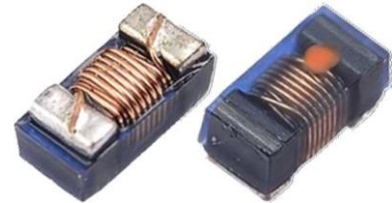




●FEATURE

1. High Current Type: DC Current Enhanced
2. Low DCR available in material code: R
3. Suitable for power line & signal line circuit
4. Pass the CE/FCC purpose
5. Operating Temperature: -40 ~ +125°C
6. Compliant with AEC-Q200



●APPLICATION

Mobil Device, Handheld Device, LowProfile Device, Panel.

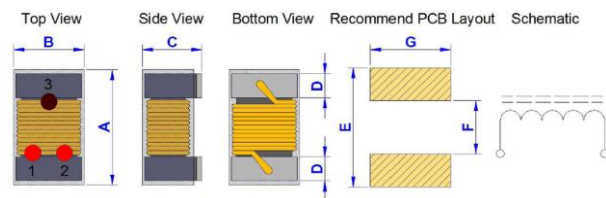
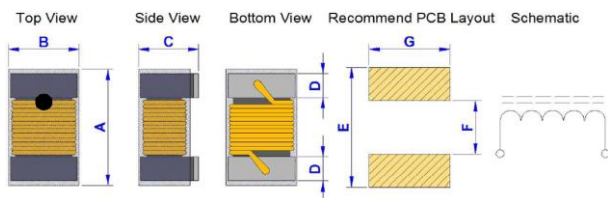
●ORDERING INFORMATION

<u>WCL</u>	<u>241612</u>	<u>R</u>	<u>-1R0</u>	<u>T</u>	<u>Q</u>
Series	Dimension (L*W)	Material code (R)	Inductance(L) (uH)	Tolerance(T) J=±5%, K=±10%, M=±20%	AEC-Q

●SHAPE AND DIMENSION

181210 / 241612 TYPE

292520 / 362925 TYPE



●SPECIFICATION

Unit: mm

TYPE	A	B	C	D	E	F	G
181210	1.8 MAX	1.20 MAX	1.00 MAX	0.33 Ref.	1.92 Ref.	0.80 Ref.	1.02 Ref.
241612	2.4 MAX	1.65 MAX	1.25 MAX	0.44 Ref.	2.80 Ref.	0.96 Ref.	1.78 Ref.
292520	2.9 MAX	2.54 MAX	2.00 MAX	0.50 Ref.	3.31 Ref.	1.27 Ref.	2.54 Ref.
362925	3.6 MAX	2.90 MAX	2.50 MAX	0.50 Ref.	4.40 Ref.	2.00 Ref.	2.70 Ref.



●ELECTRICAL CHARACTERISTICS

Part Number	Inductance (L) (μ H)	Tolerance (T)	Q value (Typ.)	Test Freq. (MHz)	S.R.F (MHz) (Typ.)	DCR (Ω) (\pm 30%)	IDC (mA) (Typ.)	Irms (mA) (Typ.)
WCL181210R-1R0T	1.00	K,M	16	7.9	390.0	0.32	860	700
WCL181210R-1R5T	1.50	K,M	16	7.9	160.0	0.40	720	600
WCL181210R-1R8T	1.80	K,M	16	7.9	121.0	0.43	640	580
WCL181210R-2R2T	2.20	K,M	16	7.9	103.0	0.56	600	580
WCL181210R-2R7T	2.70	K,M	16	7.9	72.0	0.62	540	500
WCL181210R-3R3T	3.30	K,M	16	7.9	66.0	0.70	500	500
WCL181210R-3R9T	3.90	K,M	16	7.9	61.0	0.83	460	460
WCL181210R-4R7T	4.70	K,M	16	7.9	51.0	0.97	400	420
WCL181210R-5R6T	5.60	K,M	16	7.9	47.0	1.10	380	380
WCL181210R-6R8T	6.80	K,M	16	7.9	43.0	1.50	340	340
WCL181210R-8R2T	8.20	K,M	16	7.9	40.0	1.68	300	300
WCL181210R-100T	10.00	K,M	14	2.5	36.0	1.85	280	280
WCL181210R-120T	12.00	K,M	14	2.5	32.0	2.28	260	260
WCL181210R-150T	15.00	K,M	14	2.5	29.0	2.60	240	240
WCL181210R-180T	18.00	K,M	14	2.5	28.0	2.90	220	220
WCL181210R-220T	22.00	K,M	14	2.5	24.0	3.61	200	200
WCL181210R-270T	27.00	K,M	14	2.5	20.0	5.20	140	140
WCL181210R-330T	33.00	K,M	14	2.5	15.0	6.60	120	120

