

## FEATURES

SMI chip inductors are Mag. Layers' line of high performance wound chip inductors. The SMI chip inductors are constructed with a wire wound structure and have a higher current capacity than multilayer chip inductors. SMI chip inductors have high quality characteristics suitable for your design needs.

### Excellent Inductor Characteristics

SMI chip inductors have high Q values and high self-resonant frequencies.

### Multiple Size Availability

SMI chip inductors are available in three sizes: 252018, 322522 and 453232.

## APPLICATIONS

The SMI chip inductors can be used in a variety of electronics, including:

- Computers
- Computer Peripherals
- Cordless Phones

## PRODUCT IDENTIFICATION

①      ②      ③      ④      ⑤  
 SMI - 453232 - R10 M □ □

- ① Product Code
- ② Dimensions
- ③ Inductance
- ④ Tolerance Code
- ⑤ Pattern Code

Code	Tolerance
J	± 5%
K	± 10%
M	± 20%

Code	Packaging
B	Bulk
T	Taped

## PRODUCT DIMENSIONS

The drawing shows two views of the inductor. The top view shows a rectangular component with dimensions A (total length), B (width), and D (length of the central ferrite core). Two leads of length E extend from the ends. The side view shows the thickness of the component as C, with the ferrite core width as F.

NOTE: Dimension in mm

	252018	322522	453232
A	2.5 ± 0.30	3.20 ± 0.40	4.5 ± 0.30
B	2.0 ± 0.30	2.50 ± 0.30	3.20 ± 0.30
C	1.8 ± 0.30	2.20 ± 0.30	3.20 ± 0.30
D	2.4 ± 0.30	2.90 ± 0.20	4.10 ± 0.30
E	0.40 ± 0.10	0.6	1.0
F	1.4	1.0	1.2

■ **PRODUCT SPECIFICATIONS (High Frequency Type)**

Part No.	Inductance ( $\mu$ H)	Q Min.	Test Frequency (MHz)	S.R.F.(MHz) Min.	R <sub>DC</sub> ( $\Omega$ ) Max.	I <sub>DC</sub> (mA) Max.	
SMI-252018-R12	0.12	30	25.2	600	0.37	520	
SMI-252018-R15	0.15			550	0.42	480	
SMI-252018-R18	0.18			500	0.46	460	
SMI-252018-R22	0.22			450	0.52	430	
SMI-252018-R27	0.27			425	0.56	420	
SMI-252018-R33	0.33			400	0.60	400	
SMI-252018-R39	0.39			375	0.65	375	
SMI-252018-R47	0.47			350	0.68	350	
SMI-252018-R56	0.56			300	0.75	325	
SMI-252018-R68	0.68			270	0.85	300	
SMI-252018-R82	0.82			250	1.00	260	
SMI-252018-1R0	1.0			7.96	220	1.10	245
SMI-252018-1R2	1.2				180	1.20	230
SMI-252018-1R5	1.5		135		1.30	220	
SMI-252018-1R8	1.8		100		1.45	210	
SMI-252018-2R2	2.2		75		1.55	200	
SMI-252018-2R7	2.7		55		1.70	195	

## ■ PRODUCT SPECIFICATIONS

Part No.	Inductance (μH)	Q Min.	Test Frequency (MHz)	S.R.F.(MHz) Min.	R <sub>DC</sub> (Ω) Max.	I <sub>DC</sub> (mA) Max.
SMI-252018-3R3	3.30	30	7.96	48	1.90	185
SMI-252018-3R9	3.90			43	2.10	180
SMI-252018-4R7	4.70			40	2.30	175
SMI-252018-5R6	5.60			36	2.50	170
SMI-252018-6R8	6.80			33	2.70	165
SMI-252018-8R2	8.20			30	3.05	160
SMI-252018-100	10.0	25	2.52	27	3.50	155
SMI-252018-120	12.0			23	3.80	150
SMI-252018-150	15.0			20	4.40	140
SMI-252018-180	18.0			18	4.80	130
SMI-252018-220	22.0			17	5.50	125
SMI-252018-270	27.0			16	6.30	115
SMI-252018-330	33.0			15	7.10	110
SMI-252018-390	39.0			14	9.50	90
SMI-252018-470	47.0			13	11.10	80
SMI-252018-560	56.0			20	0.796	12
SMI-252018-680	68.0	11	16.60			70
SMI-252018-820	82.0	10	19.00			65
SMI-252018-101	100.0	9	21.00			60

