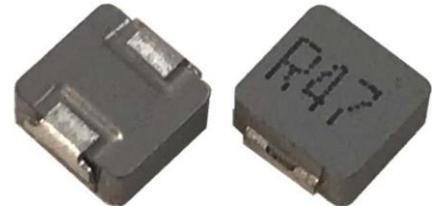




●FEATURE

1. High performance (Isat) realized by metal dust core.
2. Low profile: 4.5mm x 4.3mm x 2.0mm
3. Low loss realized with low DCR
4. Capable of corresponding high frequency (1MHz)
5. Operating Temperature: -40 ~ +125°C
6. Compliant with AEC-Q200



●APPLICATION

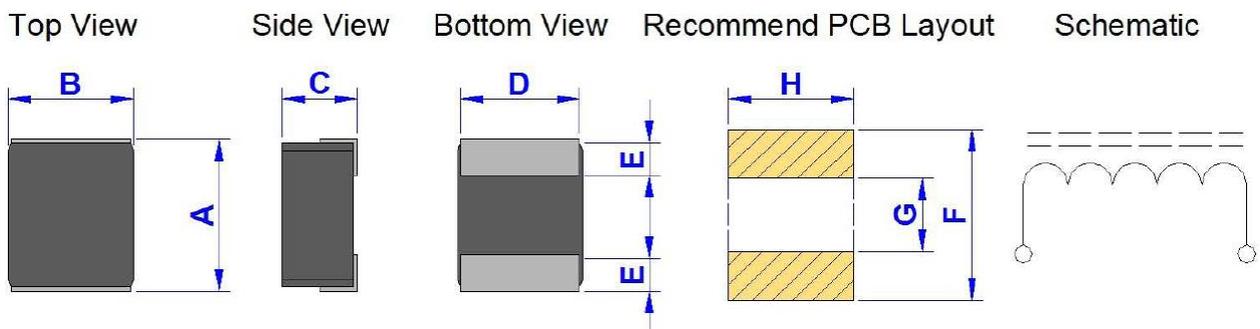
Notebook, Ultrabook, PC, LCD Display, Server Application, POL Converters, Battery Powered Devices, DC/DC Converter In Distributed Power Systems.

●ORDERING INFORMATION

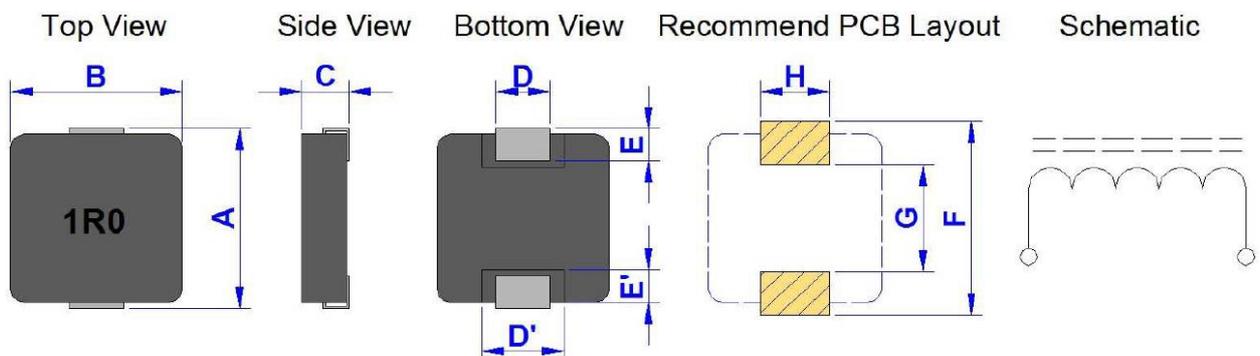
<u>WSP</u>	<u>252012</u>	<u>U</u>	<u>-R47</u>	<u>M</u>	<u>-Q</u>
Series	Dimension	Material code	Impedance	Tolerance	AEC-Q
	(L*W*H)	(N, S, F)	(Ω)	M=±20%	

●SHAPE AND DIMENSION

Type: 201610, 252012B



Type: 04020, 05030, 06018, 06030, 10040, 13035, 13050,





● SPECIFICATION

Unit: mm

Type	A	B	C	D	E	F	G	H
201610	2.10 Max.	1.70 Max.	1.00 Max.	1.60±0.10	0.50±0.20	2.00 Ref.	0.70 Ref.	1.60 Ref.
252012	2.70 Max.	2.20 Max.	1.20 Max.	2.00±0.20	0.60±0.20	2.80 Ref.	1.20 Ref.	2.00 Ref.

