

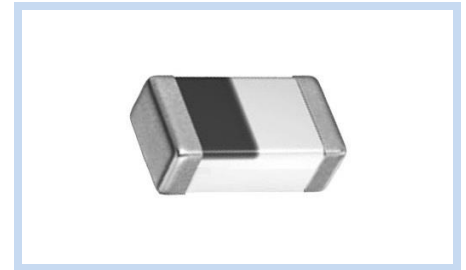
SMD Ceramic Chip Inductor High Frequency Type

SIM01-C11 Series

MERITEK

FEATURE

- High Frequency Application Range up to 10GHz
- Small Size and Low Profile
- Excellent Solderability and Heat Resistance
- Applications: RF and Wireless Communication, Information Technology Equipment, Radar Detectors, Automotive Electronics.



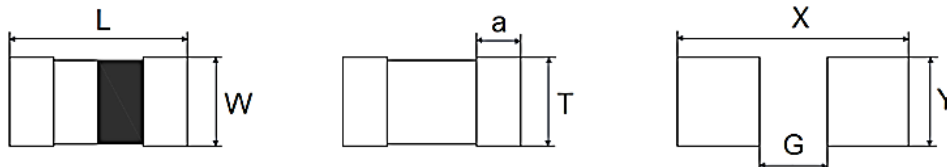
PART NUMBERING SYSTEM

SIM 01 1N0 B C11
(1) (2) (3) (4) (5)



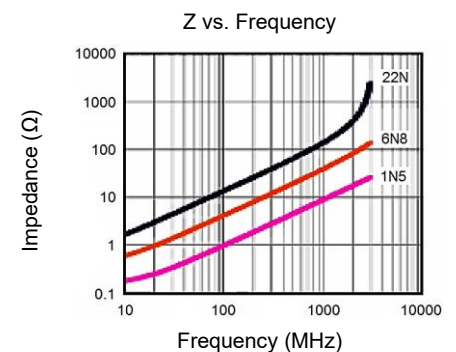
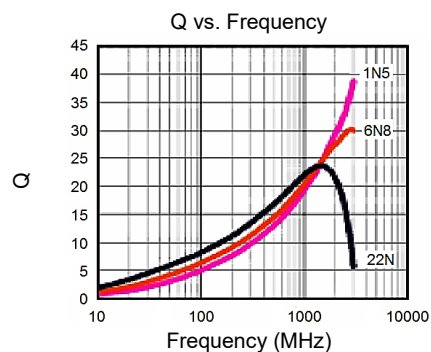
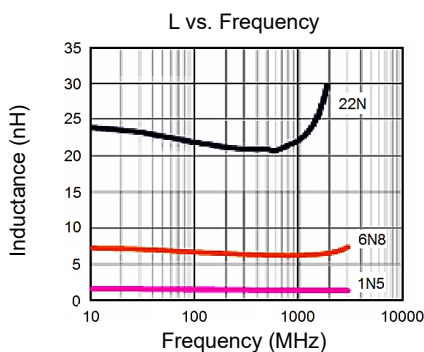
No	Item	Code	Description	
(1)	Product Code	SIM	SMD Signal Inductor Series, Chip type	
(2)	Dimension	01	01: 0201	02: 0402, 03:0603
(3)	Inductance	1N0	1N0: 1.0nH	10N: 10nH
(4)	Tolerance	B	B: $\pm 0.1\text{nH}$	C: $\pm 0.2\text{nH}$, S: $\pm 0.3\text{nH}$, G: $\pm 2\%$, H: $\pm 3\%$, J: $\pm 5\%$
(5)	Series Code	C11	High Frequency Ceramic Chip Series	

DIMENSIONS



Size Code	L	W	T	a	G	X	Y	Unit: mm
01 (0201)	0.60 \pm 0.03	0.30 \pm 0.03	0.30 \pm 0.03	0.15 \pm 0.05	0.30	0.90	0.30	
02 (0402)	1.00 \pm 0.10	0.50 \pm 0.10	0.50 \pm 0.10	0.20 \pm 0.10	0.40	1.50	0.60	
03 (0603)	1.60 \pm 0.15	0.80 \pm 0.15	0.80 \pm 0.15	0.40 \pm 0.20	0.70	2.30	0.80	

