Features

1. Perfect for high density surface mount applications since magnetic shield eliminates crosstalk.
2. Highly reliable in wide temperature and humidity range. Superior Q characteristics in wide frequency.
3. Terminal electrode has excellent solder heat resistance.

Applications

1. Prevention of electromagnetic interference to signals on the secondary side of electronic equipment.

Ordering Information

FI	-	A	1608	-	680	-	K	J	T
(1)		(2)	(3)		(4)		(5)	(6)	(7)

(1) Series

(2) Material & Design

(3) Dimensions
The first two digits : length(㎜)
The last two digits : width(㎜)

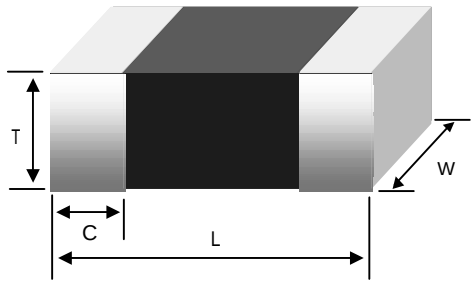
(4) Inductance

(5) Tolerance
K : ± 10%
M : ± 20%

(6) Termination
J : Nickel barrier

(7) Packing
B : Bulk Packing
T : Tape & Reel (Φ 178㎜ [7inches])
L : Tape & Reel (Φ 254㎜ [10inches])

Shape and Dimensions



Unit : mm [inches]

Type	L	W	T	C
FI-□1608	1.6±0.15 [.063±.006]	0.8±0.15 [.031±.006]	0.8±0.15 [.031±.006]	0.30±0.20 [.012±.008]
FI-□2012	2.0±0.2 [.079±.008]	1.25±0.2 [.049±.008]	1.25±0.2 [.049±.008]	0.50±0.30 [.020±.012]
FI-□3216	3.2±0.2 [.126±.008]	1.6±0.2 [.063±.008]	1.3±0.2 [.051±.008]	0.50±0.30 [.020±.012]

Specifications

FI1608

Part No.	Inductance		Q		L, Q test frequency (MHz)	SRF(MHz)		DCR(mΩ)		Rated current (mA) max.
	μH	Tolerance	min.	typ.		min.	typ.	max.	typ.	
FI-A1608-270□□□	0.027	±10% ±20%	10	45	50	260	350	90	60	200
FI-A1608-470□□□	0.047		10	45	50	260	320	150	100	200
FI-A1608-560□□□	0.056		10	45	50	255	300	200	90	200
FI-A1608-680□□□	0.068		10	45	50	250	290	200	90	200
FI-A1608-820□□□	0.082		10	45	50	245	280	250	120	200
FI-A1608-101□□□	0.10	±10% ±20%	15	30	25	240	270	250	140	200
FI-A1608-121□□□	0.12		15	30	25	205	260	300	150	200
FI-A1608-151□□□	0.15		15	30	25	180	250	350	180	200
FI-A1608-181□□□	0.18		15	30	25	165	220	400	190	200
FI-A1608-221□□□	0.22		15	30	25	150	200	400	190	200
FI-A1608-271□□□	0.27		15	30	25	136	190	500	270	200
FI-A1608-331□□□	0.33		15	30	25	125	180	550	280	150
FI-A1608-391□□□	0.39		15	30	25	110	170	600	300	150
FI-A1608-471□□□	0.47		15	30	25	105	160	700	390	150
FI-A1608-561□□□	0.56		15	30	25	95	150	900	500	150
FI-A1608-681□□□	0.68		15	30	25	80	140	900	500	150
FI-A1608-821□□□	0.82		15	30	25	75	130	1600	800	100
FI-B1608-102□□□	1.0		35	50	10	70	95	500	250	100
FI-B1608-122□□□	1.2		35	50	10	60	80	600	250	100
FI-B1608-152□□□	1.5		35	50	10	55	70	650	300	50
FI-B1608-182□□□	1.8		35	50	10	50	70	750	350	50
FI-B1608-222□□□	2.2		35	50	10	45	60	900	450	50
FI-B1608-272□□□	2.7		35	50	10	40	55	1000	600	50

* SRF : Self-Resonant Frequency. * DCR : DC Resistance

※ Parts with other Inductance Tolerance('J' ± 5%) can be provided upon Customer`s request.

