

Data Sheet

Customer: _____

Product: Multilayer Ferrite Chip Inductor – SMI Series _____

Size : 0603/0805/0806/1008/1206 _____

Issued Date: 01-Jul.-2026 _____

Edition: Ver. 1 _____

Record of change

Date	Ver.	Description	Page
01-Jul.-2026	1		

HITANO ENTERPRISE CORP.

7F-7, No. 3, Wu Chuan 1st Road, New Taipei Industrial Park,

New Taipei City, TAIWAN, R.O.C.

Tel: +886 2 2299 1331 (Rep.)

Fax: +886 2 2298 2466, 2298 2969

Prepared by	Checked by	Approved by	Accepted by (customer)
01-Jul.-2026	01-Jul.-2026	01-Jul.-2026	
Randy Yu	Michelle Lin	Arthur Su	

MULTILAYER FERRITE CHIP INDUCTOR

SMI SERIES



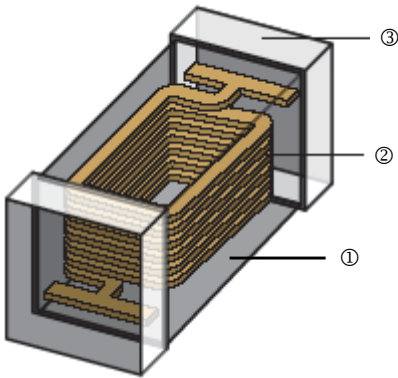
■ Features

- Closed magnetic circuit avoids crosstalk
- Suitable for high density installation and re-flow soldering
- Sizes 0603 / 0805 / 0806 / 1008 / 1206

■ Applications

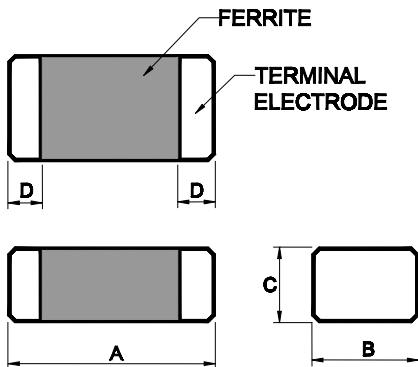
- Personal Computers
- Portable Equipment
- CD-ROM, Hard Disk, Modem, Printers
- DC-DC Converters
- DSC, DVC, PDA, DVD and HDD

■ Construction



① Ferrite	② Internal Electrode	③ Electrode Plating (Ag/Ni/Sn)
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■ Dimensions




Type	Size (Inch)	A mm	B mm	C mm	D mm	Weight (g) (1000pcs)
SMI0603F	0603	1.60±0.20	0.80±0.20	0.80±0.20	0.30±0.20	6.2
SMI0805F(≤2.2μH)	0805	2.00±0.20	1.25±0.20	0.90±0.20	0.50±0.30	10
SMI0805F(≥2.7μH)	0805	2.00±0.20	1.25±0.20	1.25±0.20	0.50±0.30	10
SMI1206F	1206	3.20±0.20	1.60±0.20	1.10±0.20	0.50±0.30	30
SMI0805H	0805	2.00±0.20	1.25±0.20	0.90±0.10	0.50±0.20	10
SMI0806H	0806	2.00±0.15	1.60±0.15	0.90±0.10	0.50±0.20	12
SMI1008H	1008	2.50±0.20	2.00±0.20	0.90±0.10	0.60±0.20	21

MULTILAYER FERRITE CHIP INDUCTOR

SMI SERIES

Part Numbering

SMI	0603	F	I	47N	K	
SERIES	SIZE	TYPE	PACKAGE	INDUCTANCE	TOLERANCE	INTERNAL CODE
	0603	F = Standard	T= Tape&Reel	47N= 47nH	K= ±10%	
	0805	H = High Current		R27= 270nH	M= ±20%	
	0806			1R0 = 1000nH		
	1008					
	1206					

Electrical Specifications

Size 0603 Standard Type (:Tolerance) :

