

Signal Inductor Multilayer Ferrite Chip Type

SIM-ML Series

MERITEK

FEATURE

- Operating temperature range: -40°C ~ +125°C
- Closed magnetic circuit avoids crosstalk
- Suitable for high density applications
- Application: PC, portable device, disc, hard disk, modem, DC-DC converters



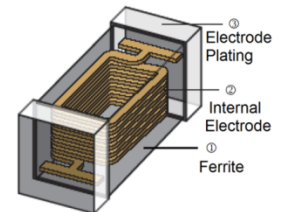
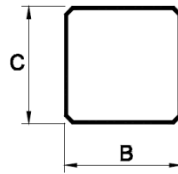
PART NUMBERING SYSTEM



SI (1) M (2) 0805 (3) M (4) 471 (5) ML (6) H (7)

No	Item	Code	Description	Series Reference
(1)	Meritek Series	SI	Signal Inductor	LI: Leaded Inductor PI: Power Inductor
(2)	Inductor Type	M	M: Multilayer	C: Common Mode Choke, E: Ceramic Chip O: Toroidal Coil, T: Thin Film
(3)	Dimension	0805	0805:2.00x1.25mm	Footprint information or Size Code
(4)	Tolerance	M	M: ±20%	K: ±10%
(5)	Inductance	471	471: 470nH	First 2 are significant, Third is a multiplier (10 ^x)
(6)	Package Code	ML	Multilayer Ferrite Chip	Package Information
(7)	Type	H	H: High Current	Blank: Standard

DIMENSIONS



Part Number	A (mm)	B (mm)	C (mm)	D (mm)
SIM0603-ML	1.60±0.20	0.80±0.20	0.80±0.20	0.30±0.20
SIM0805-ML (≤ 2.2μF)	2.00±0.20	1.25±0.20	0.90±0.20	0.50±0.30
SIM0805-ML (≥ 2.7μF)	2.00±0.20	1.25±0.20	1.25±0.20	0.50±0.30
SIM1206-ML	3.20±0.20	1.60±0.20	1.10±0.20	0.50±0.30
SIM0805-MLH	2.00±0.20	1.25±0.20	0.90±0.10	0.50±0.20
SIM0806-MLH	2.00±0.15	1.60±0.15	0.90±0.10	0.50±0.20
SIM1008-MLH	2.50±0.20	2.00±0.20	0.90±0.10	0.60±0.20

Signal Inductor Multilayer Ferrite Chip Type

SIM-ML Series

MERITEK

ELECTRICAL CHARACTERISTICS - SIM0603-ML Standard Type

Part Number	Inductance (nH)	Tolerance (± %)	Test Freq. (MHz)	Min Q	Min SRF (MHz)	Max DCR (Ω)	Max IDC (mA)
SIM0603M470ML	47	±20%	50MHz, 200mV	10	260	0.30	50
SIM0603M560ML	56	±20%	50MHz, 200mV	10	255	0.30	50
SIM0603M680ML	68	±20%	50MHz, 200mV	10	250	0.30	50
SIM0603M820ML	82	±20%	50MHz, 200mV	10	245	0.30	50
SIM0603□101ML	100	±10, ±20%	25MHz, 200mV	15	240	0.50	50
SIM0603□121ML	120	±10, ±20%	25MHz, 200mV	15	205	0.50	50
SIM0603□151ML	150	±10, ±20%	25MHz, 200mV	15	180	0.60	50
SIM0603□181ML	180	±10, ±20%	25MHz, 200mV	15	165	0.60	50
SIM0603□221ML	220	±10, ±20%	25MHz, 200mV	15	150	0.80	50
SIM0603□271ML	270	±10, ±20%	25MHz, 200mV	15	136	0.80	50
SIM0603□331ML	330	±10, ±20%	25MHz, 200mV	15	125	0.85	35
SIM0603□391ML	390	±10, ±20%	25MHz, 200mV	15	110	1.00	35
SIM0603□471ML	470	±10, ±20%	25MHz, 200mV	15	105	1.35	35
SIM0603□561ML	560	±10, ±20%	25MHz, 200mV	15	95	1.55	35
SIM0603□681ML	680	±10, ±20%	25MHz, 200mV	15	85	1.70	35
SIM0603□821ML	820	±10, ±20%	25MHz, 200mV	15	75	2.10	35
SIM0603□102ML	1000	±10, ±20%	10MHz, 200mV	35	65	0.60	25
SIM0603□122ML	1200	±10, ±20%	10MHz, 200mV	35	60	0.80	25
SIM0603□152ML	1500	±10, ±20%	10MHz, 200mV	35	55	0.80	25
SIM0603□182ML	1800	±10, ±20%	10MHz, 200mV	35	50	0.95	25
SIM0603□222ML	2200	±10, ±20%	10MHz, 200mV	35	45	1.55	15
SIM0603□272ML	2700	±10, ±20%	10MHz, 200mV	35	40	1.35	15
SIM0603□332ML	3300	±10, ±20%	10MHz, 200mV	35	38	1.55	15
SIM0603□392ML	3900	±10, ±20%	10MHz, 200mV	35	35	1.70	15
SIM0603□472ML	4700	±10, ±20%	10MHz, 200mV	35	33	2.10	15
SIM0603□562ML	5600	±10, ±20%	4MHz, 200mV	35	22	1.55	5
SIM0603□682ML	6800	±10, ±20%	4MHz, 200mV	35	20	1.70	5
SIM0603□822ML	8200	±10, ±20%	4MHz, 60 mV	30	18	2.10	5
SIM0603□103ML	10000	±10, ±20%	2MHz, 60mV	30	17	1.85	3