FI2012

Part No.	Inductance		Q		L, Q test frequency (MHz)	SRF(MHz)		DCR(mΩ)		Rated current (mA) max.
	μH	Tolerance	min.	typ.		min.	typ.	max.	typ.	
FI-A2012-470□□□	0.048	±10% ±20%	20	60	50	320	400	100	50	300
FI-A2012-560□□□	0.056		20	60	50	300	380	150	80	300
FI-A2012-680□□□	0.068		20	60	50	280	350	200	80	300
FI-A2012-820□□□	0.082		20	60	50	255	320	200	80	300
FI-A2012-101□□□	0.10	±10% ±20%	25	50	25	235	300	200	90	250
FI-A2012-121□□□	0.12		25	50	25	220	280	200	65	250
FI-A2012-151□□□	0.15		25	50	25	200	250	200	60	250
FI-A2012-181□□□	0.18		25	50	25	185	230	200	100	250
FI-A2012-221□□□	0.22		25	50	25	170	220	250	100	250
FI-A2012-271□□□	0.27		25	50	25	150	200	300	150	250
FI-A2012-331□□□	0.33		25	50	25	145	180	300	150	250
FI-A2012-391□□□	0.39		30	50	25	135	170	400	190	200
FI-A2012-471□□□	0.47		30	50	25	125	160	400	190	200
FI-A2012-561□□□	0.56		30	50	25	115	150	400	280	150
FI-A2012-681□□□	0.68		30	50	25	105	135	500	300	150
FI-A2012-821□□□	0.82		30	50	25	100	125	600	350	150
FI-B2012-102□□□	1.0		45	75	10	75	105	300	120	100
FI-B2012-122□□□	1.2		45	75	10	65	95	400	140	100
FI-B2012-152□□□	1.5		45	75	10	60	85	400	140	100
FI-B2012-182□□□	1.8		45	75	10	55	75	400	160	100
FI-B2012-222□□□	2.2		45	80	10	50	70	400	200	50
FI-B2012-272□□□	2.7		45	80	10	45	65	500	250	50
FI-B2012-332□□□	3.3		45	80	10	40	55	500	270	50
FI-B2012-392□□□	3.9		45	80	10	38	50	1000	500	50
FI-B2012-472□□□	4.7		45	80	10	35	48	1400	700	50
FI-C2012-562□□□	5.6		50	60	4	32	45	500	250	50
FI-C2012-682□□□	6.8		50	60	4	29	40	600	330	25
FI-C2012-822□□□	8.2		50	60	4	26	36	700	380	25
FI-C2012-103□□□	10.0		50	60	2	24	33	800	450	25
FI-C2012-123□□□	12.0		50	60	2	22	30	800	470	25
FI-D2012-153□□□	15.0		30	40	1	19	27	1500	750	15
FI-D2012-183□□□	18.0		30	40	1	18	25	1500	810	15
FI-D2012-223□□□	22.0		30	40	1	16	22	700	350	5
FI-D2012-273□□□	27.0		30	40	1	14	20	800	450	5
FI-D2012-333□□□	33.0		30	40	0.4	13	18	1000	600	5

* SRF : Self-Resonant Frequency. * DCR : DC Resistance

※ Parts with other Inductance Tolerance('J' ± 5%) can be provided upon Customer`s request.