1. Tolerance of inductance: 0.12~0.82 μH: ±10% (K), 1~100 μH: ±5% (J) , ±10% (K)
2. IDC:Based on inductance change( $\Delta L/L_0 \leq -10\%$ ) and Based on temperature rise( $\Delta T:20^\circ\text{C Typ.}$ )

## ■ PRODUCT SPECIFICATIONS

Part No.	Inductance ( $\mu$ H)	Q Min.	Test Frequency (MHz)	S.R.F.(MHz) Min.	R <sub>DC</sub> ( $\Omega$ ) Max.	I <sub>DC</sub> (mA) Max.		
SMI-322522-R10	0.10	28	100	700	0.44	450		
SMI-322522-R12	0.12		25.2	500	0.22			
SMI-322522-R15	0.15			450	0.25			
SMI-322522-R18	0.18			400	0.28			
SMI-322522-R22	0.22			350	0.32			
SMI-322522-R27	0.27			320	0.36			
SMI-322522-R33	0.33			300	0.40			
SMI-322522-R39	0.39			250	0.45			
SMI-322522-R47	0.47			220	0.50			
SMI-322522-R56	0.56			180	0.55			
SMI-322522-R68	0.68			160	0.60			
SMI-322522-R82	0.82			140	0.65			
SMI-322522-1R0	1.00	30		7.96	120		0.70	400
SMI-322522-1R2	1.20				100		0.75	390
SMI-322522-1R5	1.50				85	0.85	370	
SMI-322522-1R8	1.80		80		0.90	350		
SMI-322522-2R2	2.20		75		1.00	320		
SMI-322522-2R7	2.70		70		1.10	290		
SMI-322522-3R3	3.30		60		1.20	260		
SMI-322522-3R9	3.90		55		1.30	250		
SMI-322522-4R7	4.70		50		1.50	220		
SMI-322522-5R6	5.60		45		1.60	200		
SMI-322522-6R8	6.80		40		1.80	180		
SMI-322522-8R2	8.20		35		2.00	170		
SMI-322522-100	10.0		2.52		30	2.10	150	
SMI-322522-120	12.0				25	2.50	140	
SMI-322522-150	15.0	20		2.80	130			
SMI-322522-180	18.0	20		3.30	120			
SMI-322522-220	22.0	20		3.70	110			
SMI-322522-270	27.0	20		5.00	80			
SMI-322522-330	33.0	30		17	5.60	70		

## ■ PRODUCT SPECIFICATIONS

Part No.	Inductance (μH)	Q Min.	Test Frequency (MHz)	S.R.F.(MHz) Min.	R <sub>DC</sub> (Ω) Max.	I <sub>DC</sub> (mA) Max.
SMI-322522-390	39.0	30	2.52	16	6.40	65
SMI-322522-470	47.0			15	7.00	60
SMI-322522-560	56.0			13	8.00	55
SMI-322522-680	68.0			12	9.00	50
SMI-322522-820	82.0			11	10.0	45
SMI-322522-101	100.0	20	0.796	10	11.0	40

1. Tolerance of inductance: 0.10~0.56H K(±10%),M(±20%)

0.68~100H J(±5%),K(±10%),M(±20%)

2. IDC:Based on inductance change( $\Delta L/L_0 \leq -10\%$ ) and Based on temperature rise( $\Delta T:20^\circ\text{C Typ.}$ )