Part No.	Inductance (nH)	Tolerance	L/Q Test Condition	Q min.	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
SMI0603FT47N□□□	47	±20%	50MHz, 200mV	10	260	0.30	50
SMI0603FT56N□□□	56	±20%	50MHz, 200mV	10	255	0.30	50
SMI0603FT68N□□□	68	±20%	50MHz, 200mV	10	250	0.30	50
SMI0603FT82N□□□	82	±20%	50MHz, 200mV	10	245	0.30	50
SMI0603FTR10□□□	100	±10, ±20%	25MHz, 200mV	15	240	0.50	50
SMI0603FTR12□□□	120	±10, ±20%	25MHz, 200mV	15	205	0.50	50
SMI0603FTR15□□□	150	±10, ±20%	25MHz, 200mV	15	180	0.60	50
SMI0603FTR18□□□	180	±10, ±20%	25MHz, 200mV	15	165	0.60	50
SMI0603FTR22□□□	220	±10, ±20%	25MHz, 200mV	15	150	0.80	50
SMI0603FTR27□□□	270	±10, ±20%	25MHz, 200mV	15	136	0.80	50
SMI0603FTR33□□□	330	±10, ±20%	25MHz, 200mV	15	125	0.85	35
SMI0603FTR39□□□	390	±10, ±20%	25MHz, 200mV	15	110	1.00	35
SMI0603FTR47□□□	470	±10, ±20%	25MHz, 200mV	15	105	1.35	35
SMI0603FTR56□□□	560	±10, ±20%	25MHz, 200mV	15	95	1.55	35
SMI0603FTR68□□□	680	±10, ±20%	25MHz, 200mV	15	85	1.70	35
SMI0603FTR82□□□	820	±10, ±20%	25MHz, 200mV	15	75	2.10	35
SMI0603FT1R0□□□	1000	±10, ±20%	10MHz, 200mV	35	65	0.60	25
SMI0603FT1R2□□□	1200	±10, ±20%	10MHz, 200mV	35	60	0.80	25
SMI0603FT1R5□□□	1500	±10, ±20%	10MHz, 200mV	35	55	0.80	25
SMI0603FT1R5K-1	1500	±10%	10MHz, 200mV	35	65	0.80	25
SMI0603FT1R8□□□	1800	±10, ±20%	10MHz, 200mV	35	50	0.95	25
SMI0603FT2R2□□□	2200	±10, ±20%	10MHz, 200mV	35	45	1.55	15
SMI0603FT2R7□□□	2700	±10, ±20%	10MHz, 200mV	35	40	1.35	15
SMI0603FT3R3□□□	3300	±10, ±20%	10MHz, 200mV	35	38	1.55	15
SMI0603FT3R9□□□	3900	±10, ±20%	10MHz, 200mV	35	35	1.70	15
SMI0603FT4R7□□□	4700	±10, ±20%	10MHz, 200mV	35	33	2.10	15
SMI0603FT5R6□□□	5600	±10, ±20%	4MHz, 200mV	35	22	1.55	5
SMI0603FT6R8□□□	6800	±10, ±20%	4MHz, 200mV	35	20	1.70	5
SMI0603FT8R2□□□	8200	±10, ±20%	4MHz, 60 mV	30	18	2.10	5
SMI0603FT100□□□	10000	±10, ±20%	2MHz, 60mV	30	17	1.85	3
SMI0603FT100□-3	10000	±10, ±20%	2MHz, 100mV	30	17	1.30	100
SMI0603FT220□□□	22000	±10, ±20%	1MHz, 60mV	15	11	2.10	1

Operating Temperature: -40°C to +125°C

MULTILAYER FERRITE CHIP INDUCTOR

SMI SERIES

Size 0805 Standard Type (□:Tolerance) :