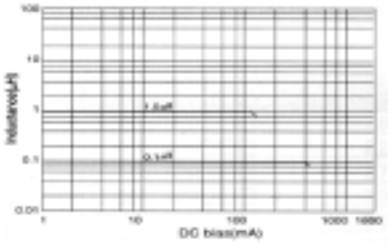
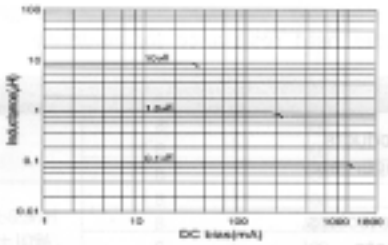
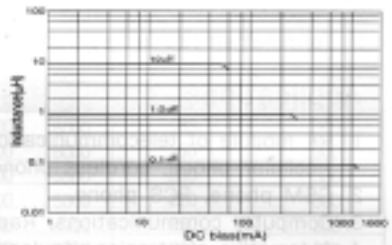
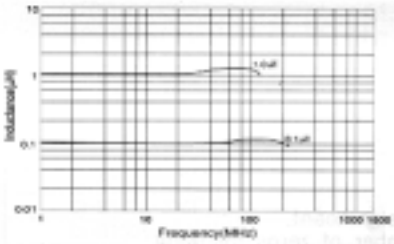
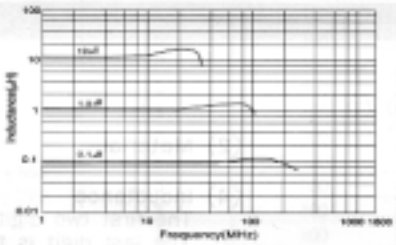
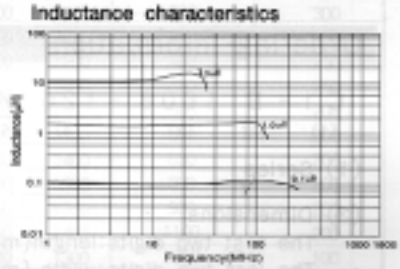
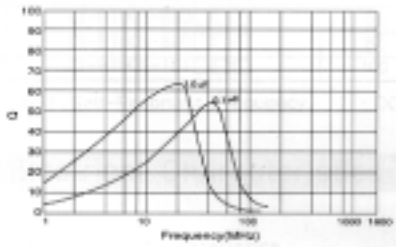
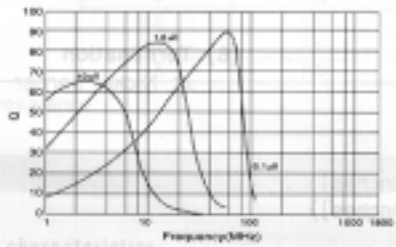
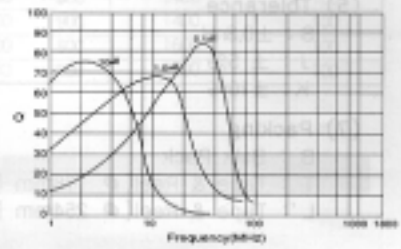
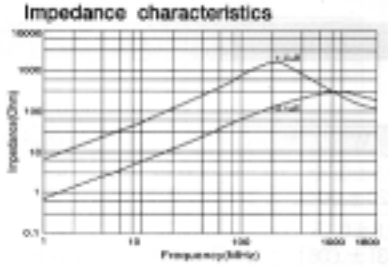
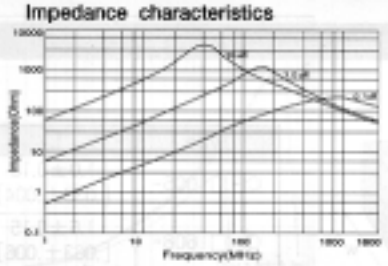
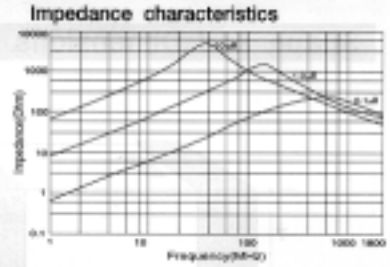
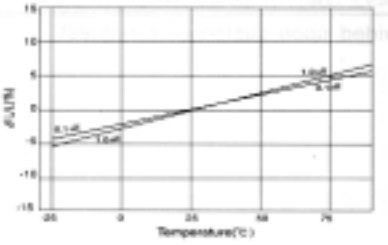
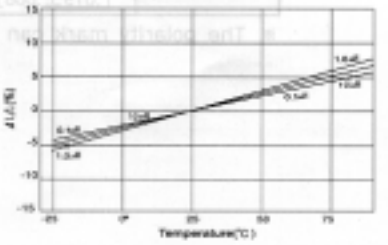
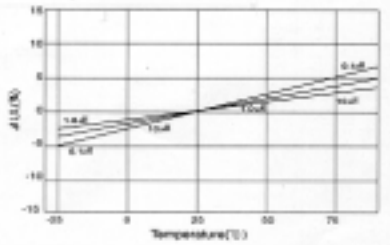
FI3216