Part No.	Inductance (μH)	Q Min.	Test Frequency (MHz)	S.R.F.(MHz) Min.	R <sub>DC</sub> (Ω) Max.	I <sub>DC</sub> (mA) Max.
SMI-453232-R10	0.10	30	25.2	300	0.44	450
SMI-453232-R12	0.12			280	0.22	
SMI-453232-R15	0.15			250	0.25	
SMI-453232-R18	0.18			220	0.28	
SMI-453232-R22	0.22			200	0.32	
SMI-453232-R27	0.27			180	0.36	
SMI-453232-R33	0.33			165	0.40	
SMI-453232-R39	0.39			150	0.45	
SMI-453232-R47	0.47			145	0.50	
SMI-453232-R56	0.56			140	0.55	
SMI-453232-R68	0.68	50	7.96	135	0.60	
SMI-453232-R82	0.82			130	0.67	
SMI-453232-1R0	1.00			100	0.50	450
SMI-453232-1R2	1.20			80	0.55	430
SMI-453232-1R5	1.50			70	0.60	410
SMI-453232-1R8	1.80			60	0.65	390
SMI-453232-2R2	2.20			55	0.70	380
SMI-453232-2R7	2.70			50	0.75	370
SMI-453232-3R3	3.30			45	0.80	355
SMI-453232-3R9	3.90			40	0.90	330
SMI-453232-4R7	4.70	35	1.00	315		
SMI-453232-5R6	5.60	33	1.10	300		
SMI-453232-6R8	6.80	27	1.20	285		

