2	55	17.3	52
CS-0603-18N-□-N	18.0	10/5/2	250	35	3100	0.170	700	18.7	70	21.4	69
CS-0603-22N-□-N	22.0	10/5/2	250	38	3000	0.190	700	22.8	73	26.1	71
CS-0603-24N-□-N	24.0	10/5/2	250	37	2650	0.135	700	24.5	45	28.7	39
CS-0603-27N-□-N	27.0	10/5/2	250	40	2800	0.220	600	29.2	74	34.6	65
CS-0603-30N-□-N	30.0	10/5/2	250	37	2250	0.144	600	31.4	47	39.9	28
CS-0603-33N-□-N	33.0	10/5/2	250	40	2300	0.220	600	36	67	49.5	42
CS-0603-36N-□-N	36.0	10/5/2	250	38	2080	0.250	600	39.4	47	52.7	24
CS-0603-39N-□-N	39.0	10/5/2	250	40	2200	0.250	600	42.7	60	60.2	40
CS-0603-43N-□-N	43.0	10/5/2	250	39	2000	0.280	600	47	44	64.9	21
CS-0603-47N-□-N	47.0	10/5/2	200	38	2000	0.280	600	52.2	62	77.2	35
CS-0603-56N-□-N	56.0	10/5/2	200	38	1900	0.310	600	62.5	56	97	26
CS-0603-68N-□-N	68.0	10/5/2	200	37	1700	0.340	600	80.5	54	168	21
CS-0603-72N-□-N	72.0	10/5/2	150	34	1700	0.490	400	82	53	135	20
CS-0603-82N-□-N	82.0	10/5/2	150	34	1700	0.540	400	96.2	54	177	21
CS-0603-R10-□-N	100.0	10/5/2	150	34	1400	0.580	400	124	49	-	-
CS-0603-R11-□-N	110.0	10/5/2	150	32	1350	0.610	300	138	43	-	-
CS-0603-R12-□-N	120.0	10/5/2	150	32	1300	0.650	300	165	39	-	-
CS-0603-R15-□-N	150.0	10/5/2	150	28	990	0.920	280	250	25	-	-
CS-0603-R18-□-N	180.0	10/5/2	100	25	990	1.250	240	305	22	-	-
CS-0603-R22-□-N	220.0	10/5/2	100	25	900	1.900	200	-	-	-	-
CS-0603-R27-□-N	270.0	10/5/2	100	24	900	2.800	170	-	-	-	-
CS-0603-R33-□-N	330.0	10/5/2	100	25	900	3.890	100	-	-	-	-
CS-0603-R39-□-N	390.0	10/5/2	100	25	700	4.350	100	-	-	-	-

Tolerance : G=2% , J=5% , K=10%

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### Electrical Characteristic:

Part Number	L (nH)	Tol. ±%	Test Freq. MHz	Q Min	Test Freq. MHz	SRF MHz min	RDC Ω Max	IDC mA Max
CS-0805-2N8-□-N	2.8	10 / 5	250	70	1500	7900	0.06	800
CS-0805-3N0-□-N	3.0	10 / 5	250	65	1500	7900	0.06	800
CS-0805-3N3-□-N	3.3	10 / 5	250	50	1500	7900	0.08	600
CS-0805-6N8-□-N	6.8	10 / 5	250	50	1000	5500	0.11	600
CS-0805-7N5-□-N	7.5	10 / 5	250	50	1000	4500	0.14	600
CS-0805-8N2-□-N	8.2	10 / 5	250	50	1000	4700	0.12	600
CS-0805-10N-□-N	10.0	10/5/2	250	60	500	4200	0.10	600
CS-0805-12N-□-N	12.0	10/5/2	250	50	500	4000	0.15	600
CS-0805-15N-□-N	15.0	10/5/2	250	50	500	3400	0.17	600
CS-0805-18N-□-N	18.0	10/5/2	250	50	500	3300	0.20	600
CS-0805-22N-□-N	22.0	10/5/2	250	55	500	2600	0.22	500
CS-0805-24N-□-N	24.0	10/5/2	250	55	500	2000	0.22	500
CS-0805-27N-□-N	27.0	10/5/2	250	55	500	2500	0.25	500
CS-0805-33N-□-N	33.0	10/5/2	250	60	500	2050	0.27	500
CS-0805-36N-□-N	36.0	10/5/2	250	60	500	1700	0.29	500
CS-0805-39N-□-N	39.0	10/5/2	250	60	500	2000	0.29	500
CS-0805-43N-□-N	43.0	10/5/2	200	60	500	1650	0.34	500
CS-0805-47N-□-N	47.0	10/5/2	200	60	500	1650	0.31	500
CS-0805-56N-□-N	56.0	10/5/2	200	60	500	1550	0.34	500
CS-0805-68N-□-N	68.0	10/5/2	200	60	500	1450	0.38	500
CS-0805-82N-□-N	82.0	10/5/2	150	65	500	1300	0.42	400
CS-0805-91N-□-N	91.0	10/5/2	150	65	500	1200	0.48	400
CS-0805-R10-□-N	100.0	10/5/2	150	65	500	1200	0.46	400
CS-0805-R11-□-N	110.0	10/5/2	150	50	250	1000	0.48	400
CS-0805-R12-□-N	120.0	10/5/2	150	50	250	1100	0.51	400
CS-0805-R15-□-N	150.0	10/5/2	100	50	250	920	0.56	400
CS-0805-R18-□-N	180.0	10/5/2	100	50	250	870	0.64	400
CS-0805-R20-□-N	200.0	10/5/2	100	50	250	860	0.68	400
CS-0805-R22-□-N	220.0	10/5/2	100	50	250	850	0.70	400
CS-0805-R24-□-N	240.0	10/5/2	100	44	250	690	1.00	350
CS-0805-R25-□-N	250.0	10/5/2	100	45	250	660	1.20	350
CS-0805-R27-□-N	270.0	10/5/2	100	48	250	650	1.00	350
CS-0805-R33-□-N	330.0	10/5/2	100	48	250	600	1.40	310
CS-0805-R39-□-N	390.0	10/5/2	100	48	250	560	1.50	290
CS-0805-R47-□-N	470.0	10/5/2	50	33	100	375	1.76	250
CS-0805-R56-□-N	560.0	10/5/2	50	23	50	340	1.90	230
CS-0805-R62-□-N	620.0	10/5/2	50	23	50	220	1.90	230
CS-0805-R68-□-N	680.0	10/5/2	25	23	50	188	2.20	190
CS-0805-R82-□-N	820.0	10/5/2	25	23	50	215	2.35	180
CS-0805-1R0-□-N	1000.0	10/5/2	25	20	50	100	2.50	170

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### Electrical Characteristic:

Part Number	L (nH)	Test Freq. MHz	TOL. ±%	Q Min	Test Freq. MHz	SRF MHz min	RDC Ω Max	IDC mA Max
CS -1008-10N-□-N	10.0	50	10/5/2	50	500	4100	0.08	1000
CS -1008-12N-□-N	12.0	50	10/5/2	50	500	3300	0.09	1000
CS -1008-15N-□-N	15.0	50	10/5/2	50	500	2500	0.10	1000
CS -1008-18N-□-N	18.0	50	10/5/2	50	350	2500	0.11	1000
CS -1008-22N-□-N	22.0	50	10/5/2	55	350	2400	0.12	1000
CS -1008-27N-□-N	27.0	50	10/5/2	55	350	1600	0.13	1000
CS -1008-33N-□-N	33.0	50	10/5/2	60	350	1600	0.14	1000
CS -1008-39N-□-N	39.0	50	10/5/2	60	350	1500	0.15	1000
CS -1008-47N-□-N	47.0	50	10/5/2	65	350	1500	0.16	1000
CS -1008-56N-□-N	56.0	50	10/5/2	65	350	1300	0.18	1000
CS -1008-68N-□-N	68.0	50	10/5/2	65	350	1300	0.20	1000
CS -1008-82N-□-N	82.0	50	10/5/2	60	350	1000	0.22	1000
CS -1008-R10-□-N	100.0	25	10/5/2	60	350	1000	0.56	650
CS -1008-R12-□-N	120.0	25	10/5/2	60	350	950	0.63	650
CS -1008-R15-□-N	150.0	25	10/5/2	45	100	850	0.70	580
CS -1008-R18-□-N	180.0	25	10/5/2	45	100	750	0.77	620
CS -1008-R22-□-N	220.0	25	10/5/2	45	100	700	0.84	500
CS -1008-R27-□-N	270.0	25	10/5/2	45	100	600	0.91	500
CS -1008-R33-□-N	330.0	25	10/5/2	45	100	570	1.05	450
CS -1008-R39-□-N	390.0	25	10/5/2	45	100	500	1.12	470
CS -1008-R47-□-N	470.0	25	10/5/2	45	100	450	1.19	470
CS -1008-R56-□-N	560.0	25	10/5/2	45	100	415	1.33	400
CS -1008-R62-□-N	620.0	25	10/5/2	45	100	375	1.40	300
CS -1008-R68-□-N	680.0	25	10/5/2	45	100	375	1.47	400
CS -1008-R75-□-N	750.0	25	10/5/2	45	100	360	1.54	360
CS -1008-R82-□-N	820.0	25	10/5/2	45	100	350	1.61	400
CS -1008-R91-□-N	910.0	25	10/5/2	35	50	320	1.68	380
CS -1008-1R0-□-N	1000.0	25	10/5/2	35	50	220	1.75	370
CS -1008-1R2-□-N	1200.0	7.9	10/5/2	35	50	186	2.00	310
CS -1008-1R5-□-N	1500.0	7.9	10/5/2	28	50	200	2.30	330
CS -1008-1R8-□-N	1800.0	7.9	10/5/2	25	50	170	2.60	300
CS -1008-2R2-□-N	2200.0	7.9	10/5/2	20	50	110	2.80	280
CS -1008-2R7-□-N	2700.0	7.9	10/5/2	15	25	140	3.20	290
CS -1008-3R3-□-N	3300.0	7.9	10/5/2	15	25	100	3.40	290
CS -1008-3R9-□-N	3900.0	7.9	10/5/2	15	25	100	3.60	260
CS -1008-4R7-□-N	4700.0	7.9	10/5/2	13	25	90	4.00	260
CS -1008-5R6-□-N	5600.0	7.9	10/5/2	16	7.9	20	4.0	240
CS -1008-6R8-□-N	6800.0	7.9	10/5/2	18	7.9	40	4.9	200
CS -1008-8R2-□-N	8200.0	7.9	10/5/2	18	7.9	25	6.0	170
CS -1008-100-□-N	10000.0	2.52	10/5/2	18	7.9	25	8.0	150

Tolerance : G=2% , J=5% , K=10%

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# Chilisin Electronics Singapore Pte Ltd

## SMD Ceramic Chip Inductors, CS Series



### Mechanical Performances:

No	Item	Specification	Test Condition
1.	Vibration Test (Low frequency)	1. Appearance – No damage 2. Inductance – within $\pm 10$ of initial value 3. Q Changes – within $\pm 30$ of initial value	1. Test Device should be Soldered on Substrate 2. Oscillation Freq – 10 to 55 to 10Hz for 1 min 3. Amplitude – 1.5mm 4. Time – 2 Hrs for each axis (X,Y,Z) Total 6 Hrs
2	Resistance to Soldering Heat	Appearance – No Damage	1. Pre-Heat - 150°C, 1 min 2. Solder – H63A (Eutectic Solder) 3. Soldering Temperature - 260°C $\pm$ 5°C 4. Immersion Time – 10 $\pm$ 1 sec
3	Solderability	Electrodes Shall be at least 90% covered with new solder	1. Pre-Heat - 150°C, 1 min 2. Solder – H63A (Eutectic Solder) 3. Soldering Temperature - 230°C $\pm$ 5°C 4. Immersion Time – 4 $\pm$ 1 sec
4	Terminal Strength (Push Test)	Components must withstand the minimum force of 5N(0.51kg F)	Device should be solder on Copper substrate. A force gauge is applied to the side of the component. Device must withstand a minimum force stated.