Part No.	Inductance		Q		L, Q test frequency (MHz)	SRF(MHz)		DCR(mΩ)		Rated current (mA) max.
	μH	Tolerance	min.	typ.		min.	typ.	max.	typ.	
FI-A3216-470□□□	0.047	±10% ±20%	20	60	50	320	400	150	80	300
FI-A3216-560□□□	0.056		20	60	50	300	360	150	80	300
FI-A3216-680□□□	0.068		20	60	50	280	330	150	100	300
FI-A3216-820□□□	0.082		20	60	50	255	300	150	100	300
FI-A3216-101□□□	0.10	± 10% ± 20%	25	50	25	235	280	200	100	250
FI-A3216-121□□□	0.12		25	50	25	220	260	200	100	250
FI-A3216-151□□□	0.15		25	50	25	200	240	200	100	250
FI-A3216-181□□□	0.18		25	50	25	185	220	200	100	250
FI-A3216-221□□□	0.22		25	50	25	170	200	250	120	250
FI-A3216-271□□□	0.27		25	50	25	150	180	250	120	250
FI-A3216-331□□□	0.33		25	50	25	145	170	300	130	250
FI-A3216-391□□□	0.39		30	50	25	135	160	300	150	200
FI-A3216-471□□□	0.47		30	50	25	125	145	300	150	200
FI-A3216-561□□□	0.56		30	50	25	115	135	350	170	150
FI-A3216-681□□□	0.68		30	50	25	105	125	350	250	150
FI-A3216-821□□□	0.82		30	50	25	100	115	400	300	150
FI-B3216-102□□□	1.0		45	80	10	75	90	250	130	100
FI-B3216-122□□□	1.2		45	80	10	65	80	300	150	100
FI-B3216-152□□□	1.5		45	80	10	60	70	300	170	50
FI-B3216-182□□□	1.8		45	80	10	55	66	500	250	50
FI-B3216-222□□□	2.2		45	80	10	50	58	600	300	50
FI-B3216-272□□□	2.7		45	80	10	45	53	600	300	50
FI-B3216-332□□□	3.3		45	85	10	41	49	700	350	50
FI-B3216-392□□□	3.9		45	85	10	38	45	800	400	50
FI-B3216-472□□□	4.7		45	85	10	35	41	800	400	50
FI-C3216-562□□□	5.6	± 10% ± 20%	50	65	4	32	38	600	300	50
FI-C3216-682□□□	6.8		50	65	4	29	34	600	300	50
FI-C3216-822□□□	8.2		50	65	4	26	31	600	330	50
FI-C3216-103□□□	10.0		50	65	2	24	28	700	380	50
FI-C3216-123□□□	12.0		50	65	2	22	26	900	450	25
FI-C3216-153□□□	15.0		35	45	1	19	23	1100	550	25
FI-C3216-183□□□	18.0		35	45	1	18	21	1500	800	25
FI-C3216-223□□□	22.0		35	45	1	16	19	1500	800	25
FI-C3216-273□□□	27.0		35	45	1	14	17	1500	800	25
FI-C3216-333□□□	33.0		35	45	0.4	13	16	1600	850	25

* SRF : Self-Resonant Frequency. * DCR : DC Resistance
※ Test equipment : HP4291A + HP16192A
: HP4295a + HP16334A

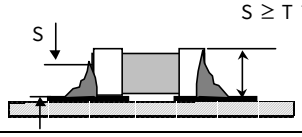
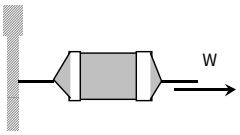
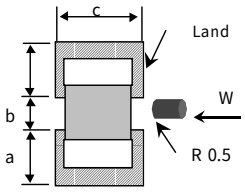
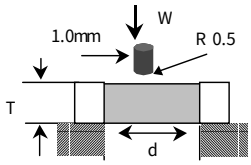
※ Parts with other Inductance Tolerance('J' ± 5%) can be provided upon Customer`s request.

Electrical Characteristics

1608	2012	3216
DC bias characteristics	DC bias characteristics	DC bias characteristics
		
Inductance characteristics	Inductance characteristics	Inductance characteristics
		
Q characteristics	Q characteristics	Q characteristics
		
Impedance characteristics	Impedance characteristics	Impedance characteristics
		
Temperature characteristics	Temperature characteristics	Temperature characteristics
		