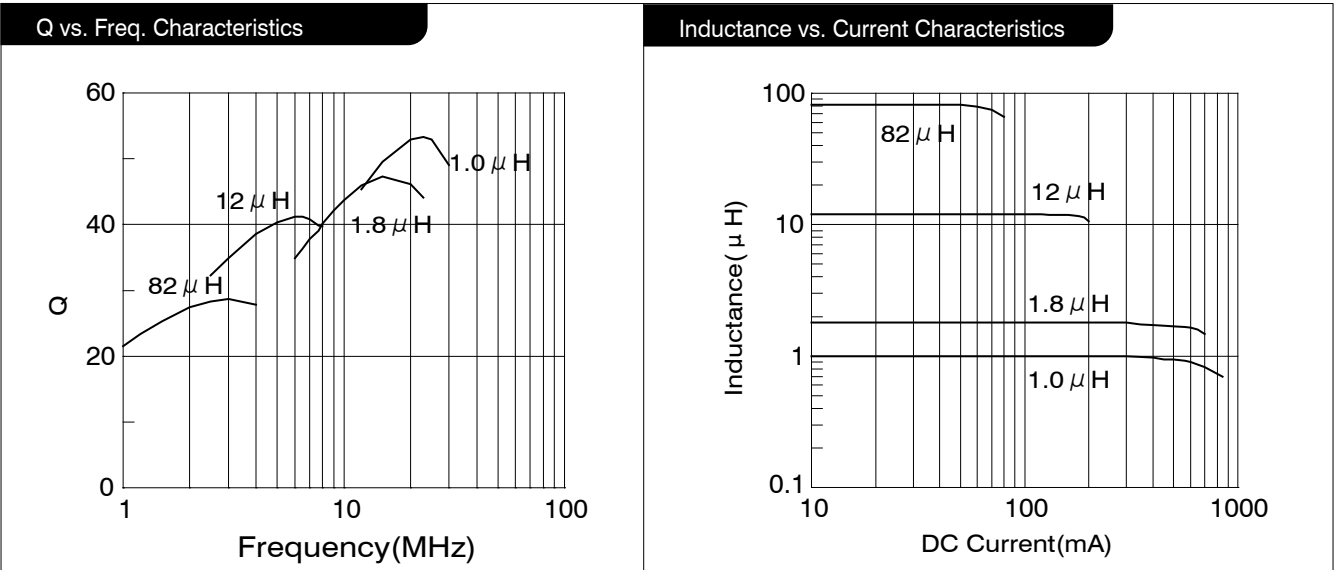
## ■ PRODUCT SPECIFICATION

Part No.	Inductance ( $\mu$ H)	Q Min.	Test Frequency (MHz)	S.R.F.(MHz) Min.	R <sub>DC</sub> ( $\Omega$ ) Max.	I <sub>DC</sub> (mA) Max.	
SMI-453232-8R2	8.20	50	2.52	7.96	23	1.40	270
SMI-453232-100	10.0			20	1.60	250	
SMI-453232-120	12.0			18	2.00	225	
SMI-453232-150	15.0			17	2.50	200	
SMI-453232-180	18.0			15	2.80	190	
SMI-453232-220	22.0			13	3.20	180	
SMI-453232-270	27.0			12	3.60	170	
SMI-453232-330	33.0			11	4.00	160	
SMI-453232-390	39.0			10	4.50	150	
SMI-453232-470	47.0			9.0	5.00	140	
SMI-453232-560	56.0			8.0	5.50	135	
SMI-453232-680	68.0			8.0	6.00	130	
SMI-453232-820	82.0			8.0	7.00	120	
SMI-453232-101	100			40	0.796	7.0	8.00
SMI-453232-121	120	6.0	9.00			105	
SMI-453232-151	150	5.0	9.50			102	
SMI-453232-181	180	4.0	12.0			100	
SMI-453232-221	220	3.0	18.0			92	
SMI-453232-271	270	20.0	20.0			85	
SMI-453232-331	330	23.0	23.0			80	
SMI-453232-391	390	30	2.0	3.0	26.0	62	
SMI-453232-471	470			30.0	50		
SMI-453232-561	560			40.0	45.0	30	
SMI-453232-681	680			45.0	50.0		
SMI-453232-821	820			50.0			
SMI-453232-102	1000	20	0.252	2.0	50.0		

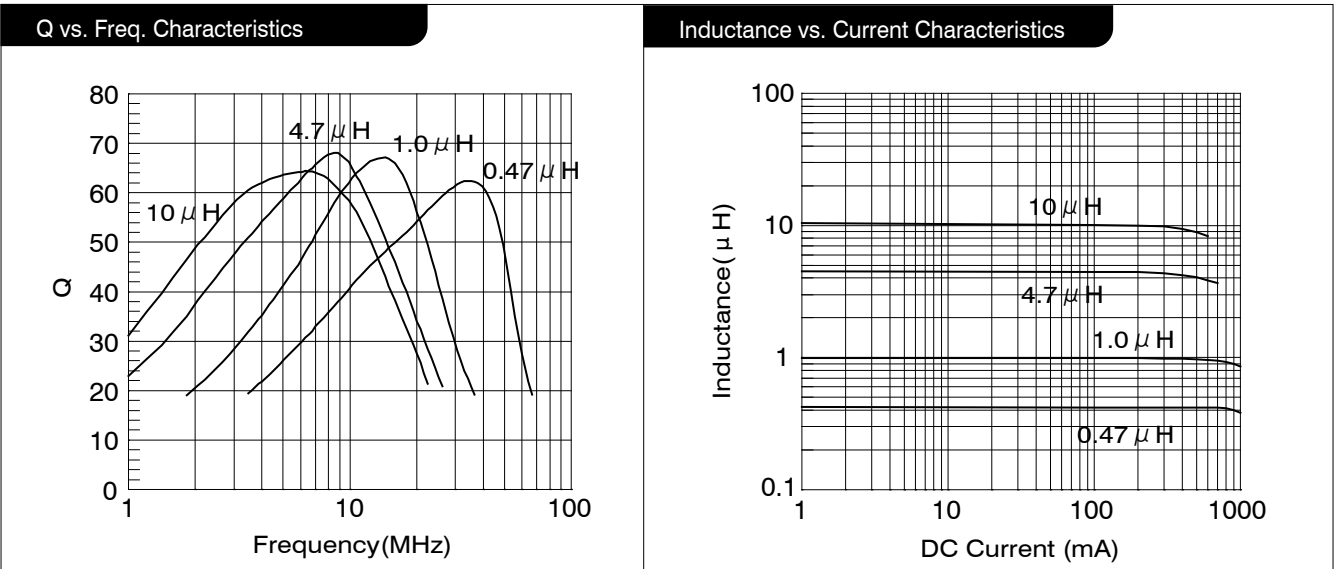
1. Tolerance of inductance: J( $\pm 5\%$ ),K( $\pm 10\%$ ),M( $\pm 20\%$ )