Part No.	Inductance (nH)	Tolerance	L/Q Test Condition	Q min.	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
SMI0805FT47N□□□	47	±20%	50MHz, 200mV	20	320	0.20	300
SMI0805FT56N□□□	56	±20%	50MHz, 200mV	20	320	0.20	300
SMI0805FT68N□□□	68	±20%	50MHz, 200mV	20	280	0.20	300
SMI0805FT82N□□□	82	±20%	50MHz, 200mV	20	255	0.20	300
SMI0805FTR10□□□	100	±10, ±20%	25MHz, 200mV	25	235	0.30	250
SMI0805FTR12□□□	120	±10, ±20%	25MHz, 200mV	25	220	0.30	250
SMI0805FTR15□□□	150	±10, ±20%	25MHz, 200mV	25	200	0.40	250
SMI0805FTR18□□□	180	±10, ±20%	25MHz, 200mV	25	185	0.40	250
SMI0805FTR22□□□	220	±10, ±20%	25MHz, 200mV	25	170	0.50	250
SMI0805FTR27□□□	270	±10, ±20%	25MHz, 200mV	25	150	0.50	250
SMI0805FTR33□□□	330	±10, ±20%	25MHz, 200mV	25	145	0.55	250
SMI0805FTR39□□□	390	±10, ±20%	25MHz, 200mV	25	135	0.65	200
SMI0805FTR47□□□	470	±10, ±20%	25MHz, 200mV	25	125	0.65	200
SMI0805FTR56□□□	560	±10, ±20%	25MHz, 200mV	25	115	0.75	150
SMI0805FTR68□□□	680	±10, ±20%	25MHz, 200mV	25	105	0.80	150
SMI0805FTR82□□□	820	±10, ±20%	25MHz, 200mV	25	100	1.00	150
SMI0805FT1R0□□□	1000	±10, ±20%	10MHz, 200mV	45	75	0.40	50
SMI0805FT1R2□□□	1200	±10, ±20%	10MHz, 200mV	45	65	0.50	50
SMI0805FT1R5□□□	1500	±10, ±20%	10MHz, 200mV	45	60	0.50	50
SMI0805FT1R8□□□	1800	±10, ±20%	10MHz, 200mV	45	55	0.60	50
SMI0805FT2R2□□□	2200	±10, ±20%	10MHz, 200mV	45	50	0.65	30
SMI0805FT2R7□□□	2700	±10, ±20%	10MHz, 200mV	45	45	0.75	30
SMI0805FT3R3□□□	3300	±10, ±20%	10MHz, 200mV	45	41	0.80	30
SMI0805FT3R9□□□	3900	±10, ±20%	10MHz, 200mV	45	38	0.90	30
SMI0805FT4R7□□□	4700	±10, ±20%	10MHz, 200mV	45	35	1.00	30
SMI0805FT5R6□□□	5600	±10, ±20%	4MHz, 200mV	50	32	0.90	15
SMI0805FT6R8□□□	6800	±10, ±20%	4MHz, 200mV	50	29	1.00	15
SMI0805FT8R2□□□	8200	±10, ±20%	4MHz, 200mV	50	26	1.10	15
SMI0805FT100□□□	10000	±10, ±20%	2MHz, 60mV	50	24	1.15	15
SMI0805FT100M-4	10000	±20%	2MHz, 100mV	50	24	0.50	300
SMI0805FT120□□□	12000	±10, ±20%	2MHz, 60mV	50	22	1.25	15
SMI0805FT150□□□	15000	±10, ±20%	1MHz, 60mV	30	19	0.80	5
SMI0805FT180□□□	18000	±10, ±20%	1MHz, 60mV	30	18	0.90	5
SMI0805FT220□□□	22000	±10, ±20%	1MHz, 60mV	30	16	1.10	5

■ Operating Temperature: -40°C to +125°C

MULTILAYER FERRITE CHIP INDUCTOR

SMI SERIES

Size 1206 Standard Type (□:Tolerance) :