RELIABILITY AND TEST CONDITIONS

CHIP FERRITE INDUCTORS

ITEM		REQUIREMENTS				TEST CONDITION
			1608	2012	3216	
Operating temp. range		-55℃~+125℃				-
Storage temp. & humidity range		40℃ max. , 70% RH max.				at packing condition
Resistance to solder heat		1.No damage such as cracks should be caused in chip element. 2.More than 75% of the terminal electrode shall be covered with new solder. 3.Inductance change : ±within 5% 4.Quality factor change : ±within 30%				Preheat temperature : 100 to 150℃ Preheat time : 1min Solder temperature : 260 ±10℃ Dipping time : 10 ±0.5sec.
Solderability		1.More than 90% of the terminal electrode shall be covered with new solder. 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%				Preheat temperature : 100 to 150℃ Preheat time : 1min Solder temperature : 230 ±10℃ Dipping time : 3 ±1sec.
Reflow soldering		1.More than 50% of the terminal electrode shall be covered with new solder. S ≥ T * 0.5 				Preheat temperature : 150℃ Preheat time : 1min Solder temperature : 230℃ Soldering time : 10 sec. Max. (Reflow soldering profile)
Tensile strengh (Terminalstrength)		1.No mechanical damage Unit : Kgf(W)				
	W	-	1.0	2.0	2.5	
Adhension of Terminal electrode (Flexure strength)		1.No mechanical damage Unit : mm (a,b,c), Kgf(W)				
	a	-	1.0	1.0	1.3	
	b	-	0.8	1.0	1.5	
	c	-	1.3	1.3	3.0	
	W	-	2.0	4.0	5.0	
Body strength (Bending strength)		1.The body shall not be damaged by forces applied on the right. Unit : mm (d), Kgf(W)				
	d	-	1.3	1.3	2.0	
	W	-	2.0	3.0	4.0	

CHIP FERRITE INDUCTORS

ITEM	REQUIREMENTS				TEST CONDITION
		1608	2012	3216	
Drop	1.No mechanical damage				Drop 10 times on a concrete Floor from a height of 91cm
Vibration	1.No mechanical damage				Frequency : 10~55~10Hz Amplitude : 1.52mm Direction and time : X,Y,Z directions for 2 hours
Thermal shock (Temperature cycle)	1.No mechanical damage 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%				Step1. –40 ±3℃ 30 ±3min. Step2. 85 ±3℃ 30 ±3min. Number of cycle : 100 times
Heat load resistance	1.No mechanical damage 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%				Temperature : 85 ±2℃ Applied current : rated current Time : 1,000 hours Measured at room ambient temperature after placing for 24 hours
Low temp. resistance	1.No mechanical damage 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%				Temperature : -40 ±5℃ Time : 1,000 hours Measured at room ambient temperature after placing for 24 hours
Humidity resistance	1.No mechanical damage 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%				Temperature : 40 ±2℃ Humidity : 90~95% RH Time : 500 hours Measured at room ambient temperature after placing for 24 hours
Humidity load resistance	1.No mechanical damage 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%				Temperature : 40 ±2℃ Humidity : 90~95% RH Applied current : rated current Time : 500 hours Measured at room ambient temperature after placing for 24 hours

■ PACKING

1. Label
   1) Part name.
   2) Lot No.
   3) Quantity.
   4) Manufacturer.

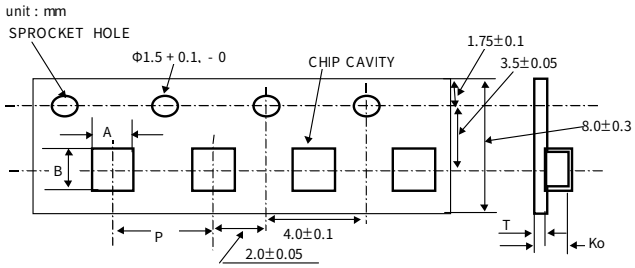
2. Standard quantity for packing

Pcs

Type(EIA)	Packing	Tape & reel		Bulk
	Reel	Inner box	Carton box	Vinyl or Cassette
1608	4,000	40,000	160,000	As wanted
2012	3,000	30,000	120,000	
3216	3,000	30,000	120,000	
	7,000	70,000	280,000	

* Packing method can be changed, based on user`s request.

■ TAPE DIMENSION/ Embossing 8mm



Type	A ± 0.1	B ± 0.1	P ± 0.1	K_0 ± 0.1	T (max.)
1608	1.00	1.80	4.0	0.95	0.3
2012	1.45	2.25	4.0	1.00	0.3
2012	1.45	2.25	4.0	1.35	0.3
3216	1.90	3.60	4.0	1.00	0.3
3216	1.90	3.60	4.0	1.35	0.3

