

## CS Series



Due to technical expertise of accurately winding skill, these chip inductors are designed as filtering, impedance matching, resonance and choke circuits for RF designer. The stand series as well as customer design to meet your needs of telecom & wireless products.

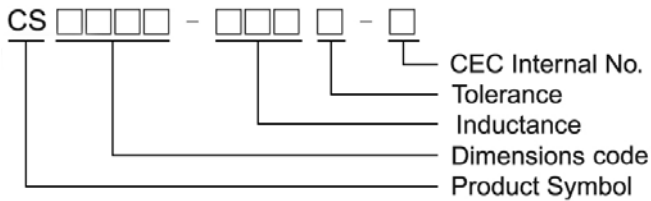
### Features

- RoHS Compliant
- Ceramic body and wire wound construction provide high SRFs.
- These ultra – compact inductors provided exceptional Q values, even at high frequencies.
- Their ceramic construction delivers the highest possible SRFs as well as excellent Q values.
- The non-magnetic coil form also assures the utmost in thermal stability, predictability and batch consistency.
- CS series is standard parts for RF designers.

### Applications

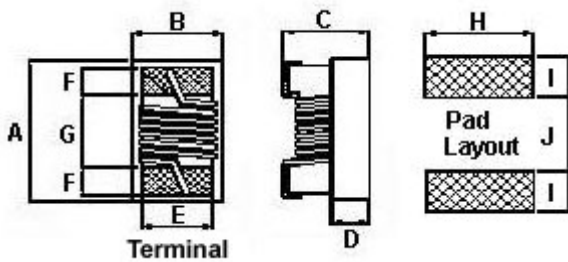
RF products for cellular phone, GPS receiver, Base Station, Repeater, Wireless LAN/ Mouse/ Keyboard/ earphone, remote control, security system and other RF modules.

### Product Identification

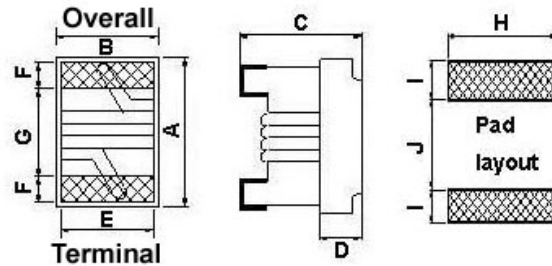


### Shapes and Dimensions / Recommended Pattern

#### CS0402



#### CS0603/0805/1008



Dimensions

		A Max	B Max	C Max	D	E	F	G	H	I	J
CS0402	inch	0.047	0.028	0.026	0.010	0.020	0.009	0.022	0.026	0.014	0.018
	mm	1.19	0.70	0.66	0.25	0.51	0.23	0.56	0.66	0.36	0.46
CS0805	inch	0.093	0.068	0.06	0.028	0.050	0.020	0.040	0.070	0.040	0.030
	mm	2.35	1.73	1.52	0.71	1.27	0.51	1.02	1.78	1.02	0.76
CS1008	inch	0.115	0.110	0.083	0.046	0.080	0.020	0.060	0.100	0.040	0.050
	mm	2.92	2.79	2.1	1.16	2.03	0.51	1.52	2.54	1.02	1.27
		A	B	C	D	E	F	G	H	I	J
CS0603	mm	1.6 <sup>+0.2</sup> <sub>-0.1</sub>	1.02±0.1	0.82 <sup>+0.2</sup> <sub>-0.1</sub>	0.51	0.76	0.33	0.86	1.02	0.64	0.64