CHARACTERISTIC CURVES – Size 0201



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ELECTRICAL CHARACTERISTICS

Part Number	Inductance (nH)	Tolerance (± %)	Q Min.	Test Frequency (MHz)	DCR (Ω) Max.	SRF (MHz) Min.	Rated Current (mA) Max.
SIM010N3□C11	0.3	B	4	100	0.07	10,000	850
SIM010N4□C11	0.4	B	4	100	0.07	10,000	850
SIM010N5□C11	0.5	B	4	100	0.08	10,000	800
SIM010N6□C11	0.6	B	4	100	0.08	10,000	800
SIM010N7□C11	0.7	B	4	100	0.09	10,000	750
SIM010N8□C11	0.8	B	4	100	0.10	10,000	750
SIM010N9□C11	0.9	B	4	100	0.10	10,000	750
SIM011N0□C11	1.0	B, C, S	4	100	0.14	10,000	600
SIM011N1□C11	1.1	B, C, S	4	100	0.14	10,000	600
SIM011N2□C11	1.2	B, C, S	4	100	0.14	10,000	600
SIM011N3□C11	1.3	B, C, S	4	100	0.14	10,000	600
SIM011N4□C11	1.4	B, C, S	4	100	0.18	10,000	550
SIM011N5□C11	1.5	B, C, S	4	100	0.18	10,000	550
SIM011N6□C11	1.6	B, C, S	4	100	0.18	10,000	500
SIM011N7□C11	1.7	B, C, S	4	100	0.19	10,000	500
SIM011N8□C11	1.8	B, C, S	4	100	0.19	10,000	500
SIM011N9□C11	1.9	B, C, S	4	100	0.20	10,000	450
SIM012N0□C11	2.0	B, C, S	4	100	0.20	10,000	450
SIM012N1□C11	2.1	B, C, S	4	100	0.20	10,000	450
SIM012N2□C11	2.2	B, C, S	4	100	0.22	10,000	450
SIM012N3□C11	2.3	B, C, S	4	100	0.22	10,000	450
SIM012N4□C11	2.4	B, C, S	4	100	0.24	10,000	450
SIM012N5□C11	2.5	B, C, S	4	100	0.24	10,000	450
SIM012N6□C11	2.6	B, C, S	4	100	0.25	10,000	450
SIM012N7□C11	2.7	B, C, S	5	100	0.25	10,000	450
SIM012N9□C11	2.9	B, C, S	5	100	0.28	9,500	450
SIM013N0□C11	3.0	B, C, S	5	100	0.28	9,500	450
SIM013N1□C11	3.1	B, C, S	5	100	0.28	9,500	450
SIM013N2□C11	3.2	B, C, S	5	100	0.30	9,500	450
SIM013N3□C11	3.3	B, C, S	5	100	0.30	9,500	450
SIM013N4□C11	3.4	B, C, S	5	100	0.30	8,000	400
SIM013N5□C11	3.5	B, C, S	5	100	0.30	8,000	400
SIM013N6□C11	3.6	B, C, S	5	100	0.30	8,000	400
SIM013N7□C11	3.7	B, C, S	5	100	0.30	8,000	400
SIM013N8□C11	3.8	B, C, S	5	100	0.30	6,500	400
SIM013N9□C11	3.9	B, C, S	5	100	0.30	6,500	400
SIM014N3□C11	4.3	B, C, S	5	100	0.40	6,500	350
SIM014N7□C11	4.7	B, C, S	5	100	0.40	6,500	350
SIM015N1□C11	5.1	B, C, S	5	100	0.40	6,500	350

Notes:

1. Test level: 500mV, Test equipment: Agilent E4991A/B, with fixture 16197A or equivalent, Agilent 4338B
2. □: Tolerance: B: ±0.1nH, C: ±0.2nH, S: ±0.3nH, G: ±2%, H: ±3%, J: ±5%
3. Operating Temperature Range: -55~+125°C.

