



●FEATURE

1. Small size Ferrite Bead generating high impedance
2. EMI Suppressor for High Current
3. Suitable for power line and signal line circuit
4. Low DC resistance structure
5. Operating Temperature -40 ~ +125°C
6. Compliant with AEC-Q200



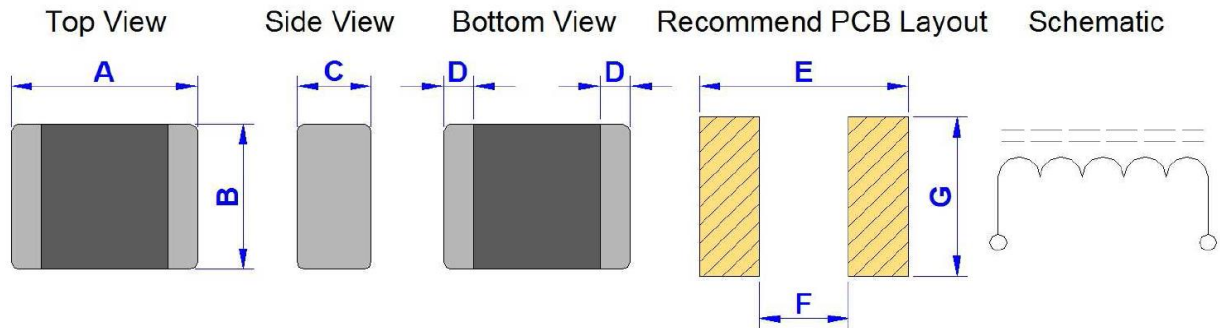
●APPLICATION

Pass EC/FCC Purpose

●ORDERING INFORMATION

FBP	160808	H	121	N	C	-3A	Q
Series	Dimension (L*W*H)	Material code (H)	Impedance(Z) (Ω)	Tolerance(T) N=±25%	Customized	Rated Current (A)	AEC-Q

●SHAPE AND DIMENSION



●SPECIFICATION

Unit: mm (inch)

TYPE	A	B	C	D	E	F	G
100505 (0402)	1.00±0.15	0.50±0.15	0.50±0.15	0.25±0.15	1.10 Ref.	0.40 Ref.	0.60 Ref.
160808 (0603)	1.60±0.15	0.80±0.15	0.80±0.15	0.40±0.20	1.80 Ref.	0.60 Ref.	1.00 Ref.
201209 (0805)	2.00±0.20	1.25±0.20	0.90±0.20	0.50±0.30	2.30 Ref.	1.30 Ref.	1.30 Ref.
321611 (1206)	3.20±0.20	1.60±0.20	1.10±0.20	0.70±0.30	4.40 Ref.	2.20 Ref.	2.06 Ref.
322513 (1210)	3.20±0.20	2.50±0.20	1.30±0.20	0.80±0.20	4.06 Ref.	2.13 Ref.	2.74 Ref.
451616 (1806)	4.50±0.20	1.60±0.20	1.60±0.20	0.80±0.20	5.70 Ref.	2.70 Ref.	2.24 Ref.
453215 (1812)	4.50±0.20	3.20±0.20	1.50±0.20	0.80±0.20	5.90 Ref.	2.57 Ref.	4.22 Ref.
565015 (2220)	5.59±0.51	5.08±0.25	1.50±0.20	0.76±0.25	9.19 Ref.	3.05 Ref.	6.10 Ref.
565018 (2220)	5.59±0.51	5.08±0.25	1.80±0.25	0.76±0.25	9.19 Ref.	3.05 Ref.	6.10 Ref.
565032 (2220)	5.59±0.51	5.08±0.25	3.20±0.25	0.76±0.25	9.19 Ref.	3.05 Ref.	6.10 Ref.



