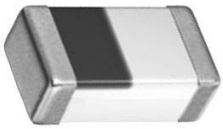
SMD Ceramic Chip Inductor
High Frequency Type

SIM02-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, etc.



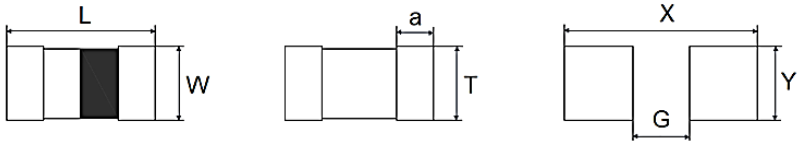
RoHS

PART NUMBERING SYSTEM

SIM	02	1N0	B	C11
(1)	(2)	(3)	(4)	(5)

No	Item	Code	Description	
(1)	Product Code	SIM	SMD Signal Inductor Series, Chip type	
(2)	Dimension	02	02: 0402	01: 0201, 03:0603
(3)	Inductance	1N0	1N0: 1.0nH	10N: 10nH, R10: 100nH
(4)	Tolerance	B	B: ±0.1nH	C: ±0.2nH, S: ±0.3nH, G: ±2%, H: ±3%, J: ±5%
(5)	Series Code	C11	High Frequency Ceramic Chip Series, Internal control or project reference	

DIMENSIONS

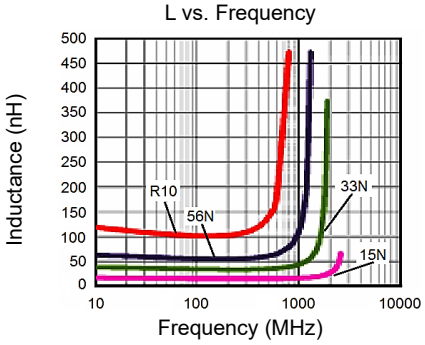


Unit: mm

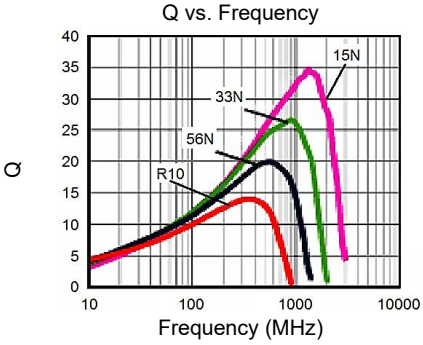
Size Code	L	W	T	a	G	X	Y
01 (0201)	0.60±0.03	0.30±0.03	0.30±0.03	0.15±0.05	0.30	0.90	0.30
02 (0402)	1.00±0.10	0.50±0.10	0.50±0.10	0.20±0.10	0.40	1.50	0.60
03 (0603)	1.60±0.15	0.80±0.15	0.80±0.15	0.40±0.20	0.70	2.30	0.80

