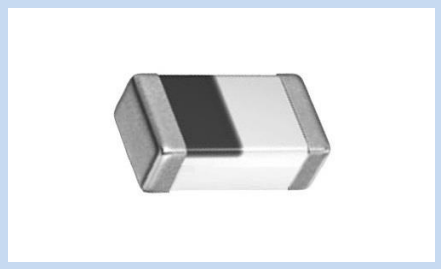
SMD Ceramic Chip Inductor
High Frequency AEC-Q200

SIM02-HM11 Series

MERITEK

FEATURE

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



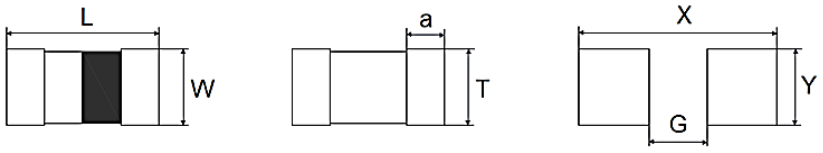
PART NUMBERING SYSTEM

RoHS

SIM	02	1N0	B	HM11
(1)	(2)	(3)	(4)	(5)

No	Item	Code	Description	
(1)	**Product Code**	SIM	SMD Signal Inductor Series, Chip type	
(2)	**Dimension**	02	02: 0402	See Dimension Table
(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**	HM11	High Frequency Ceramic Chip Series, AEC-Q200 Compliant, Internal control or project reference	

DIMENSIONS



Unit: mm

Size Code	L	W	T	a	G	X	Y
02 (0402)	1.00±0.10	0.50±0.10	0.50±0.10	0.20±0.10	0.40	1.50	0.60

ELECTRICAL CHARACTERISTICS

Part Number	Inductance (nH)	Tolerance (± %)	Q Min.	Test Frequency (MHz)	DCR (Ω) Max.	SRF (MHz) Min.	Rated Current (mA) Max.
SIM020N3□HM11	0.3	B	8	100	0.08	10,000	1000
SIM020N4□HM11	0.4	B	8	100	0.08	10,000	1000
SIM020N5□HM11	0.5	B	8	100	0.08	10,000	1000
SIM020N6□HM11	0.6	B	8	100	0.08	10,000	1000
SIM020N7□HM11	0.7	B	8	100	0.08	10,000	1000
SIM020N8□HM11	0.8	B	8	100	0.08	10,000	1000
SIM021N0□HM11	1.0	B, C, S	8	100	0.08	10,000	1000
SIM021N1□HM11	1.1	B, C, S	8	100	0.08	10,000	1000
SIM021N2□HM11	1.2	B, C, S	8	100	0.09	10,000	1000
SIM021N3□HM11	1.3	B, C, S	8	100	0.09	10,000	1000
SIM021N5□HM11	1.5	B, C, S	8	100	0.10	10,000	1000
SIM021N6□HM11	1.6	B, C, S	8	100	0.10	10,000	1000
SIM021N8□HM11	1.8	B, C, S	8	100	0.12	10,000	900
SIM022N0□HM11	2.0	B, C, S	8	100	0.12	10,000	900
SIM022N2□HM11	2.2	B, C, S	8	100	0.13	10,000	900
SIM022N4□HM11	2.4	B, C, S	8	100	0.13	10,000	800
SIM022N7□HM11	2.7	B, C, S	8	100	0.16	6,000	800
SIM023N0□HM11	3.0	B, C, S	8	100	0.16	6,000	800
SIM023N3□HM11	3.3	B, C, S	8	100	0.16	6,000	800
SIM023N6□HM11	3.6	B, C, S	8	100	0.20	6,000	700
SIM023N9□HM11	3.9	B, C, S	8	100	0.20	6,000	700
SIM024N3□HM11	4.3	B, C, S	8	100	0.20	6,000	700
SIM024N7□HM11	4.7	B, C, S	8	100	0.20	6,000	700
SIM025N1□HM11	5.1	B, C, S	8	100	0.23	5,300	600
SIM025N6□HM11	5.6	B, C, S	8	100	0.23	4,500	600
SIM026N2□HM11	6.2	B, C, S	8	100	0.25	4,500	600
SIM026N8□HM11	6.8	G, H, J	8	100	0.25	4,500	600
SIM027N5□HM11	7.5	G, H, J	8	100	0.28	4,200	500
SIM028N2□HM11	8.2	G, H, J	8	100	0.28	3,700	500
SIM029N1□HM11	9.1	G, H, J	8	100	0.30	3,400	500
SIM0210N□HM11	10.0	G, H, J	8	100	0.30	3,400	500
SIM0212N□HM11	12.0	G, H, J	8	100	0.45	3,000	400
SIM0215N□HM11	15.0	G, H, J	8	100	0.55	2,500	400
SIM0218N□HM11	18.0	G, H, J	8	100	0.65	2,200	300
SIM0222N□HM11	22.0	G, H, J	8	100	0.70	1,900	300
SIM0227N□HM11	27.0	G, H, J	8	100	0.80	1,700	300
SIM0233N□HM11	33.0	G, H, J	8	100	0.90	1,600	200
SIM0239N□HM11	39.0	G, H, J	8	100	1.00	1,200	200
SIM0247N□HM11	47.0	G, H, J	8	100	1.10	1,100	200
SIM0256N□HM11	56.0	G, H, J	8	100	1.10	1,000	200
SIM0268N□HM11	68.0	G, H, J	8	100	1.20	800	200
SIM0282N□HM11	82.0	J	8	100	1.30	600	200
SIM02R10□HM11	100.0	J	8	100	1.60	600	200