●ELECTRICAL CHARACTERISTICS

Part Number	Impedance(Z) (Ω)	Test Freq. (MHz) / 0.5V	DCR (Ω) (Max.)	Rated Current (mA) (Max.)
FBP100505H100N-2A	10	100	0.030	2000
FBP100505H300N-1.7A	30	100	0.050	1700
FBP100505H600N-1.5A	60	100	0.080	1500
FBP100505H800N-1.2A	80	100	0.090	1200
FBP100505H101N-1.2A	100	100	0.090	1200
FBP100505H121N-1.2A	120	100	0.090	1200
FBP100505H601N-0.42A	600	100	0.340	420

* N = Tolerance = ±25%

* Rated Current based on increasing product temperature: Current when temperature of the product reaches +40°C

Part Number	Impedance(Z) (Ω)	Test Freq. (MHz) / 0.5V	DCR (Ω) (Max.)	Rated Current (mA) (Max.)
FBP160808H100N-4A	10	100	0.020	4000
FBP160808H110N-4A	11	100	0.020	4000
FBP160808H220N-3A	22	100	0.040	3000
FBP160808H250N-3A	25	100	0.030	3000
FBP160808H300N-3A	30	100	0.030	3000
FBP160808H400N-3A	40	100	0.035	3000
FBP160808H600N-3A	60	100	0.040	3000
FBP160808H700N-2.5A	70	100	0.050	2500
FBP160808H750N-2.5A	75	100	0.050	2500
FBP160808H800N-2.5A	80	100	0.050	2500
FBP160808H900N-2.5A	90	100	0.050	2500
FBP160808H101N-2.5A	100	100	0.050	2500
FBP160808H121N-2.5A	120	100	0.050	2500
FBP160808H121NC-3A*	120	100	0.035	3000
FBP160808H151N-2A	150	100	0.080	2000
FBP160808H181N-2A	180	100	0.080	2000
FBP160808H201N-2A	200	100	0.100	2000
FBP160808H221N-2A	220	100	0.100	2000
FBP160808H301N-2A	300	100	0.100	2000
FBP160808H331N-1.5A	330	100	0.150	1500
FBP160808H391N-1A	390	100	0.140	1000
FBP160808H471N-1.5A	470	100	0.150	1500
FBP160808H501N-1.5A	500	100	0.150	1500
FBP160808H601N-1A	600	100	0.200	1000
FBP160808H102N-0.8A	1000	100	0.250	800
FBP160808H152N-0.5A	1500	100	0.400	500
FBP160808H202N-0.5A	2000	100	0.500	500
FBP160808H252N-0.2A	2500	100	0.800	200

* N = Tolerance = ±25% , C=Customized

* Rated Current based on increasing product temperature: Current when temperature of the product reaches +40°C



Part Number	Impedance(Z) (Ω)	Test Freq. (MHz) / 0.5V	DCR (Ω) (Max.)	Rated Current (mA) (Max.)
FBP201209H070N-6A	7	100	0.01	6000
FBP201209H110N-6A	11	100	0.01	6000
FBP201209H170N-5A	17	100	0.02	5000
FBP201209H220N-4A	22	100	0.02	4000
FBP201209H270N-4A	27	100	0.02	4000
FBP201209H300N-4A	30	100	0.02	4000
FBP201209H310N-4A	31	100	0.02	4000
FBP201209H400N-3A	40	100	0.02	3000
FBP201209H500N-3A	50	100	0.02	3000
FBP201209H600N-3A	60	100	0.03	3000
FBP201209H700N-3A	70	100	0.04	3000
FBP201209H750N-3A	75	100	0.04	3000
FBP201209H800N-3A	80	100	0.04	3000
FBP201209H900N-3A	90	100	0.04	3000
FBP201209H101N-3A	100	100	0.04	3000
FBP201209H121N-3A	120	100	0.04	3000
FBP201209H151N-2.5A	150	100	0.05	2500
FBP201209H181N-2.5A	180	100	0.05	2500
FBP201209H201N-2.5A	200	100	0.05	2500
FBP201209H221N-2A	220	100	0.08	2000
FBP201209H301N-2A	300	100	0.08	2000
FBP201209H331N-2A	330	100	0.08	2000
FBP201209H401N-2A	400	100	0.10	2000
FBP201209H501N-2A	500	100	0.10	2000
FBP201209H601N-2A	600	100	0.10	2000
FBP201209H102N-1.5A	1000	100	0.12	1500
FBP201209H152N-1A	1500	100	0.30	1000

* N = Tolerance = $\pm 25\%$

* Rated Current based on increasing product temperature: Current when temperature of the product reaches +40°C