Part No.	Inductance (nH)	Tolerance	L/Q Test Condition	Q min.	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
SMI1206FT47N□□□	47	±20%	50MHz, 200mV	20	320	0.15	300
SMI1206FT56N□□□	56	±20%	50MHz, 200mV	20	280	0.25	300
SMI1206FT68N□□□	68	±20%	50MHz, 200mV	20	280	0.25	300
SMI1206FT82N□□□	82	±20%	50MHz, 200mV	20	250	0.25	300
SMI1206FTR10□□□	100	±10, ±20%	25MHz, 200mV	20	235	0.25	250
SMI1206FTR12□□□	120	±10, ±20%	25MHz, 200mV	20	220	0.30	250
SMI1206FTR15□□□	150	±10, ±20%	25MHz, 200mV	20	200	0.30	250
SMI1206FTR18□□□	180	±10, ±20%	25MHz, 200mV	20	185	0.40	250
SMI1206FTR22□□□	220	±10, ±20%	25MHz, 200mV	20	170	0.40	250
SMI1206FTR27□□□	270	±10, ±20%	25MHz, 200mV	20	150	0.50	250
SMI1206FTR33□□□	330	±10, ±20%	25MHz, 200mV	20	145	0.60	250
SMI1206FTR39□□□	390	±10, ±20%	25MHz, 200mV	25	135	0.50	200
SMI1206FTR47□□□	470	±10, ±20%	25MHz, 200mV	25	125	0.60	200
SMI1206FTR56□□□	560	±10, ±20%	25MHz, 200mV	25	115	0.70	150
SMI1206FTR68□□□	680	±10, ±20%	25MHz, 200mV	25	105	0.80	150
SMI1206FTR82□□□	820	±10, ±20%	25MHz, 200mV	25	100	0.90	150
SMI1206FT1R0□□□	1000	±10, ±20%	10MHz, 200mV	45	75	0.40	100
SMI1206FT1R2□□□	1200	±10, ±20%	10MHz, 200mV	45	65	0.50	100
SMI1206FT1R5□□□	1500	±10, ±20%	10MHz, 200mV	45	60	0.50	80
SMI1206FT1R8□□□	1800	±10, ±20%	10MHz, 200mV	45	55	0.50	70
SMI1206FT2R2□□□	2200	±10, ±20%	10MHz, 200mV	45	50	0.60	60
SMI1206FT2R7□□□	2700	±10, ±20%	10MHz, 200mV	45	45	0.60	60
SMI1206FT3R3□□□	3300	±10, ±20%	10MHz, 200mV	45	41	0.70	60
SMI1206FT3R9□□□	3900	±10, ±20%	10MHz, 200mV	45	38	0.80	50
SMI1206FT4R7□□□	4700	±10, ±20%	10MHz, 200mV	45	35	0.90	50
SMI1206FT5R6□□□	5600	±10, ±20%	4MHz, 200mV	45	32	0.70	25
SMI1206FT6R8□□□	6800	±10, ±20%	4MHz, 200mV	45	29	0.80	25
SMI1206FT8R2□□□	8200	±10, ±20%	4MHz, 200mV	45	26	0.90	25
SMI1206FT100□□□	10000	±10, ±20%	2MHz, 60mV	45	24	1.00	25
SMI1206FT120□□□	12000	±10, ±20%	2MHz, 60mV	45	22	1.05	15
SMI1206FT150□□□	15000	±10, ±20%	1MHz, 60mV	35	19	0.70	5
SMI1206FT180□□□	18000	±10, ±20%	1MHz, 60mV	35	18	0.75	5
SMI1206FT220□□□	22000	±10, ±20%	1MHz, 60mV	35	16	0.90	5
SMI1206FT270□□□	27000	±10, ±20%	1MHz, 60mV	35	14	0.90	5
SMI1206FT330□□□	33000	±10, ±20%	1MHz, 60mV	35	13	1.05	5
SMI1206FT470□□□	47000	±20%	2MHz, 100mV	40	10	3.40	10

■ Operating Temperature: -40°C to +125°C

MULTILAYER FERRITE CHIP INDUCTOR

SMI SERIES

Electrical Specifications

Size 0805 High Current Type (□: Tolerance) :

Part No.	Inductance (uH)	Tolerance	Test Condition	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
SMI0805HTR47□□□	0.47	±20%	1MHz, 250mV	100	0.125	1100
SMI0805HTR68□□□	0.68	±20%	1MHz, 250mV	100	0.150	1000
SMI0805HTR82□□□	0.82	±20%	1MHz, 250mV	90	0.175	900
SMI0805HT1R0□□□	1.0	±20%	1MHz, 250mV	90	0.200	800
SMI0805HT1R2□□□	1.2	±20%	1MHz, 250mV	80	0.200	800
SMI0805HT1R5□□□	1.5	±20%	1MHz, 250mV	70	0.275	700
SMI0805HT1R8□□□	1.8	±20%	1MHz, 250mV	60	0.275	700
SMI0805HT2R2□□□	2.2	±20%	1MHz, 250mV	50	0.313	600
SMI0805HT3R3□□□	3.3	±20%	1MHz, 250mV	40	0.275	500
SMI0805HT4R7□□□	4.7	±20%	1MHz, 250mV	30	0.375	500