## Electrical Characteristics

Part Number	Inductance (nH)	Tolerance (±%)	Q Min	900MHz		1.7GHz		SRF (GHz) Min	Rdc (Ω) Max	I <sub>rms</sub> (mA) Max
				L Typ	Q Typ	L Typ	Q Typ			
CS0402-1N0□-S	1.0	10 / 5	16	1.02	77	1.02	69	12.70	0.045	1360
CS0402-1N9□-S	1.9	10 / 5	16	1.72	68	1.74	82	11.30	0.070	1040
CS0402-2N0□-S	2.0	10 / 5	16	1.93	54	1.93	75	11.10	0.070	1040
CS0402-2N2□-S	2.2	10 / 5	19	2.19	59	2.23	100	10.80	0.070	960
CS0402-2N4□-S	2.4	10 / 5	15	2.24	51	2.27	68	10.50	0.068	790
CS0402-2N7□-S	2.7	10 / 5	16	2.58	42	2.60	61	10.40	0.120	640
CS0402-3N3□-S	3.3	10 / 5	19	3.10	65	3.12	87	7.00	0.066	840
CS0402-3N6□-S	3.6	10 / 5	19	3.56	45	3.62	71	6.80	0.066	840
CS0402-3N9□-S	3.9	10 / 5	19	3.89	50	4.00	75	6.00	0.066	840
CS0402-4N3□-S	4.3	10 / 5	18	4.19	47	4.30	71	6.00	0.091	700
CS0402-4N7□-S	4.7	10 / 5	15	4.55	48	4.68	68	4.77	0.130	640
CS0402-5N1□-S	5.1	10 / 5	20	5.15	56	5.25	82	4.80	0.083	800
CS0402-5N6□-S	5.6	10 / 5	20	5.16	54	5.28	81	4.80	0.083	760
CS0402-6N2□-S	6.2	10 / 5	20	6.16	52	6.37	76	4.80	0.083	760
CS0402-6N8□-S	6.8	10 / 5	20	6.56	63	6.93	78	4.80	0.083	680
CS0402-7N5□-S	7.5	10 / 5	22	7.91	60	8.22	88	4.80	0.10	680
CS0402-8N2□-S	8.2	10 / 5	22	8.50	57	8.85	84	4.40	0.10	680
CS0402-8N7□-S	8.7	10 / 5	18	8.78	54	9.21	73	4.10	0.20	480
CS0402-9N0□-S	9.0	10 / 5	22	9.07	62	9.53	78	4.16	0.10	680
CS0402-9N5□-S	9.5	10 / 5	18	9.42	54	9.98	69	4.00	0.20	480
CS0402-10N□-S	10	10 / 5	21	9.8	50	10.10	67	3.90	0.20	480
CS0402-11N□-S	11	10 / 5	24	10.7	52	11.20	78	3.68	0.12	640
CS0402-12N□-S	12	10 / 5	24	11.9	53	12.70	71	3.60	0.12	640
CS0402-13N□-S	13	10 / 5	24	13.4	51	14.63	57	3.45	0.21	440
CS0402-15N□-S	15	10 / 5	24	14.6	55	15.50	77	3.28	0.17	560
CS0402-16N□-S	16	10 / 5	24	16.6	46	18.86	47	3.10	0.22	560
CS0402-18N□-S	18	10 / 5	25	18.3	57	20.28	62	3.10	0.23	420
CS0402-19N□-S	19	10 / 5	24	19.1	50	21.10	67	3.04	0.20	480
CS0402-20N□-S	20	10 / 5	25	20.7	52	23.66	53	3.00	0.25	420
CS0402-22N□-S	22	10 / 5	25	23.2	53	26.75	53	2.80	0.30	400
CS0402-23N□-S	23	10 / 5	22	23.8	49	26.90	64	2.72	0.30	400
CS0402-24N□-S	24	10 / 5	25	25.1	51	29.50	50	2.70	0.30	400
CS0402-27N□-S	27	10 / 5	24	28.7	49	33.50	63	2.48	0.30	400
CS0402-30N□-S	30	10 / 5	25	31.1	46	38.50	39	2.35	0.35	400
CS0402-33N□-S	33	10 / 5	24	34.9	31	41.74	32	2.35	0.40	400
CS0402-36N□-S	36	10 / 5	24	39.5	44	48.40	53	2.32	0.44	320
CS0402-39N□-S	39	10 / 5	25	41.7	47	50.23	45	2.10	0.55	200
CS0402-40N□-S	40	10 / 5	24	39.0	44	47.40	33	2.24	0.65	320
CS0402-43N□-S	43	10 / 5	25	45.8	46	61.55	34	2.03	0.81	100
CS0402-47N□-S	47	10 / 5	20	50.0	38	-	-	2.10	0.83	150
CS0402-51N□-S	51	10 / 5	25	56.6	40	-	-	1.75	0.82	100
CS0402-56N□-S	56	10 / 5	22	62.8	42	-	-	1.76	0.97	100
CS0402-68N□-S	68	10 / 5	22	78.2	36	-	-	1.62	1.12	100
CS0402-82N□-S	82	10 / 5	20	-	-	-	-	1.26	1.55	50
CS0402-R10□-S	100	10 / 5	20	-	-	-	-	1.16	2.00	30