* T=Tolerance Code: K= \pm 10%, M= \pm 20%

* IDC for Inductance drop 10% from its value without current.

* I rms for a 15°C rise above 25°C ambient.



Part Number	Inductance (L) (μ H)	Tolerance (T)	Q value (Typ.)	Test Freq. (MHz)	S.R.F (MHz) (Typ.)	DCR (Ω) (\pm 30%)	IDC (mA) (Typ.)	I _{rms} (mA) (Typ.)
WCL241612R-R47T	0.47	K,M	14	7.9	850.0	0.12	1400	1500
WCL241612R-R68T	0.68	K,M	14	7.9	765.0	0.15	1200	1300
WCL241612R-1R0T	1.00	J,K,M	14	7.9	208.0	0.13	1100	1300
WCL241612R-1R2T	1.20	J,K,M	14	7.9	159.0	0.16	960	1270
WCL241612R-1R5T	1.50	J,K,M	14	7.9	159.0	0.17	920	1260
WCL241612R-1R8T	1.80	J,K,M	14	7.9	112.0	0.20	860	1080
WCL241612R-2R2T	2.20	J,K,M	13	7.9	87.0	0.22	740	1040
WCL241612R-2R7T	2.70	J,K,M	13	7.9	72.0	0.25	680	1040
WCL241612R-3R3T	3.30	J,K,M	12	7.9	70.0	0.28	620	1020
WCL241612R-3R9T	3.90	J,K,M	14	7.9	61.0	0.38	580	960
WCL241612R-4R7T	4.70	J,K,M	14	7.9	51.0	0.43	520	840
WCL241612R-5R6T	5.60	J,K,M	12	7.9	47.0	0.50	480	800
WCL241612R-6R8T	6.80	J,K,M	14	7.9	46.0	0.68	420	700
WCL241612R-8R2T	8.20	J,K,M	13	7.9	33.0	0.73	400	680
WCL241612R-100T	10.00	J,K,M	14	2.5	31.0	0.85	360	560
WCL241612R-120T	12.00	J,K,M	14	2.5	30.0	0.90	340	460
WCL241612R-150T	15.00	J,K,M	15	2.5	28.0	1.40	300	380
WCL241612R-180T	18.00	J,K,M	15	2.5	27.0	1.55	280	360
WCL241612R-220T	22.00	J,K,M	15	2.5	20.0	1.76	240	340
WCL241612R-270T	27.00	J,K,M	15	2.5	17.0	2.00	220	300
WCL241612R-330T	33.00	J,K,M	15	2.5	17.0	2.35	200	300
WCL241612R-470T	47.00	J,K,M	14	2.5	15.0	3.40	160	280
WCL241612R-560T	56.00	J,K,M	14	2.5	10.0	4.42	150	240
WCL241612R-680T	68.00	J,K,M	14	2.5	10.0	4.45	140	240
WCL241612R-820T	82.00	J,K,M	14	2.5	10.0	7.50	100	180
WCL241612R-101T	100.00	J,K,M	10	1.0	9.0	7.50	100	180

* T=Tolerance Code: J= \pm 5%, K= \pm 10%, M= \pm 20%

* IDC for Inductance drop 10% from its value without current.