CHARACTERISTIC CURVES - Size 0402

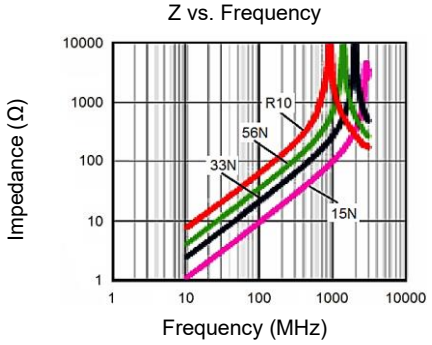
L vs. Frequency



Q vs. Frequency



Z vs. Frequency

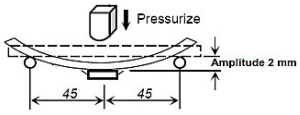


ELECTRICAL CHARACTERISTICS

Part Number	Inductance (nH)	Tolerance (± %)	Q Min.	Test Frequency (MHz)	DCR (Ω) Max.	SRF (MHz) Min.	Rated Current (mA) Max.
SIM020N3□C11	0.3	B	8	100	0.08	10,000	1000
SIM020N4□C11	0.4	B	8	100	0.08	10,000	1000
SIM020N5□C11	0.5	B	8	100	0.08	10,000	1000
SIM020N6□C11	0.6	B	8	100	0.08	10,000	1000
SIM020N7□C11	0.7	B	8	100	0.08	10,000	1000
SIM020N8□C11	0.8	B	8	100	0.08	10,000	1000
SIM021N0□C11	1.0	B, C, S	8	100	0.08	10,000	1000
SIM021N1□C11	1.1	B, C, S	8	100	0.08	10,000	1000
SIM021N2□C11	1.2	B, C, S	8	100	0.09	10,000	1000
SIM021N3□C11	1.3	B, C, S	8	100	0.09	10,000	1000
SIM021N5□C11	1.5	B, C, S	8	100	0.10	10,000	1000
SIM021N6□C11	1.6	B, C, S	8	100	0.10	10,000	1000
SIM021N8□C11	1.8	B, C, S	8	100	0.12	10,000	900
SIM022N0□C11	2.0	B, C, S	8	100	0.12	10,000	900
SIM022N2□C11	2.2	B, C, S	8	100	0.13	10,000	900
SIM022N4□C11	2.4	B, C, S	8	100	0.13	10,000	800
SIM022N7□C11	2.7	B, C, S	8	100	0.16	6,000	800
SIM023N0□C11	3.0	B, C, S	8	100	0.16	6,000	800
SIM023N3□C11	3.3	B, C, S	8	100	0.16	6,000	800
SIM023N6□C11	3.6	B, C, S	8	100	0.20	6,000	700
SIM023N9□C11	3.9	B, C, S	8	100	0.20	6,000	700
SIM024N3□C11	4.3	B, C, S	8	100	0.20	6,000	700
SIM024N7□C11	4.7	B, C, S	8	100	0.20	6,000	700
SIM025N1□C11	5.1	B, C, S	8	100	0.23	5,300	600
SIM025N6□C11	5.6	B, C, S	8	100	0.23	4,500	600
SIM026N2□C11	6.2	B, C, S	8	100	0.25	4,500	600
SIM026N8□C11	6.8	G, H, J	8	100	0.25	4,500	600
SIM027N5□C11	7.5	G, H, J	8	100	0.28	4,200	500
SIM028N2□C11	8.2	G, H, J	8	100	0.28	3,700	500
SIM029N1□C11	9.1	G, H, J	8	100	0.30	3,400	500
SIM0210N□C11	10.0	G, H, J	8	100	0.30	3,400	500
SIM0212N□C11	12.0	G, H, J	8	100	0.45	3,000	400
SIM0215N□C11	15.0	G, H, J	8	100	0.55	2,500	400
SIM0218N□C11	18.0	G, H, J	8	100	0.65	2,200	300
SIM0222N□C11	22.0	G, H, J	8	100	0.70	1,900	300
SIM0227N□C11	27.0	G, H, J	8	100	0.80	1,700	300
SIM0233N□C11	33.0	G, H, J	8	100	0.90	1,600	200
SIM0239N□C11	39.0	G, H, J	8	100	1.00	1,200	200
SIM0247N□C11	47.0	G, H, J	8	100	1.10	1,100	200
SIM0256N□C11	56.0	G, H, J	8	100	1.10	1,000	200
SIM0268N□C11	68.0	G, H, J	8	100	1.20	800	200
SIM0282N□C11	82.0	J	8	100	1.30	600	200
SIM02R10□C11	100.0	J	8	100	1.60	600	200
SIM02R12□C11	120.0	J	8	100	1.60	600	150
SIM02R15□C11	150.0	J	8	100	3.20	550	140

Notes:
1. Test Level: 500mV, Testing 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

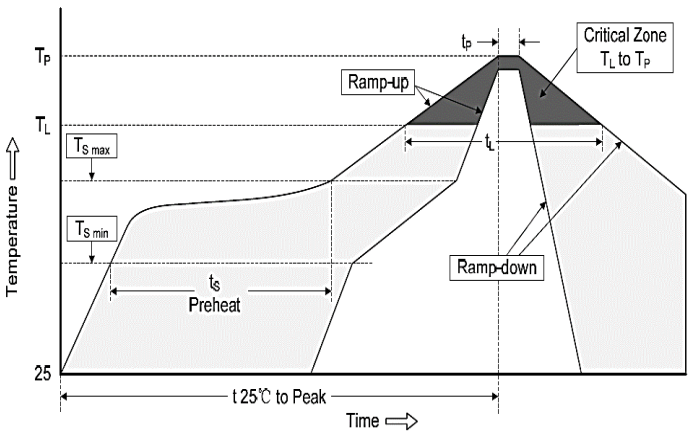
RELIABILITY TEST CONDITON AND REQUIREMENT

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 ±10% of initial value. Q: within ±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 ±10% of initial value. Q: within ±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 ±10% of initial value. Q: within ±20% of initial value.
Resistance to Soldering Heat	Solder temperature: 260±5˚C, Dip time: 10±1sec Flux: Rosin	Appearance: No mechanical damage. Inductance: within ±10% of initial value. Q: within ±20% of initial value.
Solderability	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.
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 40ºC and 70% RH.
2. Storage Time: 6 Months Max (Size: 02001, 0402), 12 Months Max. (Size: 0603)

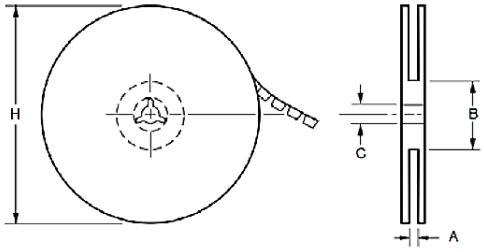
RECOMMENDED SOLDERING PROFILES

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.

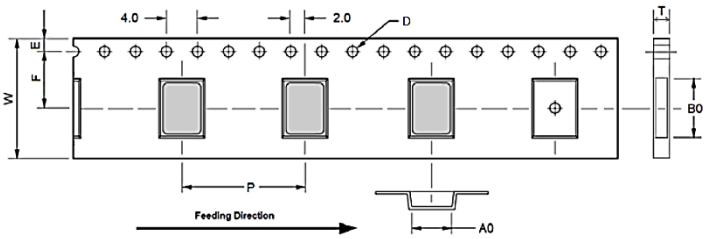


PACKAGING DIMENSION

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.