- When ordering, please specify tolerance and packaging codes.
- Tolerance : J = ±5% , K = ±10%
- L , Q : Agilent/HP4291A+Agilent/HP16197A @250MHz
- SRF : Agilent/HP8753D / Agilent/HP8722ES
- Rdc : CH502BC/HP4338B
- I<sub>rms</sub> for a 15°C rise above 25°C ambient.

## Electrical Characteristics

Part Number	Inductance (nH)	Test Frequency (MHz)	Tolerance (±%)	Q Min	SRF (MHz) Min	Rdc (Ω) Max	I <sub>rms</sub> (mA) Max	900 MHz		1.7 GHz		Color
								L Typ	Q Typ	L Typ	Q Typ	
CS0603-1N6□-S	1.6	250	10 / 5	24	12500	0.030	700	1.67	49	1.65	63	Red
CS0603-1N8□-S	1.8	250	10 / 5	16	12500	0.045	700	1.63	35	1.66	50	Black
CS0603-3N6□-S	3.6	250	10 / 5	22	5900	0.063	700	3.72	53	3.71	65	Red
CS0603-3N9□-S	3.9	250	10 / 5	22	6900	0.080	700	3.95	49	3.96	67	Brown
CS0603-4N3□-S	4.3	250	10 / 5	22	5900	0.063	700	4.32	50	4.33	70	Orange
CS0603-4N7□-S	4.7	250	10 / 5	20	5800	0.116	700	4.72	47	4.75	57	Violet
CS0603-5N1□-S	5.1	250	10 / 5	20	5700	0.140	700	4.93	47	4.95	56	Green
CS0603-5N6□-S	5.6	250	10 / 5	20	5800	0.170	700	5.53	56	5.86	77	Yellow
CS0603-6N3□-S	6.3	250	10 / 5	20	5700	0.140	700	5.50	47	6.10	60	White
CS0603-6N8□-S	6.8	250	10 / 5	27	5800	0.110	700	6.75	60	7.10	81	Red
CS0603-7N5□-S	7.5	250	10 / 5	28	4800	0.106	700	7.70	60	7.82	65	Brown
CS0603-8N2□-S	8.2	250	10 / 5	28	4700	0.109	700	8.30	60	8.50	60	White
CS0603-8N7□-S	8.7	250	10 / 5	28	4600	0.109	700	8.86	62	9.32	58	Yellow
CS0603-9N5□-S	9.5	250	10 / 5	28	5400	0.135	700	9.70	59	9.92	61	Blue
CS0603-10N□-S	10	250	10 / 5 / 2	31	4800	0.130	700	10.0	66	10.6	83	Orange
CS0603-11N□-S	11	250	10 / 5 / 2	33	4000	0.086	700	11.0	53	11.5	56	Gray
CS0603-12N□-S	12	250	10 / 5 / 2	35	4000	0.130	700	12.3	72	13.5	83	Yellow