2. IDC:Based on inductance change( $\Delta L/L_0 \leq -10\%$ ) and Based on temperature rise( $\Delta T:20^\circ\text{C Typ.}$ )

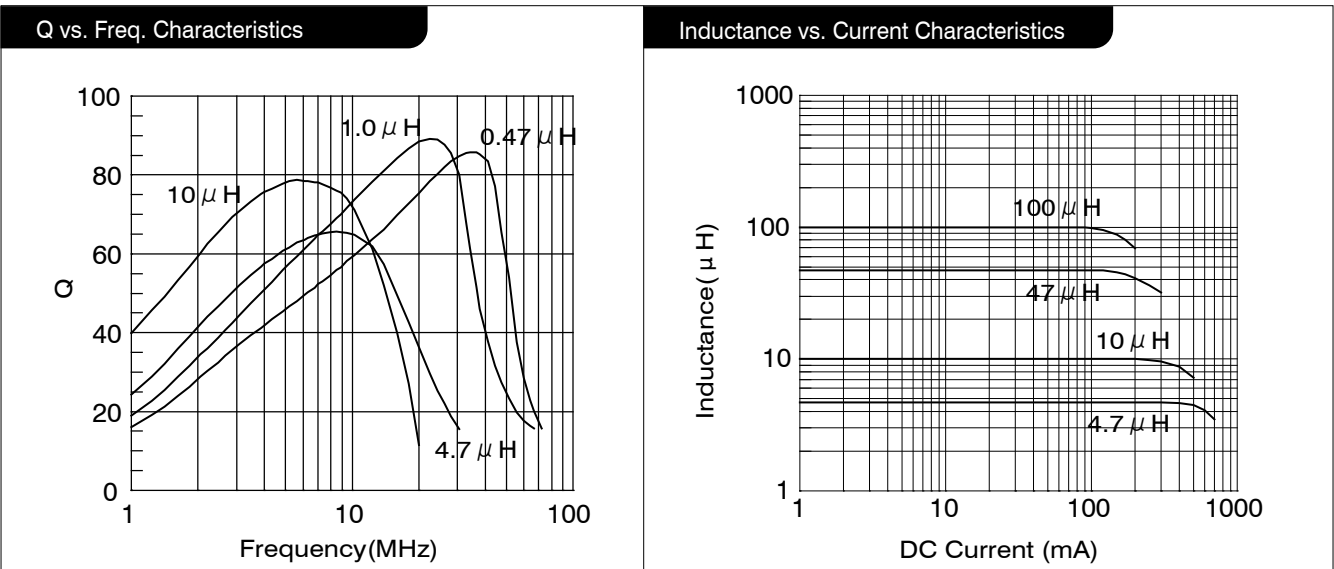
**TYPICAL ELECTRICAL CHARACTERISTIC CURVES (SMI-252018)**



**TYPICAL ELECTRICAL CHARACTERISTIC CURVES (SMI-322522)**



**TYPICAL ELECTRICAL CHARACTERISTIC CURVES (SMI-453232)**



Wire Wound SMD Type