### Environmental Performances:

No	Item	Specification	Test Condition															
1	Temperature Cycle	Appearance : No Damage Inductance : $\Delta$ Within +/- 10% of initial value Q factor : $\Delta$ Within +/- 30% of initial value.	One Cycle: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature. (°C)</th> <th>Time(min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25 <math>\pm</math> 3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25 <math>\pm</math> 2</td> <td>15</td> </tr> <tr> <td>3</td> <td>85 <math>\pm</math> 3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25 <math>\pm</math> 3</td> <td>15</td> </tr> </tbody> </table> Total : 5 Cycles	Step	Temperature. (°C)	Time(min)	1	-25 $\pm$ 3	30	2	25 $\pm$ 2	15	3	85 $\pm$ 3	30	4	25 $\pm$ 3	15
Step	Temperature. (°C)		Time(min)															
1	-25 $\pm$ 3		30															
2	25 $\pm$ 2		15															
3	85 $\pm$ 3		30															
4	25 $\pm$ 3	15																
2.	Humidity Resistance	Temperature : 125°C $\pm$ 3°C Relative Humidity : 90% ~ 95% Time : 100 Hrs Measured after exposure in room condition = 24hrs																
3	High Temperature Resistance	Temperature : 125°C $\pm$ 3°C Time : 50 Hrs Measured after exposure in room condition = 24hrs																
4	Low Temperature Resistance	Temperature : -40°C $\pm$ 3°C Time : 50 Hrs Measured after exposure in room condition = 24hrs																
5	High Temperature Load Life	Device should have no evidence of Open or short circuit	Temperature : 85°C $\pm$ 3°C Loaded : Rated DC current Duration: 1000 Hrs															

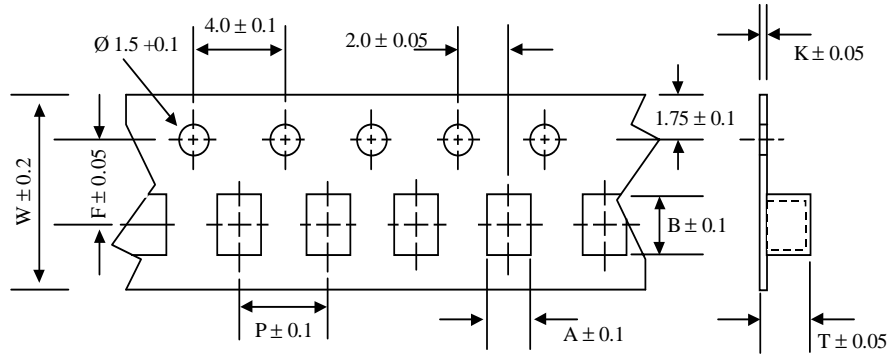


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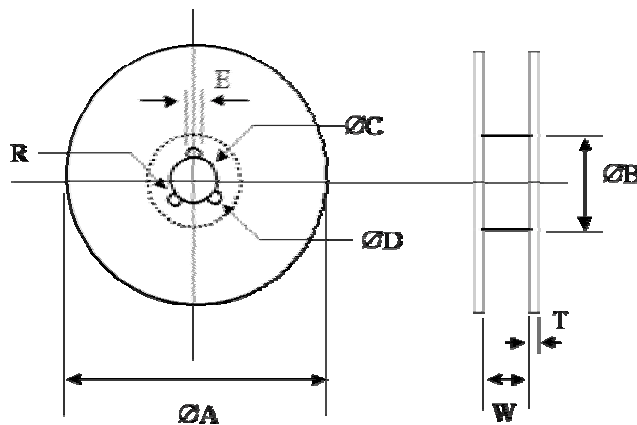
## SMD Ceramic Chip Inductors, CS Series



**Packaging:**



Type	A	B	K	W	P	F	T	Qty / Reel
CS-0402	0.6	1.25	-	8.0	2.0	3.5	0.8	2000
CS-0603	1.15	1.83	0.23	8.0	4.0	3.5	0.92	4000
CS-0805	1.85	2.45	0.23	8.0	4.0	3.5	1.45	2500
CS-1008	2.70	2.95	0.23	8.0	4.0	3.5	2.25	2000



ØA	ØB	ØC	ØD	E	W	T	R
178 ± 2	60 ± 1	13.0 ± 0.5	21.0 ± 0.8	2.0 ± 0.5	10.0 ± 1.0	2.0 ± 0.5	1.0

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