

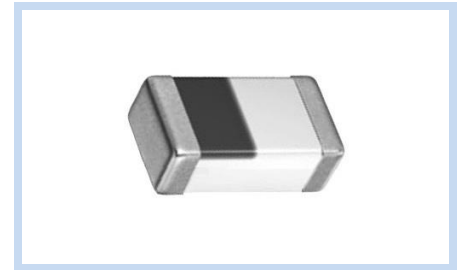
SMD Ceramic Chip Inductor High Frequency Type

SIM03-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.



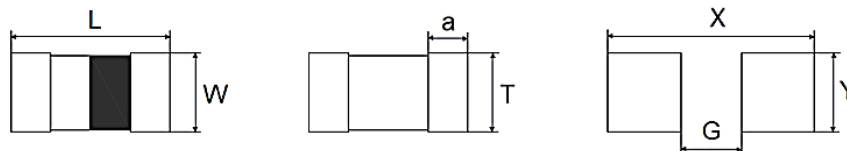
PART NUMBERING SYSTEM

SIM **03** **1N0** **S** **C11**
(1) (2) (3) (4) (5)



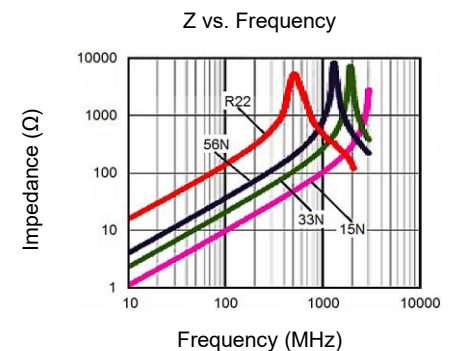
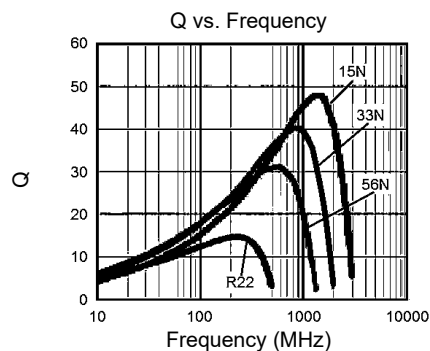
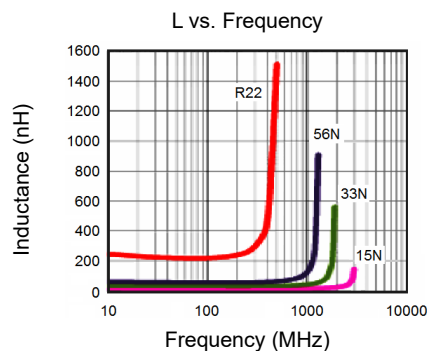
No	Item	Code	Description	
(1)	Product Code	SIM	SMD Signal Inductor Series, Chip type	
(2)	Dimension	03	03: 0603	01: 0201, 02:0402
(3)	Inductance	1N0	1N0: 1.0nH	10N: 10nH, R10: 100nH
(4)	Tolerance	S	S: $\pm 0.3nH$	J: $\pm 5\%$
(5)	Series Code	C11	High Frequency Ceramic Chip Series, Internal control or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