CS0603-15N□-S	15	250	10 / 5 / 2	35	4000	0.170	700	15.4	64	16.8	89	Green
CS0603-16N□-S	16	250	10 / 5 / 2	34	3300	0.104	700	16.2	55	17.3	52	White
CS0603-18N□-S	18	250	10 / 5 / 2	35	3100	0.170	700	18.7	70	21.4	69	Blue
CS0603-22N□-S	22	250	10 / 5 / 2	38	3000	0.190	700	22.8	73	26.1	71	Violet
CS0603-24N□-S	24	250	10 / 5 / 2	37	2650	0.135	700	24.5	45	28.7	39	Black
CS0603-27N□-S	27	250	10 / 5 / 2	40	2800	0.220	600	29.2	74	34.6	65	Gray
CS0603-30N□-S	30	250	10 / 5 / 2	37	2250	0.144	600	31.4	47	39.9	28	Brown
CS0603-33N□-S	33	250	10 / 5 / 2	40	2300	0.220	600	36	67	49.5	42	White
CS0603-36N□-S	36	250	10 / 5 / 2	38	2080	0.250	600	39.4	47	52.7	24	Red
CS0603-39N□-S	39	250	10 / 5 / 2	40	2200	0.250	600	42.7	60	60.2	40	Black
CS0603-43N□-S	43	250	10 / 5 / 2	39	2000	0.280	600	47	44	64.9	21	Orange
CS0603-47N□-S	47	200	10 / 5 / 2	38	2000	0.280	600	52.2	62	77.2	35	Brown
CS0603-56N□-S	56	200	10 / 5 / 2	38	1900	0.310	600	62.5	56	97	26	Red
CS0603-68N□-S	68	200	10 / 5 / 2	37	1700	0.340	600	80.5	54	168	21	Orange
CS0603-72N□-S	72	150	10 / 5 / 2	34	1700	0.490	400	82	53	135	20	Yellow
CS0603-82N□-S	82	150	10 / 5 / 2	34	1700	0.540	400	96.2	54	177	21	Green
CS0603-R10□-S	100	150	10 / 5 / 2	34	1400	0.580	400	124	49	-	-	Blue
CS0603-R11□-S	110	150	10 / 5 / 2	32	1350	0.610	300	138	43	-	-	Violet
CS0603-R12□-S	120	150	10 / 5 / 2	32	1300	0.750	300	166	39	-	-	Gray
CS0603-R15□-S	150	150	10 / 5 / 2	28	990	0.920	280	250	25	-	-	White
CS0603-R18□-S	180	100	10 / 5 / 2	25	990	1.250	240	305	22	-	-	Black
CS0603-R22□-S	220	100	10 / 5 / 2	25	900	2.100	200	-	-	-	-	Brown
CS0603-R27□-S	270	100	10 / 5 / 2	24	900	2.800	170	-	-	-	-	Red
CS0603-R33□-S	330	100	10 / 5 / 2	25	900	3.890	100	-	-	-	-	Orange
CS0603-R39□-S	390	100	10 / 5 / 2	25	900	4.350	100	-	-	-	-	Yellow