Notes:

- Tolerance: K: ±10%, M: ±20%
- Operating temperature: -40°C ~ +125°C
- Inductance, Q, SRF are measured with HP4291B
- DC Resistance is measured with Agilent 34401A

[Back to Top](#)

Signal Inductor Multilayer Ferrite Chip Type

SIM-ML Series

MERITEK

ELECTRICAL CHARACTERISTICS – SIM0805-ML Standard Type

Part Number	Inductance (nH)	Tolerance (± %)	Test Freq. (MHz)	Min Q	Min SRF (MHz)	Max DCR (Ω)	Max IDC (mA)
SIM0805M470ML	47	±20%	50MHz, 200mV	20	320	0.20	300
SIM0805M560ML	56	±20%	50MHz, 200mV	20	320	0.20	300
SIM0805M680ML	68	±20%	50MHz, 200mV	20	280	0.20	300
SIM0805M820ML	82	±20%	50MHz, 200mV	20	255	0.20	300
SIM0805□101ML	100	±10, ±20%	25MHz, 200mV	25	235	0.30	250
SIM0805□121ML	120	±10, ±20%	25MHz, 200mV	25	220	0.30	250
SIM0805□151ML	150	±10, ±20%	25MHz, 200mV	25	200	0.40	250
SIM0805□181ML	180	±10, ±20%	25MHz, 200mV	25	185	0.40	250
SIM0805□221ML	220	±10, ±20%	25MHz, 200mV	25	170	0.50	250
SIM0805□271ML	270	±10, ±20%	25MHz, 200mV	25	150	0.50	250
SIM0805□331ML	330	±10, ±20%	25MHz, 200mV	25	145	0.55	250
SIM0805□391ML	390	±10, ±20%	25MHz, 200mV	25	135	0.65	200
SIM0805□471ML	470	±10, ±20%	25MHz, 200mV	25	125	0.65	200
SIM0805□561ML	560	±10, ±20%	25MHz, 200mV	25	115	0.75	150
SIM0805□681ML	680	±10, ±20%	25MHz, 200mV	25	105	0.80	150
SIM0805□821ML	820	±10, ±20%	25MHz, 200mV	25	100	1.00	150
SIM0805□102ML	1000	±10, ±20%	10MHz, 200mV	45	75	0.40	50
SIM0805□122ML	1200	±10, ±20%	10MHz, 200mV	45	65	0.50	50
SIM0805□152ML	1500	±10, ±20%	10MHz, 200mV	45	60	0.50	50
SIM0805□182ML	1800	±10, ±20%	10MHz, 200mV	45	55	0.60	50
SIM0805□222ML	2200	±10, ±20%	10MHz, 200mV	45	50	0.65	30
SIM0805□272ML	2700	±10, ±20%	10MHz, 200mV	45	45	0.75	30
SIM0805□332ML	3300	±10, ±20%	10MHz, 200mV	45	41	0.80	30
SIM0805□392ML	3900	±10, ±20%	10MHz, 200mV	45	38	0.90	30
SIM0805□472ML	4700	±10, ±20%	10MHz, 200mV	45	35	1.00	30
SIM0805□562ML	5600	±10, ±20%	4MHz, 200mV	50	32	0.90	15
SIM0805□682ML	6800	±10, ±20%	4MHz, 200mV	50	29	1.00	15
SIM0805□822ML	8200	±10, ±20%	4MHz, 200mV	50	26	1.10	15
SIM0805□103ML	10000	±10, ±20%	2MHz, 60mV	50	24	1.15	15
SIM0805□123ML	12000	±10, ±20%	2MHz, 60mV	50	22	1.25	15
SIM0805□153ML	15000	±10, ±20%	1MHz, 60mV	30	19	0.80	5
SIM0805□183ML	18000	±10, ±20%	1MHz, 60mV	30	18	0.90	5
SIM0805□223ML	22000	±10, ±20%	1MHz, 60mV	30	16	1.10	5