Type	A	B	C	D	D'	E	E'	F	G	H
04020	4.50 Max.	4.30 Max.	2.00 Max.	1.50±0.30	2.20±0.20	0.80±0.30	1.00±0.10	5.20 Ref.	2.20 Ref.	2.50 Ref.
05030	5.20 Max.	4.90 Max.	3.00 Max.	1.50±0.30	2.20±0.20	1.00±0.30	1.50±0.10	7.00 Ref.	3.00 Ref.	2.50 Ref.
06018	7.40 Max.	6.80 Max.	1.80 Max.	3.00±0.30	3.60±0.20	1.60±0.30	2.00±0.10	8.40 Ref.	3.70 Ref.	3.50 Ref.
06030	7.30 Max.	6.80 Max.	3.00 Max.	3.00±0.30	3.60±0.20	1.60±0.30	2.00±0.10	8.40 Ref.	3.70 Ref.	3.50 Ref.
10040	11.5 Max.	10.3 Max.	4.00 Max.	3.00±0.50	5.00±0.20	2.00±0.50	2.50±0.10	13.6 Ref.	5.40 Ref.	4.10 Ref.
13035	13.8 Max.	12.8 Max.	3.50 Max.	By Item <sup>(1)</sup>	6.00±0.20	2.00±0.50	2.50±0.10	14.5 Ref.	8.50 Ref.	5.00 Ref.
13050	14.0 Max.	12.8 Max.	5.20 Max.	By Item <sup>(2)</sup>	6.00±0.20	2.00±0.50	2.50±0.10	14.5 Ref.	8.00 Ref.	5.00 Ref.

(1) D Dimension: L < 1R0: 4.0±0.5 ; L ≥ 1R0 : 3.0±0.5

(2) D Dimension: L < 2R2: 4.0±0.5 ; L ≥ 2R2 : 3.0±0.5

**● ELECTRICAL CHARACTERISTICS**

Part Number	Inductance L(uH)	DCR (mOhm) [Typ.]/[Max.]	Isat (Amp) [Typ.]/[Max.]	Irms (Amp) [Typ.]/[Max.]
WSP201610-R24M	0.24	18.0 / 23.0	6.70 / 6.10	5.10 / 4.50
WSP201610-R33M	0.33	21.0 / 26.0	5.70 / 5.20	4.80 / 4.40
WSP201610-R47M	0.47	26.0 / 32.0	4.90 / 4.50	4.40 / 4.05
WSP201610-R68M	0.68	40.0 / 50.0	4.60 / 4.00	3.40 / 3.10
WSP201610-1R0M	1.00	49.0 / 59.0	3.90 / 3.65	3.20 / 3.00
WSP201610-1R5M	1.50	99.0 / 109.0	3.00 / 2.70	2.35 / 2.05
WSP201610-2R2M	2.20	142.0 / 150.0	2.65 / 2.45	2.20 / 2.00

\* Test Condition@1MHz,1.0Vrms, 25°C Ambient

\* M=Tolerance=±20%

\* Isat: Saturated Current measured at the point of L drop approximately 30%

\* Irms: Rated Current Loading when temperature rise approximately 40°C

Part Number	Inductance L(uH)	DCR (mOhm) [Typ.]/[Max.]	Isat (Amp) (Typ.)	Irms (Amp) (Typ.)
WSP252012S-R22M	0.22	8.0 / 10.0	7.00	7.30
WSP252012S-R33M	0.33	14.0 / 17.0	5.80	5.50
WSP252012S-R47M	0.47	23.0 / 28.0	5.00	4.50
WSP252012S-R50M	0.50	25.0 / 30.0	4.80	4.30
WSP252012S-1R0M	1.00	45.0 / 55.0	3.80	3.10
WSP252012S-1R5M	1.50	58.0 / 70.0	2.90	2.70
WSP252012S-2R2M	2.20	86.0 / 105.0	2.50	2.30
WSP252012S-3R3M	3.30	120.0 / 144.0	2.00	1.75

\* Test Condition@1MHz,1.0Vrms, 25°C Ambient

\* M=Tolerance=±20%

\* Isat: Saturated Current measured at the point of L drop approximately 30%

\* Irms: Rated Current Loading when temperature rise approximately 40°C

Part Number	Inductance L(uH)	DCR (mOhm) [Typ.]/[Max.]	Isat (Amp) (Typ.)	Irms (Amp) (Typ.)
WSP04020N-R10M	0.10	4.50 / 5.00	30.0	11.0
WSP04020N-R22M	0.22	7.30 / 8.00	17.0	9.0
WSP04020N-R47M	0.47	14.00 / 15.50	11.5	6.0
WSP04020N-1R0M	1.00	32.00 / 36.00	8.5	3.8
WSP04020S-R10M	0.10	3.50 / 4.00	22.0	12.0
WSP04020S-R22M	0.22	6.00 / 6.60	12.5	9.0
WSP04020S-R47M	0.47	12.50 / 14.00	9.5	7.0
WSP04020S-1R0M	1.00	24.00 / 27.00	7.0	4.5
WSP04020S-1R5M	1.50	38.00 / 46.00	6.0	4.0
WSP04020S-2R2M	2.20	52.00 / 58.00	5.0	3.0
WSP04020S-3R3M	3.30	74.00 / 87.00	4.0	2.5

\* Test Condition@ 100KHz,1.0Vrms, 25°C Ambient

\* M=Tolerance=±20%

\* Isat: Saturated Current measured at the point of L drop approximately 20% [N Type]

\* Isat: Saturated Current measured at the point of L drop approximately 30% [S Type]