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ELECTRICAL CHARACTERISTICS

Part Number	Inductance (nH)	Tolerance (± %)	Q Min.	Test Frequency (MHz)	DCR (Ω) Max.	SRF (MHz) Min.	Rated Current (mA) Max.
SIM013N4□C11	3.4	B, C, S	5	100	0.30	8,000	400
SIM013N5□C11	3.5	B, C, S	5	100	0.30	8,000	400
SIM013N6□C11	3.6	B, C, S	5	100	0.30	8,000	400
SIM013N7□C11	3.7	B, C, S	5	100	0.30	8,000	400
SIM013N8□C11	3.8	B, C, S	5	100	0.30	6,500	400
SIM013N9□C11	3.9	B, C, S	5	100	0.30	6,500	400
SIM014N3□C11	4.3	B, C, S	5	100	0.40	6,500	350
SIM014N7□C11	4.7	B, C, S	5	100	0.40	6,500	350
SIM015N1□C11	5.1	B, C, S	5	100	0.40	6,500	350
SIM015N6□C11	5.6	B, C, S	5	100	0.40	6,000	350
SIM016N2□C11	6.2	B, C, S	5	100	0.44	6,000	300
SIM016N8□C11	6.8	H, J	5	100	0.50	5,400	300
SIM017N5□C11	7.5	H, J	5	100	0.53	4,800	300
SIM018N2□C11	8.2	H, J	5	100	0.55	4,800	250
SIM019N1□C11	9.1	H, J	5	100	0.62	4,500	250
SIM0110N□C11	10.0	H, J	5	100	0.65	4,500	250
SIM0112N□C11	12.0	H, J	5	100	0.70	3,700	250
SIM0115N□C11	15.0	H, J	5	100	0.80	2,200	250
SIM0118N□C11	18.0	H, J	5	100	0.90	2,200	200
SIM0122N□C11	22.0	H, J	5	100	1.20	2,000	150
SIM0127N□C11	27.0	H, J	4	100	1.80	1,800	140
SIM0133N□C11	33.0	J	4	100	2.10	1,700	120
SIM0139N□C11	39.0	J	4	100	2.40	1,500	120

Notes:

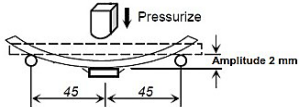
1. Test level: 500mV, Test equipment: Agilent E4991A/B, with fixture16197A or equivalent, Agilent 4338B
2. □ (Tolerance: B: ±0.1nH, C: ±0.2nH, S: ±0.3nH, G: ±2%, H: ±3%, J: ±5%).
3. Operating Temperature Range: -55~+125°C.