- When ordering, please specify tolerance and packaging codes.
- Tolerance : G = ±2% , J = ±5% , K = ±10%
- Packaging: Clear tape and reel {standard}.
- L /Q: Agilent/HP4291A+ Agilent/HP16197A
- SRF: HP8753D/ HP4291A
- RDC: CH502BC/HP4338B
- I<sub>rms</sub> for a 15°C rise above 25°C ambient.
- Operating temperature range from -40°C to 125°C . (Including self - temperature rise)

## Electrical Characteristics

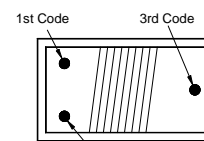
Part Number	Inductance (nH)	Test Frequency (MHz)	Tolerance (±%)	Q Min	Test Frequency (MHz)	SRF (MHz) Min	Rdc (Ω) Max	Irms (mA) Max	Color
CS0805-2N8□-S	2.8	250	10 / 5	80	1500	7900	0.06	800	Gray
CS0805-3N0□-S	3.0	250	10 / 5	65	1500	7900	0.06	800	White
CS0805-3N3□-S	3.3	250	10 / 5	50	1500	7900	0.08	600	Black
CS0805-5N6□-S	5.6	250	10 / 5	65	1000	5500	0.08	600	Orange
CS0805-6N8□-S	6.8	250	10 / 5	50	1000	5500	0.11	600	Brown
CS0805-7N5□-S	7.5	250	10 / 5	50	1000	4500	0.14	600	Green
CS0805-8N2□-S	8.2	250	10 / 5	50	1000	4700	0.12	600	Red
CS0805-10N□-S	10	250	10 / 5 / 2	60	500	4200	0.10	600	Blue
CS0805-12N□-S	12	250	10 / 5 / 2	50	500	4000	0.15	600	Orange
CS0805-15N□-S	15	250	10 / 5 / 2	50	500	3400	0.17	600	Yellow
CS0805-18N□-S	18	250	10 / 5 / 2	50	500	3300	0.20	600	Green
CS0805-22N□-S	22	250	10 / 5 / 2	55	500	2600	0.22	500	Blue
CS0805-24N□-S	24	250	10 / 5 / 2	50	500	2000	0.22	500	Gray
CS0805-27N□-S	27	250	10 / 5 / 2	55	500	2500	0.25	500	Violet
CS0805-33N□-S	33	250	10 / 5 / 2	60	500	2050	0.27	500	Gray
CS0805-36N□-S	36	250	10 / 5 / 2	55	500	1700	0.27	500	Orange
CS0805-39N□-S	39	250	10 / 5 / 2	60	500	2000	0.29	500	White
CS0805-43N□-S	43	200	10 / 5 / 2	60	500	1650	0.34	500	Yellow
CS0805-47N□-S	47	200	10 / 5 / 2	60	500	1650	0.31	500	Black
CS0805-56N□-S	56	200	10 / 5 / 2	60	500	1550	0.34	500	Brown
CS0805-68N□-S	68	200	10 / 5 / 2	60	500	1450	0.38	500	Red
CS0805-82N□-S	82	150	10 / 5 / 2	65	500	1300	0.42	400	Orange
CS0805-91N□-S	91	150	10 / 5 / 2	65	500	1200	0.48	400	Black
CS0805-R10□-S	100	150	10 / 5 / 2	65	500	1200	0.46	400	Yellow
CS0805-R11□-S	110	150	10 / 5 / 2	50	250	1000	0.48	400	Brown
CS0805-R12□-S	120	150	10 / 5 / 2	50	250	1100	0.51	400	Green
CS0805-R15□-S	150	100	10 / 5 / 2	50	250	920	0.56	400	Blue
CS0805-R18□-S	180	100	10 / 5 / 2	50	250	870	0.64	400	Violet
CS0805-R20□-S	200	100	10 / 5 / 2	50	250	860	0.68	400	Red
CS0805-R22□-S	220	100	10 / 5 / 2	50	250	850	0.70	400	Gray
CS0805-R24□-S	240	100	10 / 5 / 2	44	250	690	1.00	350	Red
CS0805-R25□-S	250	100	10 / 5 / 2	45	250	660	1.20	350	Yellow
CS0805-R27□-S	270	100	10 / 5 / 2	48	250	650	1.00	350	White
CS0805-R33□-S	330	100	10 / 5 / 2	48	250	600	1.40	310	Black
CS0805-R39□-S	390	100	10 / 5 / 2	48	250	560	1.50	290	Brown
CS0805-R47□-S	470	50	10 / 5 / 2	33	100	375	1.76	250	Violet
CS0805-R56□-S	560	25	10 / 5 / 2	23	50	340	1.90	230	Orange
CS0805-R62□-S	620	25	10 / 5 / 2	23	50	220	2.20	210	Yellow
CS0805-R68□-S	680	25	10 / 5 / 2	23	50	188	2.20	190	Green
CS0805-R82□-S	820	25	10 / 5 / 2	23	50	215	2.35	180	Blue
CS0805-1R0□-S	1000	25	10 / 5 / 2	20	50	100	2.50	170	Gray
CS0805-1R2□-S	1200	7.9	10 / 5 / 2	18	25	100	2.50	170	White

- When ordering, please specify tolerance and packaging codes.
- Tolerance : G = ±2% , J = ±5% , K = ±10%
- L/Q: Agilent/HP4291A+Agilent/HP16197A
- SRF: Agilent/HP8753D / Agilent/HP4291A
- RDC: CH502BC/HP4338B
- Irms for a 15°C rise above 25°C ambient.
- Operating temperature range from -40°C to 125°C. (Including self - temperature rise)