* I_{rms} for a 15°C rise above 25°C ambient.



Part Number	Inductance (L) (uH)	Tolerance (T)	Q value (Min.)	Test Freq. (MHz)	S.R.F (MHz) (Min.)	DCR (Ω) (Max.)	IDC (mA) (Max.)	Irms (mA) (Typ.)
WCL292520-R22T	0.22	J,K	35	25	800	0.15	2600	2400
WCL292520-R47T	0.47	J,K	35	25	460	0.20	2400	1100
WCL292520-R82T	0.82	J,K	35	25	360	0.35	1800	1000
WCL292520-1R0T	1.0	J,K	32	7.9	340	0.34	2100	900
WCL292520-1R2T	1.2	J,K	25	7.9	290	0.25	1900	860
WCL292520-1R5T	1.5	J,K	32	7.9	230	0.42	1800	740
WCL292520-1R8T	1.8	J,K	27	7.9	180	0.45	1700	720
WCL292520-2R2T	2.2	J,K	27	7.9	140	0.50	1500	700
WCL292520-2R7T	2.7	J,K	27	7.9	130	0.55	1300	560
WCL292520-3R3T	3.3	J,K	27	7.9	125	0.60	1300	540
WCL292520-3R9T	3.9	J,K	27	7.9	100	0.80	1200	480
WCL292520-4R7T	4.7	J,K	27	7.9	90	0.90	1100	400
WCL292520-5R6T	5.6	J,K	27	7.9	60	1.00	1000	400
WCL292520-6R8T	6.8	J,K	27	7.9	60	1.05	950	420
WCL292520-8R2T	8.2	J,K	25	7.9	55	1.20	850	380
WCL292520-100T	10.0	J,K	23	2.5	55	1.55	800	240
WCL292520-120T	12.0	J,K	23	2.5	36	2.10	630	220
WCL292520-150T	15.0	J,K	23	2.5	36	2.38	580	200
WCL292520-180T	18.0	J,K	23	2.5	32	2.50	550	180
WCL292520-220T	22.0	J,K	23	2.5	29	2.92	550	180
WCL292520-330T	33.0	J,K	23	2.5	21	4.10	450	140
WCL292520-390T	39.0	J,K	18	2.5	15	5.50	340	270
WCL292520-470T	47.0	J,K	23	2.5	17	7.80	350	100
WCL292520-680T	68.0	J,K	20	2.5	9	11.50	260	100
WCL292520-101T	100.0	J,K	13	1.0	4	13.20	200	100
WCL292520-221T	220.0	J,K	13	1.0	3	25.50	140	60
WCL292520-331T	330.0	J,K	13	1.0	2	32.50	110	50

* T=Tolerance Code: J=±5%, K=±10%

* IDC for Inductance drop 10% from its value without current.

* I_{rms} for a 15°C rise above 25°C ambient.