Notes:

- Tolerance: K: ±10%, M: ±20%
- Operating temperature: -40°C ~ +125°C
- Inductance, Q, SRF are measured with HP4291B
- DC Resistance is measured with Agilent 34401A

[Back to Top](#)

Signal Inductor Multilayer Ferrite Chip Type

SIM-ML Series

MERITEK

ELECTRICAL CHARACTERISTICS – SIM1206-ML Standard Type

Part Number	Inductance (nH)	Tolerance (± %)	Test Freq. (MHz)	Min Q	Min SRF (MHz)	Max DCR (Ω)	Max IDC (mA)
SIM1206M470ML	47	±20%	50MHz, 200mV	20	320	0.15	300
SIM1206M560ML	56	±20%	50MHz, 200mV	20	280	0.25	300
SIM1206M680ML	68	±20%	50MHz, 200mV	20	280	0.25	300
SIM1206M820ML	82	±20%	50MHz, 200mV	20	250	0.25	300
SIM1206□101ML	100	±10, ±20%	25MHz, 200mV	20	235	0.25	250
SIM1206□121ML	120	±10, ±20%	25MHz, 200mV	20	220	0.30	250
SIM1206□151ML	150	±10, ±20%	25MHz, 200mV	20	200	0.30	250
SIM1206□181ML	180	±10, ±20%	25MHz, 200mV	20	185	0.40	250
SIM1206□221ML	220	±10, ±20%	25MHz, 200mV	20	170	0.40	250
SIM1206□271ML	270	±10, ±20%	25MHz, 200mV	20	150	0.50	250
SIM1206□331ML	330	±10, ±20%	25MHz, 200mV	20	145	0.60	250
SIM1206□391ML	390	±10, ±20%	25MHz, 200mV	25	135	0.50	200
SIM1206□471ML	470	±10, ±20%	25MHz, 200mV	25	125	0.60	200
SIM1206□561ML	560	±10, ±20%	25MHz, 200mV	25	115	0.70	150
SIM1206□681ML	680	±10, ±20%	25MHz, 200mV	25	105	0.80	150
SIM1206□821ML	820	±10, ±20%	25MHz, 200mV	25	100	0.90	150
SIM1206□102ML	1000	±10, ±20%	10MHz, 200mV	45	75	0.40	100
SIM1206□122ML	1200	±10, ±20%	10MHz, 200mV	45	65	0.50	100
SIM1206□152ML	1500	±10, ±20%	10MHz, 200mV	45	60	0.50	80
SIM1206□182ML	1800	±10, ±20%	10MHz, 200mV	45	55	0.50	70
SIM1206□222ML	2200	±10, ±20%	10MHz, 200mV	45	50	0.60	60
SIM1206□272ML	2700	±10, ±20%	10MHz, 200mV	45	45	0.60	60
SIM1206□332ML	3300	±10, ±20%	10MHz, 200mV	45	41	0.70	60
SIM1206□392ML	3900	±10, ±20%	10MHz, 200mV	45	38	0.80	50
SIM1206□472ML	4700	±10, ±20%	10MHz, 200mV	45	35	0.90	50
SIM1206□562ML	5600	±10, ±20%	4MHz, 200mV	45	32	0.70	25
SIM1206□682ML	6800	±10, ±20%	4MHz, 200mV	45	29	0.80	25
SIM1206□822ML	8200	±10, ±20%	4MHz, 200mV	45	26	0.90	25
SIM1206□103ML	10000	±10, ±20%	2MHz, 60mV	45	24	1.00	25
SIM1206□123ML	12000	±10, ±20%	2MHz, 60mV	45	22	1.05	15
SIM1206□153ML	15000	±10, ±20%	1MHz, 60mV	35	19	0.70	5
SIM1206□183ML	18000	±10, ±20%	1MHz, 60mV	35	18	0.75	5
SIM1206□223ML	22000	±10, ±20%	1MHz, 60mV	35	16	0.90	5
SIM1206□273ML	27000	±10, ±20%	1MHz, 60mV	35	14	0.90	5
SIM1206□333ML	33000	±10, ±20%	1MHz, 60mV	35	13	1.05	5

Notes:

- Tolerance: K: ±10%, M: ±20%
- Operating temperature: -40°C ~ +125°C
- Inductance, Q, SRF are measured with HP4291B
- DC Resistance is measured with Agilent 34401A

[Back to Top](#)

Signal Inductor Multilayer Ferrite Chip Type

SIM-ML Series

MERITEK

ELECTRICAL CHARACTERISTICS – SIM0805-MLH High Current Type

Part Number	Inductance (nH)	Tolerance (± %)	Test Freq.(MHz)	Min SRF (MHz)	DCR (Ω)	Max IDC (mA)
SIM0805M471MLH	470	±20%	1MHz, 250mV	100	0.10±25%	1100
SIM0805M681MLH	680	±20%	1MHz, 250mV	100	0.12±25%	1000
SIM0805M821MLH	820	±20%	1MHz, 250mV	90	0.14±25%	900
SIM0805M102MLH	1000	±20%	1MHz, 250mV	90	0.16±25%	800
SIM0805M122MLH	1200	±20%	1MHz, 250mV	80	0.16±25%	800
SIM0805M152MLH	1500	±20%	1MHz, 250mV	70	0.22±25%	700
SIM0805M182MLH	1800	±20%	1MHz, 250mV	60	0.22±25%	700
SIM0805M222MLH	2200	±20%	1MHz, 250mV	50	0.25±25%	600
SIM0805M332MLH	3300	±20%	1MHz, 250mV	40	0.22±25%	500
SIM0805M472MLH	4700	±20%	1MHz, 250mV	30	0.30±25%	500

ELECTRICAL CHARACTERISTICS – SIM0806-MLH High Current Type

Part Number	Inductance (nH)	Tolerance (± %)	Test Freq.(MHz)	Min SRF (MHz)	DCR (Ω)	Max IDC (mA)
SIM0806M471MLH	470	±20%	1MHz, 250mV	100	0.14±30%	1500
SIM0806M681MLH	680	±20%	1MHz, 250mV	90	0.15±30%	1500
SIM0806M821MLH	820	±20%	1MHz, 250mV	80	0.16±30%	1500
SIM0806M102MLH	1000	±20%	1MHz, 250mV	60	0.16±30%	1400
SIM0806M122MLH	1200	±20%	1MHz, 250mV	60	0.16±30%	1400
SIM0806M152MLH	1500	±20%	1MHz, 250mV	50	0.20±30%	1200
SIM0806M182MLH	1800	±20%	1MHz, 250mV	50	0.20±30%	1200
SIM0806M222MLH	2200	±20%	1MHz, 250mV	40	0.22±30%	1200
SIM0806M332MLH	3300	±20%	1MHz, 250mV	30	0.24±30%	1100
SIM0806M472MLH	4700	±20%	1MHz, 250mV	20	0.30±30%	1100

ELECTRICAL CHARACTERISTICS – SIM1008-MLH High Current Type

Part Number	Inductance (nH)	Tolerance (± %)	Test Freq.(MHz)	Min SRF (MHz)	DCR (Ω)	Max IDC (mA)
SIM1008M471MLH	470	±20%	1MHz, 250mV	100	0.07±25%	1800
SIM1008M681MLH	680	±20%	1MHz, 250mV	90	0.09±25%	1700
SIM1008M821MLH	820	±20%	1MHz, 250mV	80	0.10±25%	1700
SIM1008M102MLH	1000	±20%	1MHz, 250mV	60	0.11±25%	1600
SIM1008M122MLH	1200	±20%	1MHz, 250mV	60	0.11±25%	1600
SIM1008M152MLH	1500	±20%	1MHz, 250mV	50	0.13±25%	1500
SIM1008M182MLH	1800	±20%	1MHz, 250mV	50	0.13±25%	1500
SIM1008M222MLH	2200	±20%	1MHz, 250mV	40	0.17±25%	1300
SIM1008M332MLH	3300	±20%	1MHz, 250mV	30	0.16±25%	1200
SIM1008M472MLH	4700	±20%	1MHz, 250mV	25	0.20±25%	1100

Notes:

- Tolerance: K: ±10%, M: ±20%
- Operating temperature: -40°C ~ +125°C
- Inductance, Q, SRF are measured with HP4291B
- DC Resistance is measured with Agilent 34401A

[Back to Top](#)