## Electrical Characteristics

Part Number	Inductance (nH)	Test Frequency (MHz)	Tolerance (±%)	Q Min	Test Frequency (MHz)	SRF (MHz) Min	Rdc (Ω) Max	Irms (mA) Max	Color Coding		
									1 <sup>ST</sup>	2 <sup>ND</sup>	3 <sup>RD</sup>
CS1008-10N□-S	10	50	10 / 5 / 2	50	500	4100	0.08	1000	Brown	Black	Black
CS1008-12N□-S	12	50	10 / 5 / 2	50	500	3300	0.09	1000	Brown	Red	Black
CS1008-15N□-S	15	50	10 / 5 / 2	50	500	2500	0.10	1000	Brown	Green	Black
CS1008-18N□-S	18	50	10 / 5 / 2	50	350	2500	0.11	1000	Brown	Gray	Black
CS1008-22N□-S	22	50	10 / 5 / 2	55	350	2400	0.12	1000	Red	Red	Black
CS1008-27N□-S	27	50	10 / 5 / 2	55	350	1600	0.13	1000	Red	Violet	Black
CS1008-33N□-S	33	50	10 / 5 / 2	60	350	1600	0.14	1000	Orange	Orange	Black
CS1008-39N□-S	39	50	10 / 5 / 2	60	350	1500	0.15	1000	Orange	White	Black
CS1008-47N□-S	47	50	10 / 5 / 2	65	350	1500	0.16	1000	Yellow	Violet	Black
CS1008-56N□-S	56	50	10 / 5 / 2	65	350	1300	0.18	1000	Green	Blue	Black
CS1008-68N□-S	68	50	10 / 5 / 2	65	350	1300	0.20	1000	Blue	Gray	Black
CS1008-82N□-S	82	50	10 / 5 / 2	60	350	1000	0.22	1000	Gray	Red	Black
CS1008-R10□-S	100	25	10 / 5 / 2	60	350	1000	0.56	650	Brown	Black	Brown
CS1008-R12□-S	120	25	10 / 5 / 2	60	350	950	0.63	650	Brown	Red	Brown
CS1008-R15□-S	150	25	10 / 5 / 2	45	100	850	0.70	580	Brown	Green	Brown
CS1008-R18□-S	180	25	10 / 5 / 2	45	100	750	0.77	620	Brown	Gray	Brown
CS1008-R22□-S	220	25	10 / 5 / 2	45	100	700	0.84	500	Red	Red	Brown
CS1008-R27□-S	270	25	10 / 5 / 2	45	100	600	0.91	500	Red	Violet	Brown
CS1008-R33□-S	330	25	10 / 5 / 2	45	100	570	1.05	450	Orange	Orange	Brown
CS1008-R39□-S	390	25	10 / 5 / 2	45	100	500	1.12	470	Orange	White	Brown
CS1008-R47□-S	470	25	10 / 5 / 2	45	100	450	1.19	470	Yellow	Violet	Brown
CS1008-R56□-S	560	25	10 / 5 / 2	45	100	415	1.33	400	Green	Blue	Brown
CS1008-R62□-S	620	25	10 / 5 / 2	45	100	375	1.40	300	Blue	Red	Brown
CS1008-R68□-S	680	25	10 / 5 / 2	45	100	375	1.47	400	Blue	Gray	Brown
CS1008-R75□-S	750	25	10 / 5 / 2	45	100	360	1.54	360	Violet	Green	Brown
CS1008-R82□-S	820	25	10 / 5 / 2	45	100	350	1.61	400	Gray	Red	Brown
CS1008-R91□-S	910	25	10 / 5 / 2	35	50	320	1.68	380	White	Brown	Brown
CS1008-1R0□-S	1000	25	10 / 5 / 2	35	50	290	1.75	370	Brown	Black	Red
CS1008-1R2□-S	1200	7.9	10 / 5 / 2	35	50	250	2.0	310	Brown	Red	Red
CS1008-1R5□-S	1500	7.9	10 / 5 / 2	28	50	200	2.3	330	Brown	Green	Red
CS1008-1R8□-S	1800	7.9	10 / 5 / 2	28	50	160	2.6	300	Brown	Gray	Red
CS1008-2R2□-S	2200	7.9	10 / 5 / 2	28	50	160	2.8	280	Red	Red	Red
CS1008-2R7□-S	2700	7.9	10 / 5 / 2	22	25	140	3.2	290	Red	Violet	Red
CS1008-3R3□-S	3300	7.9	10 / 5 / 2	22	25	110	3.4	290	Orange	Orange	Red
CS1008-3R9□-S	3900	7.9	10 / 5 / 2	20	25	100	3.6	260	Orange	White	Red
CS1008-4R7□-S	4700	7.9	10 / 5 / 2	20	25	90	4.0	260	Yellow	Violet	Red
CS1008-5R6□-S	5600	7.9	10 / 5 / 2	18	7.9	45	4.0	240	Green	Blue	Red
CS1008-6R8□-S	6800	7.9	10 / 5 / 2	18	7.9	40	4.9	200	Blue	Gray	Red
CS1008-8R2□-S	8200	7.9	10 / 5 / 2	18	7.9	25	6.0	170	Gray	Red	Red
CS1008-100□-S	10000	2.52	10 / 5 / 2	18	7.9	25	8.0	150	Brown	Black	Orange