Part Number	Inductance (L) (uH)	Tolerance (T)	Q value (Min.)	Test Freq. (MHz)	S.R.F (MHz) (Min.)	DCR (Ω) (Max.)	IDC (mA) (Max.)
WCL362925-R39T	0.39	J	40	25.0	500	0.09	3000
WCL362925-R47T	0.47	J,K	40	25.0	500	0.09	3000
WCL362925-R56T	0.56	K	40	25.0	500	0.10	3000
WCL362925-1R0T	1.0	J,K	35	7.9	340	0.13	2600
WCL362925-1R2T	1.2	J,K	35	7.9	280	0.14	2400
WCL362925-1R5T	1.5	J,K	30	7.9	160	0.14	2200
WCL362925-1R8T	1.8	J,K	30	7.9	120	0.16	2000
WCL362925-2R2T	2.2	J,K	30	7.9	100	0.17	1900
WCL362925-2R5T	2.5	J,K	30	7.9	80	0.19	1700
WCL362925-3R3T	3.3	J,K	30	7.9	70	0.21	1500
WCL362925-4R7T	4.7	J,K	28	7.9	55	0.30	1300
WCL362925-6R8T	6.8	J,K	28	7.9	45	0.37	1100
WCL362925-8R2T	8.2	J,K	28	7.9	45	0.47	940
WCL362925-100T	10.0	J,K	22	2.5	47	0.50	900
WCL362925-120T	12.0	J,K	22	2.5	42	0.68	820
WCL362925-150T	15.0	J,K	22	2.5	34	0.72	740
WCL362925-180T	18.0	J,K	22	2.5	28	0.95	680
WCL362925-220T	22.0	J,K	22	2.5	25	1.10	640
WCL362925-270T	27.0	J,K	20	2.5	18	1.25	570
WCL362925-330T	33.0	J,K	20	2.5	13	1.37	500
WCL362925-390T	39.0	J,K	20	2.5	13	1.85	400
WCL362925-470T	47.0	J,K	20	2.5	12	1.88	440
WCL362925-560T	56.0	J,K	22	2.5	10	2.75	380
WCL362925-680T	68.0	J,K	22	2.5	10	3.00	360
WCL362925-820T	82.0	J,K	22	2.5	10	4.10	320
WCL362925-101T	100.0	J,K	15	1.0	8	4.68	280
WCL362925-121T	120.0	J,K	15	1.0	7	5.80	220
WCL362925-151T	150.0	J,K	13	1.0	7	6.10	220
WCL362925-181T	180.0	J,K	13	1.0	3	7.10	200
WCL362925-221T	220.0	J,K	13	1.0	3	7.65	200
WCL362925-331T	330.0	J,K	13	1.0	3	12.62	160
WCL362925-471T	470.0	J,K	13	1.0	3	25.00	120
WCL362925-561T	560.0	J,K	13	1.0	2	27.00	100
WCL362925-681T	680.0	J,K	13	1.0	2	31.00	100
WCL362925-821T	820.0	J,K	10	1.0	2	42.00	50
WCL362925-102T	1000.0	J,K	10	1.0	2	46.00	50

* T=Tolerance Code: J=±5%, K=±10%

* IDC for Inductance drop 10% from its value without current.

* Irms for a 15°C rise above 25°C ambient.