■ TAPE DIMENSION/ Paper

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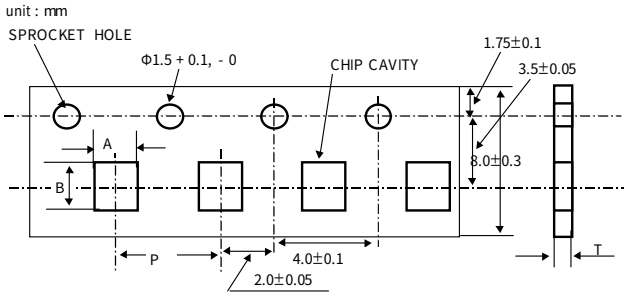
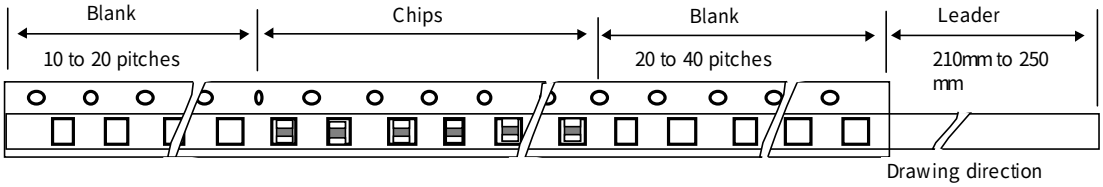


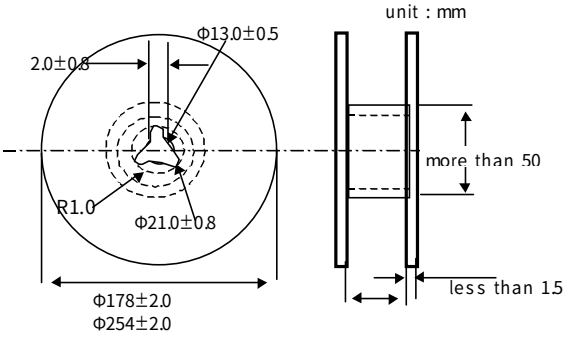
Type	A ± 0.1	B ± 0.1	P ± 0.1	T (max.)
1608	1.00	1.80	2.0	1.1

■ LEADER AND BLANK PORTION



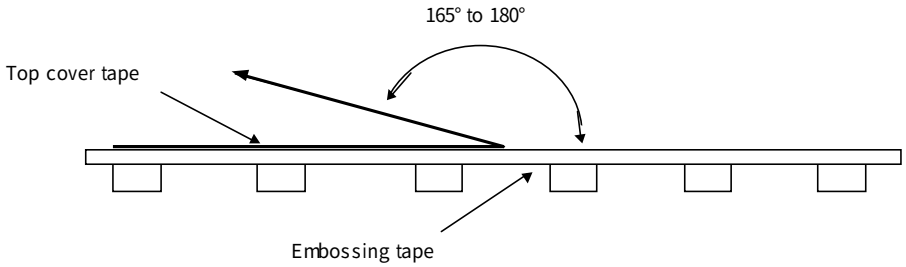
The pitch holes shift within ±0.3㎜ for cumulative 10 pitches

■ REEL DIMENSION



Type	W (㎜)
1608, 2012, 3216	9.0 ± 0.3

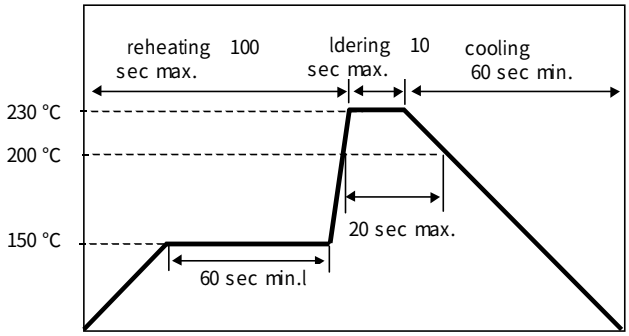
■ TOP COVER TAPE STRENGTH



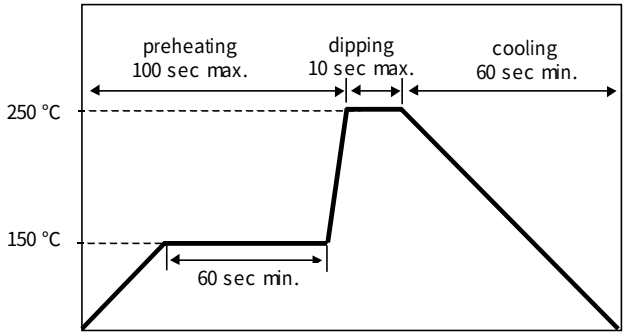
The force for tearing off top cover tape is 20 to 70 grams in the arrow direction

■ SOLDERING PROFILE

1. REFLOW SOLDERING



2. FLOW SOLDERING



3. MANUAL SOLDERING