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 0603



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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.
SIM031N0□C11	1.0	S	8	100	0.05	10,000	1,000
SIM031N2□C11	1.2	S	8	100	0.05	10,000	1,000
SIM031N5□C11	1.5	S	8	100	0.10	10,000	1,000
SIM031N8□C11	1.8	S	8	100	0.10	10,000	1,000
SIM032N2□C11	2.2	S	8	100	0.10	8,000	1,000
SIM032N7□C11	2.7	S	10	100	0.13	7,000	1,000
SIM033N3□C11	3.3	S	10	100	0.13	6,000	1,000
SIM033N9□C11	3.9	S	10	100	0.15	6,000	1,000
SIM034N7□C11	4.7	S	10	100	0.20	5,000	1,000
SIM035N6□C11	5.6	S	10	100	0.23	4,000	700
SIM036N8□C11	6.8	J	10	100	0.25	4,000	700
SIM038N2□C11	8.2	J	10	100	0.28	3,500	600
SIM0310N□C11	10.0	J	12	100	0.30	3,400	600
SIM0312N□C11	12.0	J	12	100	0.35	2,600	600
SIM0315N□C11	15.0	J	12	100	0.40	2,300	600
SIM0318N□C11	18.0	J	12	100	0.45	2,000	600
SIM0322N□C11	22.0	J	12	100	0.50	1,600	600
SIM0327N□C11	27.0	J	12	100	0.55	1,400	600
SIM0333N□C11	33.0	J	12	100	0.60	1,200	600
SIM0339N□C11	39.0	J	12	100	0.65	1,100	500
SIM0347N□C11	47.0	J	12	100	0.70	900	500
SIM0356N□C11	56.0	J	12	100	0.75	900	500
SIM0368N□C11	68.0	J	12	100	0.85	700	400
SIM0382N□C11	82.0	J	12	100	0.95	600	300
SIM03R10□C11	100.0	J	12	100	1.00	600	300
SIM03R12□C11	120.0	J	8	50	1.20	500	300
SIM03R15□C11	150.0	J	8	50	1.20	500	300
SIM03R18□C11	180.0	J	8	50	1.30	400	300
SIM03R22□C11	220.0	J	8	50	1.50	400	300
SIM03R27□C11	270.0	J	8	50	1.90	400	200
SIM03R33□C11	330.0	J	8	50	2.10	350	200
SIM03R39□C11	390.0	J	8	50	2.30	350	150
SIM03R47□C11	470.0	J	8	50	2.60	300	150

Notes:

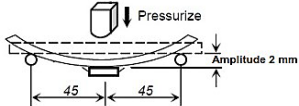
1. Test level: 500mV, Test equipment: Agilent E4991A/B, with fixture 16197A or equivalent, Agilent 4338B
2. □ (Tolerance: S: ±0.3nH, J: ±5%).
3. Operating Temperature Range: -55~+125°C

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RELIABILITY TEST CONDITON AND REQUIREMENT

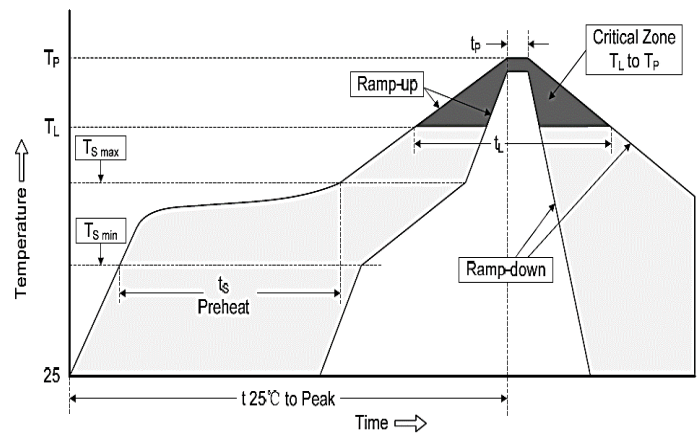
Item	Test Standards / Conditions / Equipment	Requirement
Thermal Shock	Temperature: -55~125°C, Cycle: 100 cycles, Dwell time: 30 minutes Measured at room temperature after test completed for 24hrs	Appearance: No damage. Inductance: within $\pm 10\%$ of initial value. Q: within $\pm 20\%$ of initial value.
Operational Life	Temperature: 85 $\pm 5^\circ\text{C}$, 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 $\pm 2^\circ\text{C}$, 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 $\pm 5^\circ\text{C}$, 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 $\pm 5^\circ\text{C}$, 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: 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.



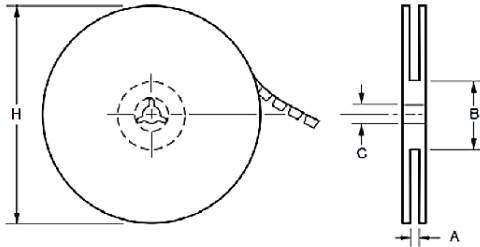
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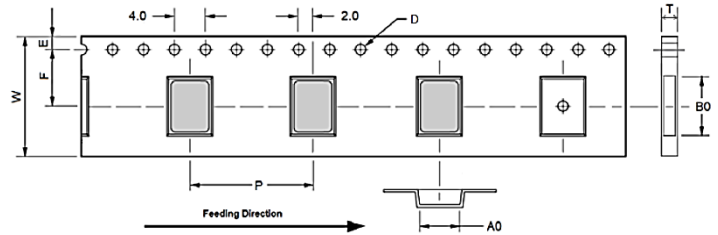
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PACKAGING DIMENSION

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.