Signal Inductor Multilayer Ferrite Chip Type

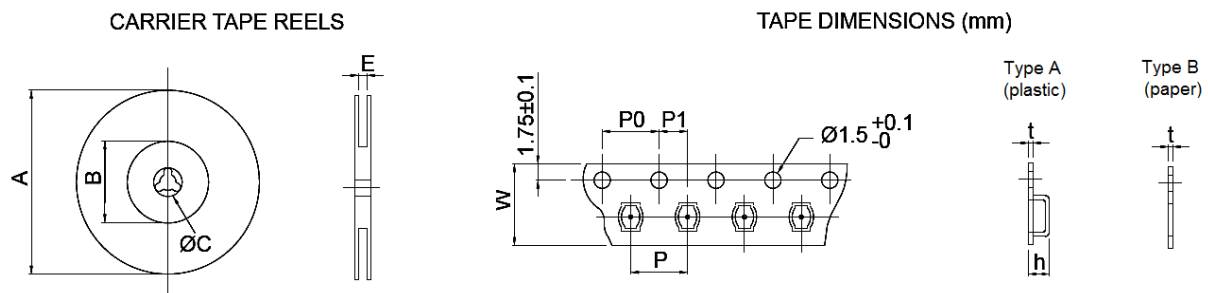
SIM-ML Series

MERITEK

RELIABILITY AND TEST CONDITIONS

Item	Test Condition	Requirement
Resistance to Soldering Heat	Pre-heating: 150°C, 1min. Solder Composition: Sn/Ag3.0/Cu0.5 (Pb-Free) Solder Temperature: 260±5°C (Pb-Free) Immersion Time: 10±1 sec.	Appearance: No damage More than 75% of the terminal. Electrode should be covered with solder.
Solderability	Pre-heating: 150°C, 1min. Solder Composition: Sn/Ag3.0/Cu0.5 (Pb-Free) Solder Temperature: 245±5°C (Pb-Free) Immersion Time: 4±1 sec.	The electrodes shall be at least 90% covered with new solder coating
Flexure Strength	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6 mm; 100x40x0.8mm for 0402, Deflection: 2.0 mm, Keeping Time: 30 sec.	The forces applied on the right conditions must not damage the terminal electrode and the ferrite.
Vibration	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1 min., Amplitude: 1.5 mm Time: 2 hrs for each axis (X, Y & Z), total 6 hrs	The forces applied on the right conditions must not damage the terminal electrode and the ferrite.
Damp Heat with Load	Temperature: 40±2°C; Relative Humidity: 90 ~ 95% Time: 1000 hrs Measured after exposure in the room condition for 24 hrs	Appearance: No damage L change: within±20% of initial value
Temperature Cycle	One cycle: Step 1: -40±3°C for 30 min., Step 2: 25±2°C for 3 min. Step 3: 85±3°C for 30 min., Step 4: 25±2°C for 3 min. Total: 100 cycles Measured after exposure in the room condition for 24 hrs	Appearance: No damage L change: within±20% of initial value
High Temperature Resistance	Temperature: 85±3°C; Relative Humidity: 20% Apply rated current for 1000 hrs Measured after exposure in the room condition for 24 hrs	Appearance: No damage L change: within±20% of initial value
Low Temperature Resistance	Temperature: -40±3°C; Relative Humidity: 0% Time: 1000 hrs Measured after exposure in the room condition for 24 hrs	Appearance: No damage L change: within±20% of initial value

PACKAGING DIMENSION



Part Number	Reel Dimension (mm)				Tape Dimensions (mm)						Parts Per Reel	
	A ±1.0	B ±0.5	C ±0.2	E ±0.5	W ±0.20	P ±0.10	P0 ±0.10	P1 ±0.05	h ±0.05	t ±0.05	Type	7"
SIM0603	178.0	60.0	13.0	9.0	8.00	4.0	4.00	2.00	-	0.95	B	4,000
SIM0805 (≤2.2μH)	178.0	60.0	13.0	9.0	8.00	4.0	4.00	2.00	-	0.95	B	4,000
SIM0805 (≥2.7μH)	178.0	60.0	13.0	9.0	8.00	4.0	4.00	2.00	1.45	0.22	A	3,000
SIM1206	178.0	60.0	13.0	9.0	8.00	4.0	4.00	2.00	1.27	0.22	A	3,000
SIM0805	178.0	60.0	13.0	9.0	8.00	4.0	4.00	2.00	-	0.95	B	4,000
SIM0806	178.0	60.0	13.0	9.0	8.00	4.0	4.00	2.00	1.23	0.23	A	3,000
SIM1008	178.0	60.0	13.0	9.0	8.00	4.0	4.00	2.00	1.40	0.23	A	3,000

Meritek Inductors Series: <http://www.meritekusa.com/EN/productlist/node/1310>

Meritek Product Series: <http://www.meritekusa.com/EN/products>

*Specifications subject to change without notice.