●RELIABILITY

Test Item	Test Condition	Specification												
Dimension	Actual Size ...	Meet Spec												
Thermal Shock (Temperature Cycle)	Temperature: -40 ~ +125°C kept stabilized for 30 min. each Cycle: 100 Cycles (power off)	Elec. no variation Appearance no deformation												
Humidity Resistance	Humidity: 90% ~ 95% RH Temperature: 60 ± 2°C Test Time: 96 ± 2 Hours	Elec. no variation Appearance no deformation												
High Temperature	Temperature: 125 ± 2°C Testing Time: 96 ± 2 Hours	Elec. no variation Appearance no deformation												
Low Temperature	Temperature: -40 ± 2°C Time: 96 ± 2 Hours	Elec. no variation Appearance no deformation												
Temperature and Humidity Cycle	<table border="1"> <thead> <tr> <th>Temperature</th> <th>Humidity</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>25°C</td> <td>90% ~ 95% RH</td> <td>3.0 Hr</td> </tr> <tr> <td>55°C</td> <td>95% ~ 96% RH</td> <td>5.0 Hr</td> </tr> <tr> <td>25°C</td> <td>90% ~ 95% RH</td> <td>3.0 Hr</td> </tr> </tbody> </table>	Temperature	Humidity	Time	25°C	90% ~ 95% RH	3.0 Hr	55°C	95% ~ 96% RH	5.0 Hr	25°C	90% ~ 95% RH	3.0 Hr	Elec. no variation Appearance no deformation
	Temperature	Humidity	Time											
	25°C	90% ~ 95% RH	3.0 Hr											
	55°C	95% ~ 96% RH	5.0 Hr											
25°C	90% ~ 95% RH	3.0 Hr												
Cycle: 20 Cycles														
Vibration	Frequency: 10Hz ~ 55Hz , Amplitude: 1.5 mm Direction: X, Y, Z, Time: 2 Hours each	Elec. no variation Appearance no deformation												
Solderability	Go through real SMT IR-Reflow The profile like our suggest profile. Preheat: 160 ± 10°C (90 sec) Peak: 245 ± 5°C Peak Time: 50 Sec. / up 217°C	Elec. no variation Appearance no deformation												
Soldering Heat Resistance	Preheat: 160 ± 10°C (90 sec) Solder: Sn / Ag / Cu (Pb Free) Solder Temp.: 260 ± 5°C, Time: 3 ± 1 seconds	Elec. no variation Appearance no deformation												
Iron Solder Heat Resistance	Solder Temp.: 350 ± 5°C Flux: Rosin, Time: 3 ± 1 seconds	Elec. no variation Appearance no deformation												
Bending Strength	<p>Unit : mm</p> <p>Force : 1Kg / min.</p>	Elec. no variation Appearance no deformation												
Flexure Strength	<p>Unit : mm</p> <p>Solder cream 0.15 mm</p>	Elec. no variation Appearance no deformation												
Terminal Strength	<p>Mount on PCB Solder Cream 0.15 mm</p> <p>Push 10N force to X , Y direction</p>	Elec. no variation Appearance no deformation												
High-Voltage	100 V DC between core & winding	Elec. no variation Appearance no deformation												
Load life	Temperature: 25 ± 3°C Load: Allowed DC Current, Test Time: 96 ± 2 Hours	Elec. no variation Appearance no deformation												



•TEST EQUIPMENT

- 1. HP4284A, HP42841A- L, Q, DCR, IDC
- 2. HP8753D Network analyzer- SRF

•OPERATING & STORAGE CONDITION

- 1. Operating Temp: -40 ~ +125°C (Including self - temperature rise)
- 2. Storage Temp: a. Product with Taping: -10 ~ 45°C, 50 ~ 60% RH
b. On Board: -40 ~ +125°C
- 3. Storage Life Time: 6 Month (Less than 40°C and 60% RH)

Standard Atmospheric Conditions:

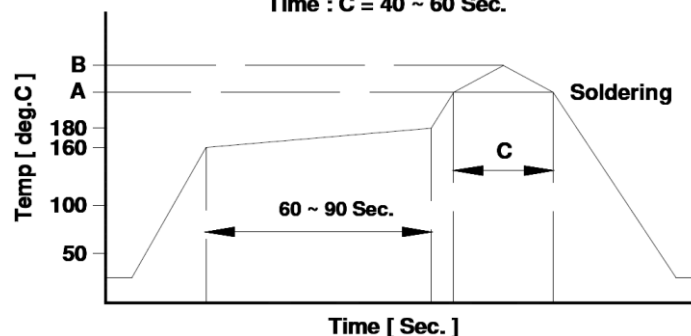
Ambient Temperature 20 ± 15°C , Humidity RH 65 ± 20%

If there may be any doubt on the test result, Measurement shall be made within the following limits:

Ambient Temperature 25 ± 5°C , Humidity RH 75 ± 10%

•RECOMMEND REFLOW CURVE (TIME: Second)

Lead Free Solder : A = 217 deg.C , B = 245+/-5 deg.C
Time : C = 40 ~ 60 Sec.