Part Number	Impedance(Z) (Ω)	Test Freq. (MHz) / 0.5V	DCR (Ω) (Max.)	Rated Current (mA) (Max.)
FBP321611H110N-6A	11	100	0.015	6000
FBP321611H190N-6A	19	100	0.015	6000
FBP321611H260N-6A	26	100	0.015	6000
FBP321611H300N-4A	30	100	0.015	4000
FBP321611H310N-4A	31	100	0.015	4000
FBP321611H320N-4A	32	100	0.015	4000
FBP321611H500N-4A	50	100	0.020	4000
FBP321611H600N-4A	60	100	0.020	4000
FBP321611H800N-3A	80	100	0.025	3000
FBP321611H900N-3A	90	100	0.030	3000
FBP321611H101N-3A	100	100	0.030	3000
FBP321611H121N-3A	120	100	0.030	3000
FBP321611H151N-2A	150	100	0.040	2000
FBP321611H221N-2A	220	100	0.050	2000
FBP321611H301N-2A	300	100	0.060	2000
FBP321611H401N-2.5A	400	100	0.065	2500
FBP321611H501N-2.5A	500	100	0.070	2500
FBP321611H601N-2A	600	100	0.100	2000
FBP321611H102N-1A	1000	50	0.300	1000
FBP321611H122N-1A	1200	50	0.180	1000
FBP321611H152N-0.8A	1500	50	0.200	800

* N = Tolerance = ±25%

* Rated Current based on increasing product temperature: Current when temperature of the product reaches +40°C

Part Number	Impedance(Z) (Ω)	Test Freq. (MHz) / 0.5V	DCR (Ω) (Max.)	Rated Current (mA) (Max.)
FBP322513H600N-4A	60	100	0.025	4000
FBP322513H900N-3A	90	100	0.025	3000

* N = Tolerance = ±25%

* Rated Current based on increasing product temperature: Current when temperature of the product reaches +40°C

Part Number	Impedance(Z) (Ω)	Test Freq. (MHz) / 0.5V	DCR (Ω) (Max.)	Rated Current (mA) (Max.)
FBP451616H500N-6A	50	100	0.020	6000
FBP451616H600N-5A	60	100	0.020	5000
FBP451616H800N-4A	80	100	0.025	4000
FBP451616H151N-2A	150	100	0.100	2000

* N = Tolerance = ±25%

* Rated Current based on increasing product temperature: Current when temperature of the product reaches +40°C



Part Number	Impedance(Z) (Ω)	Test Freq. (MHz) / 0.5V	DCR (Ω) (Max.)	Rated Current (mA) (Max.)
FBP453215H700N-6A	70	100	0.030	6000
FBP453215H121N-4A	120	100	0.030	4000

* N = Tolerance = $\pm 25\%$

* Rated Current based on increasing product temperature: Current when temperature of the product reaches +40°C

Part Number	Impedance(Z) (Ω)	Test Freq. (MHz) / 0.5V	DCR (Ω) (Max.)	Rated Current (mA) (Max.)
FBP565015H171N-4A	170	100	0.030	4000

* N = Tolerance = $\pm 25\%$

* Rated Current based on increasing product temperature: Current when temperature of the product reaches +40°C

Part Number	Impedance(Z) (Ω)	Test Freq. (MHz) / 0.5V	DCR (Ω) (Max.)	Rated Current (mA) (Max.)
FBP565018H101N-6A	100	100	0.006	6000
FBP565018H151N-5A	150	100	0.015	5000
FBP565018H181N-5A	180	100	0.020	5000
FBP565018H251N-4A	250	100	0.015	4000

* N = Tolerance = $\pm 25\%$

* Rated Current based on increasing product temperature: Current when temperature of the product reaches +40°C

Part Number	Impedance(Z) (Ω)	Test Freq. (MHz) / 0.5V	DCR (Ω) (Max.)	Rated Current (mA)(Max.)
FBP565032H271N-4A	270	100	0.035	4000
FBP565032H401N-4.5A	400	100	0.030	4500

* N = Tolerance = $\pm 25\%$

* Rated Current based on increasing product temperature: Current when temperature of the product reaches +40°C



●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: 12 Month (Less than 40°C and 60% RH)