- When ordering, please specify tolerance and packaging codes.
- Tolerance : G = ±2% , J = ±5% , K = ±10%
- Packaging: Clear tape and reel {standard}
- L/Q: Agilent/HP4291A+ Agilent/HP16197A
- SRF: Agilent/HP8753D / Agilent/HP4291A
- RDC: CH502BC/HP4338B
- Irms for a 15°C rise above 25°C ambient.
- Operating temperature range from -40°C to 125°C . (Including self - temperature rise)
- Inductance would be correct Chilisin standard piece.

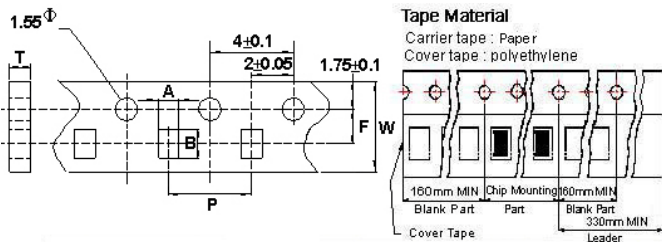


**COLOR CODING**

## Packaging Specifications

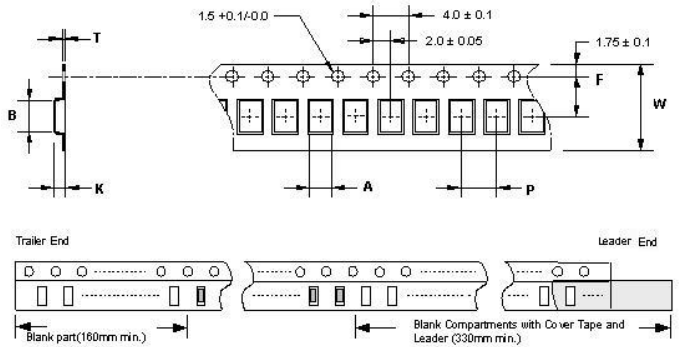
Tape Dimensions

Figure 1

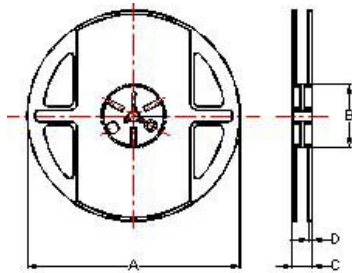


Tape Dimensions

Figure 2



Reel Dimensions



## Dimensions in mm

TYPE	Fig.	Tape Dimensions							Reel Dimensions				Quantity PCS / Reel
		A	B	T	W	P	F	K	A	B	C	D	
CS0402	1	0.75	1.23	0.53	8	2	3.5	-	178	60	12	1.5	4000
CS0603	1	1.16	1.85	0.95	8	4	3.5	-	178	60	12	1.5	4000
CS0805	2	1.85	2.45	0.23	8	4	3.5	1.45	178	60	12	1.5	2000
CS1008	2	2.80	2.95	0.23	8	4	3.5	2.20	178	60	12	1.5	2000