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RELIABILITY TEST CONDITON AND REQUIREMENT

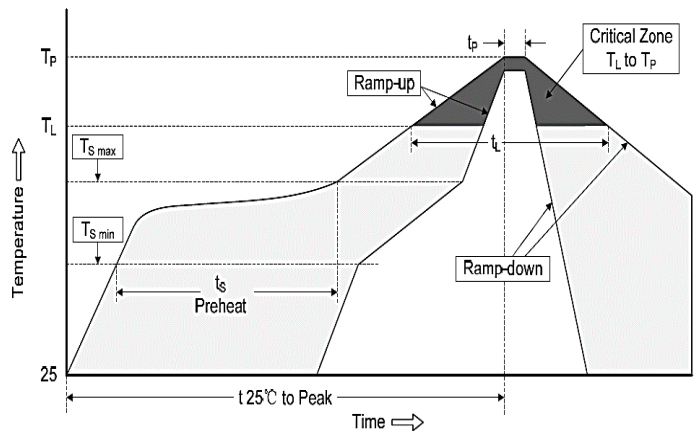
Item	Test Standards / Conditions / Equipment	Requirement
Thermal Shock	Temperature: -55~125°C, Cycle: 100 cycles, Dwell time: 30 minutes Measured at room temperature after test completed for 24hrs	Appearance: No damage. Inductance: within $\pm 10\%$ of initial value. Q: within $\pm 20\%$ of initial value.
Operational Life	Temperature: 85 ± 5 °C, Test Time: 1000hrs Apply current: Full rated current Measured at room temperature after test completed for 24hrs	Appearance: No damage. Inductance: within $\pm 10\%$ of initial value. Q: within $\pm 20\%$ of initial value.
Biased Humidity	Temperature: 40 ± 2 °C, Humidity: 90~95%RH, Test time: 1000hrs Apply current: Full rated current Measured at room temperature after test completed for 24hrs	Appearance: No damage. Inductance: within $\pm 10\%$ of initial value. Q: within $\pm 20\%$ of initial value.
Resistance to Soldering Heat	Solder temperature: 260 ± 5 °C, Dip time: 10 ± 1 sec Flux: Rosin	Appearance: No mechanical damage. Inductance: within $\pm 10\%$ of initial value. Q: within $\pm 20\%$ of initial value.
Solderability	Solder temperature: 235 ± 5 °C, Dip time: 5 ± 1 sec Flux: Rosin	More than 95% of terminal electrode should be covered with new solder. Appearance: No mechanical damage.
Bending Strength	Solder the chip to the test jig and apply a force in the direction shown in below. 	Appearance: No damage.

Notes:

1. Storage Condition: Less than 40°C and 70% RH.
2. Storage Time: 6 Months Max (Size: 0201, 0402), 12 Months Max. (Size: 0603)

RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	200°C
	Time (min. to max.) (t_s)	60~120 seconds
Average ramp up rate $T_{s(max)}$ to T_L		3°C/second max.
Average ramp up rate T_L to peak		3°C/second max.
Reflow	Temp. (T_L)	217°C
	Time (min. to max.) (t_L)	60~150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		≥ 30 seconds
Ramp-down Rate		6°C/second max.



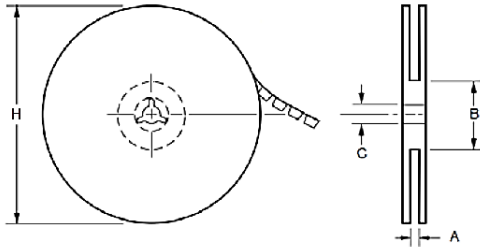
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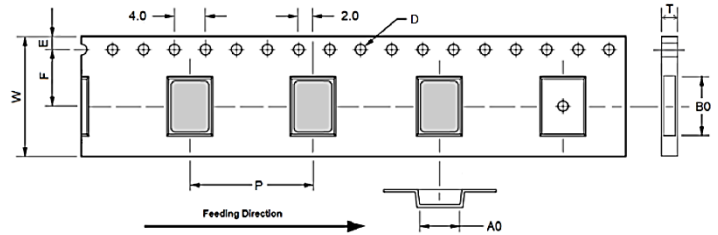
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PACKAGING DIMENSION

Reel Specification



Paper Tape Specification (mm)



Size Code	Reel Dimension (mm)				Tape Dimensions (mm)									Parts Per Reel
	A ±1.5	B Min	C ±1.0	H ±2.0	A0 ±0.05	B0 ±0.05	W ±0.10	E ±0.05	F ±0.05	P ±0.05	D +0.05	T ±0.05	Paper 7"	
0201	10.0	50	13.2	178	0.36	0.66	8.00	1.75	3.50	2.00	1.55	0.42	15,000	
0402	10.0	50	13.2	178	0.60	1.12	8.00	1.75	3.50	2.00	1.55	0.60	10,000	
0603	10.0	50	13.2	178	0.98	1.80	8.00	1.75	3.50	4.00	1.55	0.95	4,000	

*Specifications subject to change without notice.