Notes:
1. Test level: 500mV, Test equipment: E4991A/B with fixture 16197A, 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.

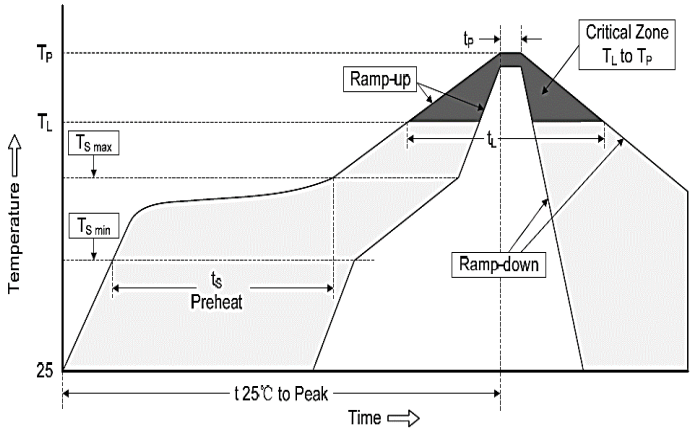
RELIABILITY TEST CONDITON AND REQUIREMENT

Item	Test Standards / Conditions / Equipment	Requirement
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 0402inch (1005mm): Apply 5N force for 10±1sec	Appearance: No mechanical damage.

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

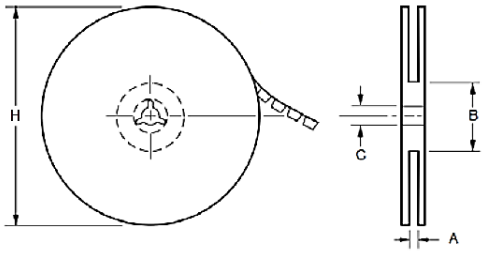
RECOMMENDED SOLDERING PROFILES

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.

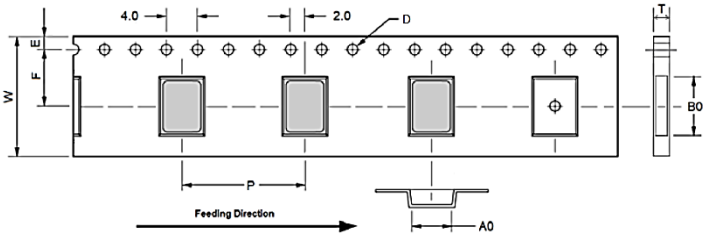


PACKAGING DIMENSION

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 ±0.03	B0 ±0.03	W ±0.10	E ±0.05	F ±0.05	P ±0.05	D +0.05	T ±0.03	Paper 7”
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

*Specifications subject to change without notice.