Notice: Iron Soldering, Solder < 30 Watt,
Direct touch the terminal x 3 Sec. Max. @ 350°C

•ATTENTION & CAUTION:

- * Keep out of Splashing water or salt water
- * Avoid Toxic Gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)
- * Vibrations or shocks which exceed the specified condition
- * Dew condense
- * Layout near the edge of PCB
- * Over flexure after SMT mounting & PCBA
- * Pin foot or SMD pad solder ability: Pb free type is best within 6 months after delivery
- * Humidity sensitive, IPC/JEDEC J-STD-020 MSL if over Level 1, recommend bake 30mins@150°C before PCBA
- * Caution for human life relative applications: PLS contact & consult with AiT team in design stage.



Care Note for Use:

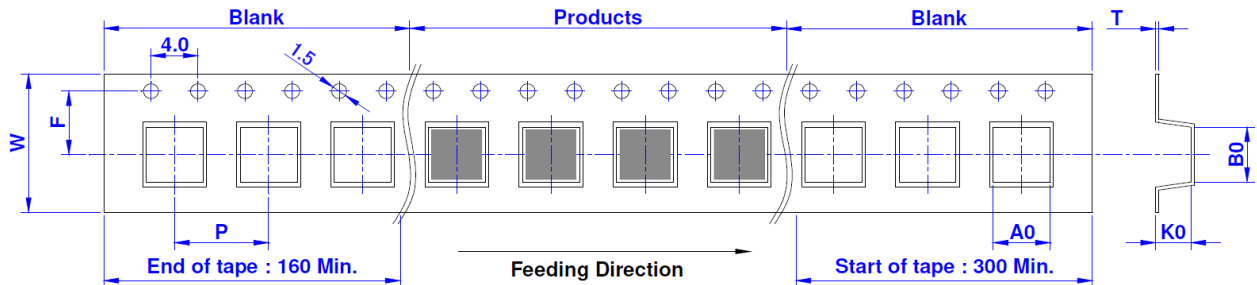
- (1) Storage Condition:
Temperature 25 to 35°C, Humidity 45 to 60% RH
- (2) Use Temperature:
 - a. Minimum Temperature: -40°C Ambient temperature of this product.
 - b. Maximum Temperature: +125°C The value of temperature including ambient and temperature rise of this product.
 - c. Reliability test temperature range from -40 ~ +125°C
 - d. However, this is not meant as temperature grade guarantee for UL.
- (3) Model:
When this product was used in a similar or as new product to the original one, sometimes it might be unable to satisfy the specifications due to difference in condition of usage.
- (4) Drop:
If this product suffered mechanical stress such as drop, characteristics may become poor (due to damage on coil / bobbin / ferrite ... etc.)
Never use such stressed product.

Care Note for Safety:

- (1) Provision to Abnormal Condition:
This product itself does not have any protective function in abnormal condition such as overload, short-circuit and open-circuit conditions, etc.
Therefore, it shall be confirmed from the end product that there is no risk of smoking, fire, dielectric withstand voltage insulation resistance, etc. in abnormal conditions to provide protective devices and /or protection circuit in the end product.
- (2) Temperature Rise:
Temperature rise on this product depends on the installation condition on end products.
It shall be confirmed on the actual end product that temperature rise of this product is within the specified temperature class limit.
- (3) Dielectric Strength:
Dielectric withstanding test with higher voltage than specific value will damage insulating material and shorten its life.
- (4) Water:
This product must not be used in wet condition resulted from water, coffee or any liquid contact because insulation strength becomes very low under such condition.
- (5) Potting:
If this product is potted in some compound, coating material of magnet wire might be occasionally damaged. Please ask us if you intend to pot this product.
- (6) Detergent:
Please consult AiT Semi immediately once under such circumstances because product reliability confirmation etc. is needed when this product come in contact with these chemicals.

