

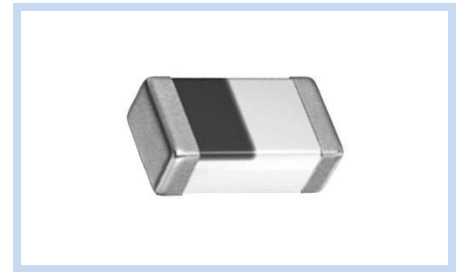
SMD Ceramic Chip Inductor High Frequency AEC-Q200

SIM01-NM11 Series

MERITEK

FEATURE

- High Frequency Application Range up to 20GHz
- Small Size and Low Profile
- Excellent Solderability and Heat Resistance
- Application: RF and Wireless Communication, Information Technology Equipment, Radar Detectors, Automotive Electronics, etc.



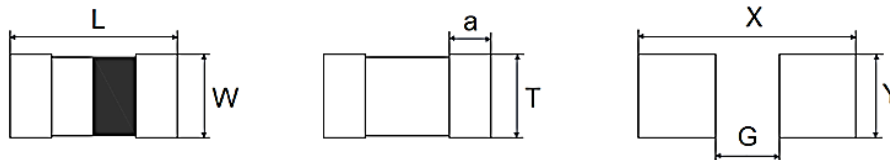
PART NUMBERING SYSTEM



SIM 01 1N0 B NM11
(1) (2) (3) (4) (5)

No	Item	Code	Description	
(1)	Product Code	SIM	SMD Signal Inductor Series, Chip type	
(2)	Dimension	01	01: 0201	See Dimension Table
(3)	Inductance	1N0	1N0: 1.0nH	10N: 10nH
(4)	Tolerance	B	B: $\pm 0.1nH$	C: $\pm 0.2nH$, S: $\pm 0.3nH$, H: $\pm 3\%$, J: $\pm 5\%$
(5)	Series Code	NM11	High Frequency Ceramic Chip Series, AEC-Q200 Compliant	

DIMENSIONS



Size Code	L	W	T	a	G	X	Y
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

Unit: mm

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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.
SIM010N6□NM11	0.6	B, C	14	500	0.07	20,000	850
SIM010N7□NM11	0.7	B, C	14	500	0.08	20,000	800
SIM010N8□NM11	0.8	B, C	14	500	0.08	18,000	800
SIM010N9□NM11	0.9	B, C	14	500	0.10	18,000	750
SIM011N0□NM11	1.0	B, C, S	14	500	0.10	17,000	750
SIM011N1□NM11	1.1	B, C, S	14	500	0.10	17,000	750
SIM011N2□NM11	1.2	B, C, S	14	500	0.10	17,000	750
SIM011N3□NM11	1.3	B, C, S	14	500	0.15	17,000	600
SIM011N4□NM11	1.4	B, C, S	14	500	0.15	16,000	600
SIM011N5□NM11	1.5	B, C, S	14	500	0.15	15,000	600
SIM011N6□NM11	1.6	B, C, S	14	500	0.15	15,000	600
SIM011N7□NM11	1.7	B, C, S	14	500	0.15	15,000	600
SIM011N8□NM11	1.8	B, C, S	14	500	0.15	15,000	600
SIM011N9□NM11	1.9	B, C, S	14	500	0.15	12,500	600
SIM012N0□NM11	2.0	B, C, S	14	500	0.15	12,500	600
SIM012N1□NM11	2.1	B, C, S	14	500	0.15	11,000	600
SIM012N2□NM11	2.2	B, C, S	14	500	0.15	11,000	600
SIM012N3□NM11	2.3	B, C, S	14	500	0.20	10,000	500
SIM012N4□NM11	2.4	B, C, S	14	500	0.20	10,000	500
SIM012N5□NM11	2.5	B, C, S	14	500	0.20	10,000	500
SIM012N6□NM11	2.6	B, C, S	14	500	0.20	10,000	500
SIM012N7□NM11	2.7	B, C, S	14	500	0.20	10,000	500
SIM012N8□NM11	2.8	B, C, S	14	500	0.20	9,500	500
SIM012N9□NM11	2.9	B, C, S	14	500	0.20	9,500	500
SIM013N0□NM11	3.0	B, C, S	14	500	0.25	9,500	450
SIM013N1□NM11	3.1	B, C, S	14	500	0.25	8,000	450
SIM013N2□NM11	3.2	B, C, S	14	500	0.25	8,000	450
SIM013N3□NM11	3.3	B, C, S	14	500	0.25	8,000	450
SIM013N4□NM11	3.4	B, C, S	14	500	0.25	7,000	450
SIM013N5□NM11	3.5	B, C, S	14	500	0.25	7,000	450
SIM013N6□NM11	3.6	B, C, S	14	500	0.30	6,000	400
SIM013N7□NM11	3.7	B, C, S	14	500	0.30	6,000	400
SIM013N8□NM11	3.8	B, C, S	14	500	0.30	6,000	400
SIM013N9□NM11	3.9	B, C, S	14	500	0.30	5,700	400
SIM014N0□NM11	4.0	B, C, S	14	500	0.40	5,300	350
SIM014N1□NM11	4.1	B, C, S	14	500	0.40	5,300	350
SIM014N2□NM11	4.2	B, C, S	14	500	0.40	5,300	350
SIM014N3□NM11	4.3	S, H, J	14	500	0.40	5,300	350
SIM014N7□NM11	4.7	S, H, J	14	500	0.40	4,400	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, H: ±3%, J: ±5%).
3. Operating Temperature Range: -55~+125°C.