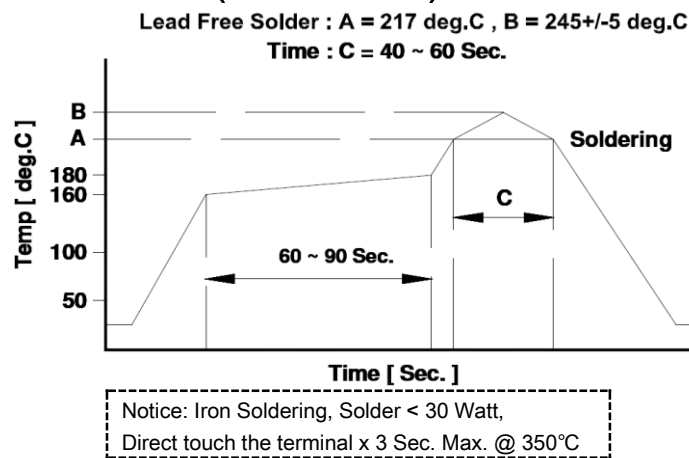
Standard Atmosphere Conditions:

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)



●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:

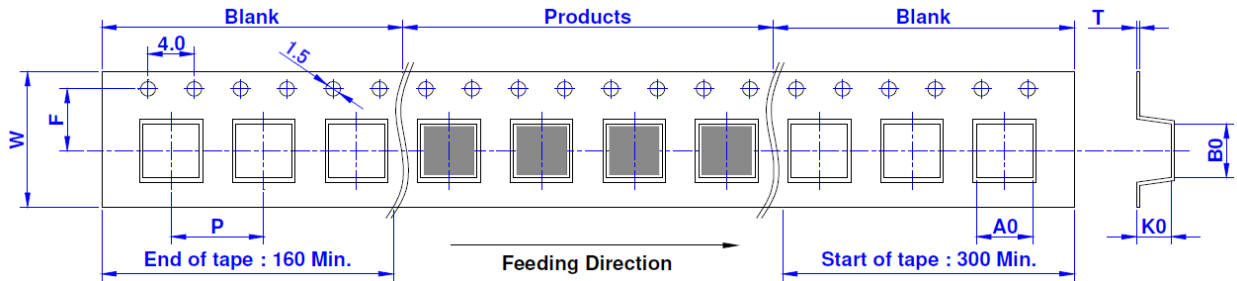
- (1) Storage Condition:
Temperature 25 to 35°C, Humidity 45 to 60% RH
- (2) Use Temperature:
 - a. Minimum Temperature: -40°C Ambient temperature of this product.
 - b. Maximum Temperature: +125°C The value of temperature including ambient and temperature rise of this product.
 - c. Reliability test 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.