Operating Temperature: -40°C to +125°C

Size 0806 High Current Type (□: Tolerance) :

Part No.	Inductance (uH)	Tolerance	Test Condition	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
SMI0806HTR47□□□	0.47	±20%	1MHz, 250mV	100	0.182	1500
SMI0806HTR68□□□	0.68	±20%	1MHz, 250mV	90	0.195	1500
SMI0806HTR82□□□	0.82	±20%	1MHz, 250mV	80	0.208	1500
SMI0806HT1R0□□□	1.0	±20%	1MHz, 250mV	60	0.208	1400
SMI0806HT1R2□□□	1.2	±20%	1MHz, 250mV	60	0.208	1400
SMI0806HT1R5□□□	1.5	±20%	1MHz, 250mV	50	0.260	1200
SMI0806HT1R8□□□	1.8	±20%	1MHz, 250mV	50	0.260	1200
SMI0806HT2R2□□□	2.2	±20%	1MHz, 250mV	40	0.286	1200
SMI0806HT3R3□□□	3.3	±20%	1MHz, 250mV	30	0.312	1100
SMI0806HT4R7□□□	4.7	±20%	1MHz, 250mV	20	0.390	1100

Operating Temperature: -40°C to +125°C

Size 1008 High Current Type (□: Tolerance) :

Part No.	Inductance (uH)	Tolerance	Test Condition	SRF (MHz) min.	DCR (Ω) Max.	IDC (mA) max.
SMI1008HTR47□□□	0.47	±20%	1MHz, 250mV	100	0.088	1800
SMI1008HTR68□□□	0.68	±20%	1MHz, 250mV	90	0.113	1700
SMI1008HTR82□□□	0.82	±20%	1MHz, 250mV	80	0.125	1700
SMI1008HT1R0□□□	1.0	±20%	1MHz, 250mV	60	0.138	1600
SMI1008HT1R2□□□	1.2	±20%	1MHz, 250mV	60	0.138	1600
SMI1008HT1R5□□□	1.5	±20%	1MHz, 250mV	50	0.163	1500
SMI1008HT1R8□□□	1.8	±20%	1MHz, 250mV	50	0.163	1500
SMI1008HT2R2□□□	2.2	±20%	1MHz, 250mV	40	0.213	1300
SMI1008HT3R3□□□	3.3	±20%	1MHz, 250mV	30	0.200	1200
SMI1008HT4R7□□□	4.7	±20%	1MHz, 250mV	25	0.250	1100

Operating Temperature: -40°C to +125°C

MULTILAYER FERRITE CHIP INDUCTOR

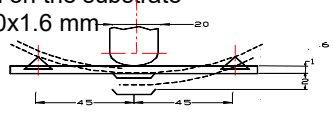
SMI SERIES

Environmental Characteristics

Electrical Performance Test

Item	Requirement	Test Method
Inductance	Refer to standard electrical characteristic spec.	HP4291B
Q		HP4291B
SRF		HP4291B
DC Resistance RDC		Agilent 34401A
IDC		The DC current value having temperature increased 40 °C after thru DC current 2 hours at ambient temperature

Mechanical Performance Test

Item	Requirement	Test Method
Resistance to Soldering Heat	Appearance: No damage More than 75% of the terminal. Electrode should be covered with solder.	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.
Solderability	The electrodes shall be at least 90% covered with new solder coating	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.
Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the ferrite.	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6 mm Deflection: 2.0 mm Keeping Time: 30 sec. 
Vibration		*For 0402, substrate dimension is 100x40x0.8 mm 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