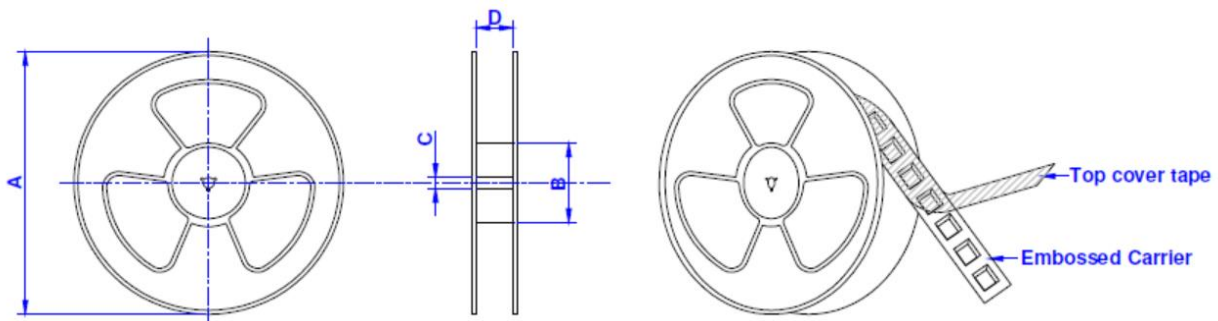


●TAPE DIMENSION: mm



SIZE/mm	W	P	A0	B0	K0	T	F
181210	8.00	4.00	1.25	1.90	1.00	0.22	3.50
241612	8.00	4.00	1.65	2.40	1.30	0.22	3.50
292520	8.00	4.00	2.50	2.85	2.00	0.22	3.50
362925	8.00	4.00	2.88	3.72	2.50	0.22	5.50

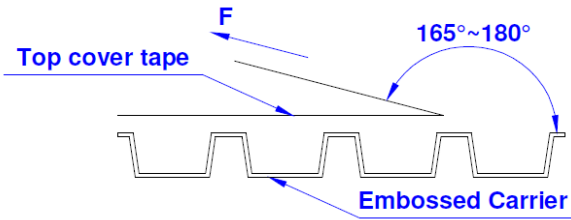
●REEL DIMENSION: mm



SIZE / mm	REEL SIZE	A	B	C	D	QTY/REEL
181210	7" x 8mm	178	60	13	8.5	4000 PCS
241612	7" x 8mm	178	60	13	8.5	2000 PCS
292520	7" x 8mm	178	60	13	8.5	2000 PCS
362925	7" x 8mm	178	60	13	8.5	2000 PCS



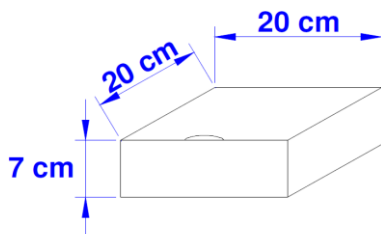
●TEARING OFF FORCE:



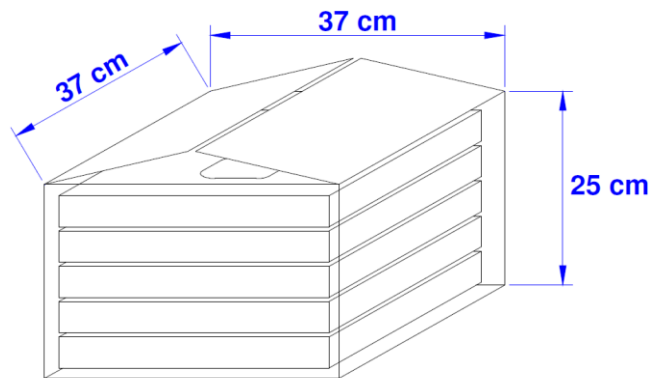
The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions (referenced ANSI/EIA - 481 - D - 2008 of 4.11 standard).

Room Temp. (°C)	Room Humidity (%)	Room Atm. (hPa)	Tearing Speed (mm/min)
5 ~ 35	45 ~ 85	860~1060	300

●BOX PACKAGE: cm



7" Small Box



Large Box

SIZE/mm	Reels in Small Box	Small Box in Large Box
181210	5	8
241612	5	8
292520	5	8
362925	5	8



IMPORTANT NOTICE

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