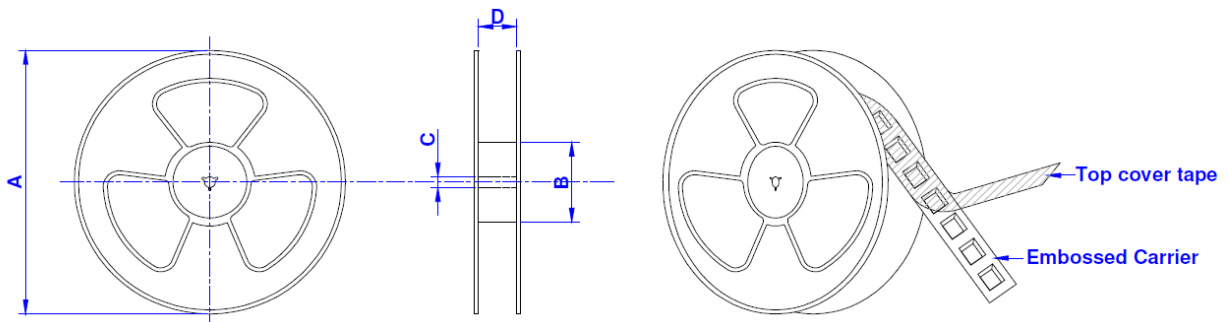


●TAPE DIMENSION: mm



SIZE/mm	W	P	A0	B0	K0	T	F
100505	8.00±0.20	2.00±0.10	0.65±0.10	1.15±0.10	0.80±0.05	0.20±0.05	3.50±0.05
160808	8.00±0.20	4.00±0.10	1.10±0.10	1.90±0.10	1.10±0.05	0.20±0.05	3.50±0.05
201209	8.00±0.20	4.00±0.10	1.55±0.10	2.30±0.10	1.20±0.05	0.20±0.05	3.50±0.05
321611	8.00±0.20	4.00±0.10	1.90±0.10	3.50±0.10	1.40±0.05	0.20±0.05	3.50±0.05
322513	8.00±0.20	4.00±0.10	2.90±0.10	3.60±0.10	1.70±0.05	0.25±0.05	3.50±0.05
451616	12.0±0.20	8.00±0.10	2.90±0.10	4.90±0.10	2.05±0.05	0.30±0.05	5.50±0.05
453215	12.0±0.20	8.00±0.10	3.60±0.10	4.90±0.10	2.05±0.05	0.30±0.05	5.50±0.05
565015	12.0±0.20	8.00±0.10	5.40±0.10	5.95±0.10	2.28±0.05	0.30±0.05	5.50±0.05
565018	12.0±0.20	8.00±0.10	5.40±0.10	5.95±0.10	2.28±0.05	0.30±0.05	5.50±0.05
565032	12.0±0.20	8.00±0.10	5.40±0.10	5.95±0.10	3.42±0.05	0.30±0.05	5.50±0.05

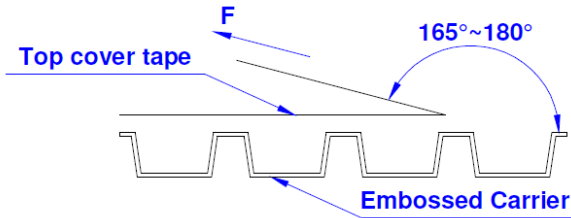
●REEL DIMENSION: mm



SIZE/mm	Reel Size	A	B	C	D	QTY / Reel
100505	7" x 8 mm	178	60	13	8.5	10000 PCS
160808	7" x 8 mm	178	60	13	8.5	4000 PCS
201209	7" x 8 mm	178	60	13	8.5	4000 PCS
321611	7" x 8 mm	178	60	13	8.5	3000 PCS
322513	7" x 8 mm	178	60	13	8.5	2000 PCS
451616	7" x 12 mm	178	60	13	12.5	2000 PCS
453215	7" x 12 mm	178	60	13	12.5	1000 PCS
565015	13" x 12 mm	330	100	13	12.5	2000 PCS
565018	13" x 12 mm	330	100	13	12.5	2000 PCS
565032	13" x 12 mm	330	100	13	12.5	2000 PCS



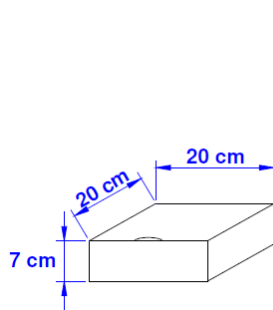
● **TEARING OFF FORCE :**



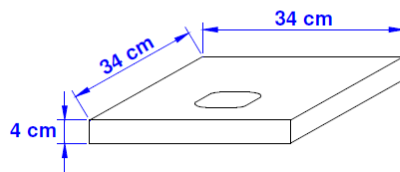
The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions (referenced ANSI/EIA - 481 - D - 2008 of 4.11 standard).

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

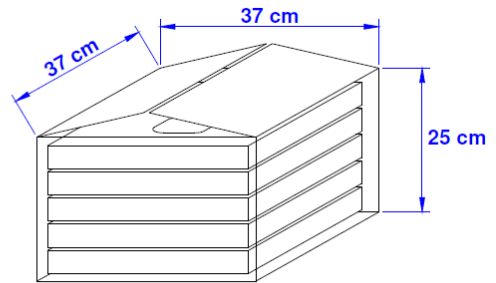
● **BOX PACKAGE: cm**



7" Small Box



13" Small Box



Large Box

SIZE/mm	Reels in Small Box	Small Box in Large Box
100505	5	8
160808	5	8
201209	5	8
321611	5	8
322513	5	8
451616	4	8
453215	4	8
565015	2	5
565018	2	5
565032	2	5



IMPORTANT NOTICE

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