Climatic Test

Item	Requirement	Test Method															
Damp Heat with Load	Appearance: No damage L change: within±20% of initial value	Temperature: 40±2°C Relative Humidity: 90 ~ 95% Time: 1000 hrs Measured after exposure in the room condition for 24 hrs															
Temperature Cycle		One cycle: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25±2</td> <td>3</td> </tr> <tr> <td>3</td> <td>85±3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25±2</td> <td>3</td> </tr> </tbody> </table> Total: 100 cycles Measured after exposure in the room condition for 24 hrs	Step	Temperature (°C)	Time (min.)	1	-40±3	30	2	25±2	3	3	85±3	30	4	25±2	3
Step		Temperature (°C)	Time (min.)														
1		-40±3	30														
2	25±2	3															
3	85±3	30															
4	25±2	3															
High Temperature Resistance	Temperature: 85±3°C Relative Humidity: 20% Applied Current: Rated Current Time: 1000 hrs Measured after exposure in the room condition for 24 hrs																
Low Temperature Resistance	Temperature: -40±3°C Relative Humidity: 0% Time: 1000 hrs Measured after exposure in the room condition for 24 hrs																

■ Storage Temperature: 15~28°C; Humidity < 80%RH

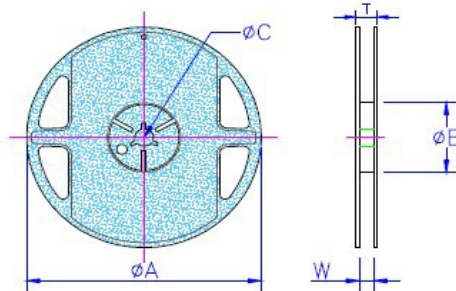
■ Shelf life: 1 years max

MULTILAYER FERRITE CHIP INDUCTOR

SMI SERIES

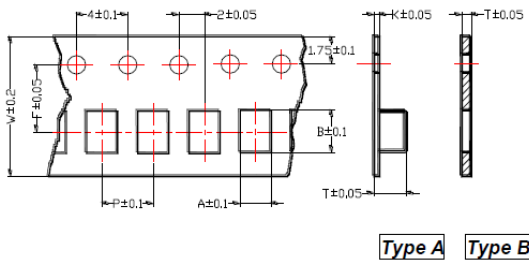
■ Packaging

Reel Specifications



Type	A mm	B mm	C mm	W mm	T mm	Quantity (EA)	
						Paper Tape (Type B)	Polystyrene Tape (Type A)
SMI0603F	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	4,000	-
SMI0805F(≤2.2uH)	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	4,000	-
SMI0805F(≥2.7uH)	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	-	3,000
SMI1206F	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	-	3,000
SMI0805H	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	4,000	-
SMI0806H	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	-	3,000
SMI1008H	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	-	3,000

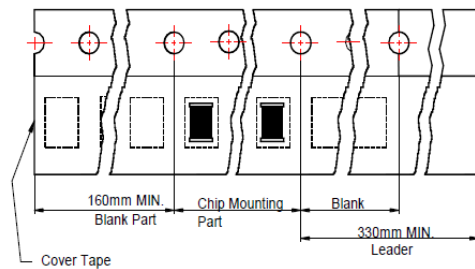
Taping Specifications



Tape Material

Carrier tape : Polystyrene for 0805(≤2.2uH) 1206
Paper for 0603 0805(≥2.7uH)

Cover type : Polystyrene



Type	A mm	B mm	T mm	W mm	P mm	F mm	K mm	Tape Type
SMI0603F	1.05	1.85	0.95	8.0	4.0	3.5	-	B
SMI0805F(≤2.2uH)	1.50	2.42	0.95	8.0	4.0	3.5	-	B
SMI0805F(≥2.7uH)	1.50	2.35	1.45	8.0	4.0	3.5	0.22	A
SMI1206F	1.88	3.50	1.27	8.0	4.0	3.5	0.22	A
SMI0805H	1.45	2.25	0.95	8.0	4.0	3.5	-	B
SMI0806H	1.88	2.40	1.23	8.0	4.0	3.5	0.23	A
SMI1008H	2.20	2.85	1.40	8.0	4.0	3.5	0.23	A

Note:

1. Please make sure that your product is has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment agreed upon between you and us. You are requested not to use our product deviating from such agreement.