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ELECTRICAL CHARACTERISTICS

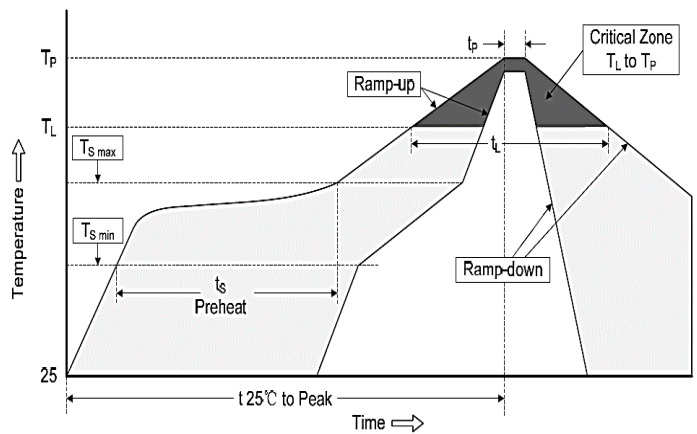
Part Number	Inductance (nH)	Tolerance (± %)	Q Min.	Test Frequency (MHz)	DCR (Ω) Max.	SRF (MHz) Min.	Rated Current (mA) Max.
SIM015N1□NM11	5.1	S, H, J	14	500	0.40	4,200	350
SIM015N6□NM11	5.6	S, H, J	14	500	0.40	4,000	350
SIM016N2□NM11	6.2	H, J	14	500	0.60	4,000	300
SIM016N8□NM11	6.8	H, J	14	500	0.60	3,900	300
SIM017N5□NM11	7.5	H, J	14	500	0.60	3,700	300
SIM018N2□NM11	8.2	H, J	14	500	0.70	3,600	250
SIM019N1□NM11	9.1	H, J	14	500	0.70	3,300	250
SIM0110N□NM11	10.0	H, J	14	500	0.70	3,200	250
SIM0111N□NM11	11.0	H, J	14	500	0.80	2,900	250
SIM0112N□NM11	12.0	H, J	12	500	0.70	2,900	250
SIM0113N□NM11	13.0	H, J	12	500	0.80	2,600	250
SIM0115N□NM11	15.0	H, J	12	500	0.70	2,600	250
SIM0116N□NM11	16.0	H, J	12	500	0.95	2,200	200

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, H: ±3%, J: ±5%).
3. Operating Temperature Range: -55~+125°C.

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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RELIABILITY TEST CONDITON AND REQUIREMENT

Item	Test Standards / Conditions / Equipment	Requirement
High Temperature Exposure	Temperature: 125±5°C Test time: 1000hrs Measured at room temperature after test completed for 24hrs	Appearance: No mechanical damage. Inductance: within ±10% of initial value. Q value: within ±20% of initial value.
Temperature Cycle	Temperature: -55~125°C Cycle: 1000 cycles, Dwell time: 30 minutes Measured at room temperature after test completed for 24hrs	Appearance: No mechanical damage. Inductance: within ±10% of initial value. Q value: within ±20% of initial value.
Biased Humidity	Temperature: 85±2°C, Humidity: 85%RH, Test time: 1000hrs Apply current: Full rated current Measured at room temperature after test completed for 24hrs	Appearance: No mechanical damage. Inductance: within ±10% of initial value. Q value: within ±20% of initial value.
Operational Life	Temperature: 125±5°C, Test time: 1000hrs Apply current: Full rated current Measured at room temperature after test completed for 24hrs	Appearance: No mechanical damage. Inductance: within ±10% of initial value. Q value: within ±20% of initial value.
Mechanical Shock	Test Condition: F Peak Value: 1500g's, Normal Duration: 0.5ms Waveform: Half-sine	Appearance: No mechanical damage. Inductance: within ±10% of initial value. Q value: within ±20% of initial value.
Vibration Test	Test device shall be soldered on the substrate Oscillation Frequency: 10~2KHz Amplitude: 5g's for 20min, 12 cycles in each of 3 orientations	Appearance: No mechanical damage. Inductance: within ±10% of initial value. Q value: within ±20% of initial value.
Resistance to Soldering Heat	Solder temperature: 260±5°C Flux: Rosin Dip time: 10±1sec	Appearance: No mechanical damage. Inductance: within ±10% of initial value. Q value: within ±20% of initial value.
ESD	Classification Level: 1C	Appearance: No mechanical damage. Inductance: within ±10% of initial value. Q value: within ±20% of initial value.
Solderability Test	Solder temperature: 235±5°C, Dip time: 5±1sec Flux: Rosin	More than 95% of terminal electrode should be covered with new solder. Appearance: No mechanical damage.
Board Flex	Epoxy-PCB Thickness: 1.6mm Deflection: 2mm Min. Holding time: 60sec Min.	Appearance: No mechanical damage.
Terminal Strength	For size 0201inch (0603mm): Apply 2N force for 10±1sec	Appearance: No mechanical damage.

Notes:

1. Storage Condition: Less than 40°C and 70% RH.
2. Storage Time: 6 Months Max

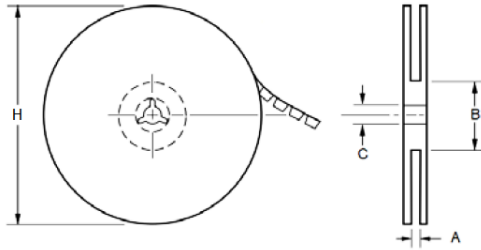
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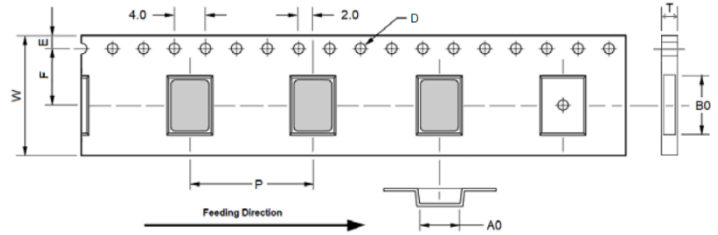
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PACKAGING DIMENSION

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 ±0.02	B0 ±0.02	W ±0.10	E ±0.05	F ±0.05	P ±0.05	D +0.05	T ±0.02	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	

*Specifications subject to change without notice.