\* Irms: Rated Current Loading when temperature rise approximately 40°C



Part Number	Inductance L(uH)	DCR (mOhm) [Typ.]/[Max.]	Isat (Amp) (Typ.)	Irms (Amp) (Typ.)
WSP05030N-R68M	0.68	11.0 / 12.00	14.0	8.5
WSP05030N-1R0M	1.00	13.0 / 14.00	11.0	7.0
WSP05030N-1R2M	1.20	15.0 / 16.00	11.0	6.5
WSP05030N-1R5M	1.50	20.0 / 25.00	10.0	6.0
WSP05030N-2R2M	2.20	29.0 / 35.00	9.0	5.5
WSP05030N-3R3M	3.30	32.0 / 38.00	7.0	5.0
WSP05030S-R10M	0.10	2.00 / 2.50	34.0	32.0
WSP05030S-R12M	0.12	2.20 / 2.60	32.0	30.0
WSP05030S-R20M	0.20	3.50 / 3.90	14.5	21.0
WSP05030S-R22M	0.22	3.50 / 3.90	14.5	21.0
WSP05030S-R35M	0.35	4.50 / 5.00	9.0	16.5
WSP05030S-R47M	0.47	7.40 / 8.50	12.0	13.0
WSP05030S-R56M	0.56	8.20 / 9.50	10.0	11.0
WSP05030S-4R7M	4.70	50.0 / 60.00	5.0	3.0
WSP05030S-6R8M	6.80	96.0 / 110.00	3.5	3.0

\* Test Condition@ 100KHz,1.0Vrms, 25°C Ambient

\* M=Tolerance=±20%

\* Isat: Saturated Current measured at the point of L drop approximately 20% [N Type]

\* Isat: Saturated Current measured at the point of L drop approximately 30% [S Type]

\* Irms: Rated Current Loading when temperature rise approximately 40°C

Part Number	Inductance L(uH)	DCR (mOhm) [Typ.]/[Max.]	Isat (Amp) (Typ.)	Irms (Amp) (Typ.)
WSP06018S-R10M	0.10	2.00 / 2.50	45.0	18.0
WSP06018S-R33M	0.33	5.20 / 6.80	22.0	12.0
WSP06018S-R47M	0.47	7.30 / 8.40	18.0	11.0
WSP06018S-R68M	0.68	10.80 / 12.70	17.0	9.0
WSP06018S-1R0M	1.00	14.50 / 17.00	14.0	7.0
WSP06018S-2R0M	2.00	28.00 / 32.00	13.0	6.0
WSP06018S-2R2M	2.20	31.00 / 35.00	13.0	6.0
WSP06018S-3R3M	3.30	56.00 / 60.00	10.0	3.5
WSP06018S-4R7M	4.70	68.00 / 70.00	5.0	3.5

\* Test Condition@ 100KHz,1.0Vrms, 25°C Ambient

\* M=Tolerance=±20%

\* Isat: Saturated Current measured at the point of L drop approximately 30%

\* Irms: Rated Current Loading when temperature rise approximately 40°C



Part Number	Inductance L( $\mu$ H)	DCR (mOhm) [Typ.]/[Max.]	Isat (Amp) (Typ.)	Irms (Amp) (Typ.)
WSP06030S-1R5M	1.50	10.80 / 12.00	11.5	9.0
WSP06030S-1R2M	2.20	18.00 / 20.00	10.0	8.0
WSP06030S-4R7M	4.70	32.50 / 35.00	6.5	5.5
WSP06030S-8R2M	8.20	54.00 / 60.00	6.0	4.5
WSP06030S-100M	10.00	62.00 / 68.00	5.5	4.0
WSP06030N-R10M	0.10	1.50 / 1.70	60.0	32.5
WSP06030N-R20M	0.20	2.40 / 3.00	41.0	24.0
WSP06030N-R22M	0.22	2.50 / 2.80	40.0	23.0
WSP06030N-R25M	0.25	3.00 / 3.50	39.0	21.0
WSP06030N-R33M	0.33	3.50 / 3.90	30.0	20.0
WSP06030N-R47M	0.47	4.00 / 4.20	26.0	17.5
WSP06030N-R56M	0.56	4.70 / 5.00	25.5	16.5
WSP06030N-R68M	0.68	5.00 / 5.50	25.0	15.5
WSP06030N-R82M	0.82	6.70 / 8.00	24.0	13.0
WSP06030N-R90M	0.90	9.00 / 10.00	22.0	11.0
WSP06030N-1R0M	1.00	9.00 / 10.00	22.0	11.0
WSP06030N-1R2M	1.20	10.00 / 12.00	20.0	10.0
WSP06030N-1R5M	1.50	14.00 / 15.00	18.0	9.0
WSP06030N-2R2M	2.20	18.00 / 20.00	14.0	8.0
WSP06030N-2R5M	2.50	20.00 / 22.00	14.0	7.0
WSP06030N-3R3M	3.30	28.00 / 30.00	13.5	6.0
WSP06030N-4R7M	4.70	37.00 / 40.00	10.0	5.5
WSP06030N-6R8M	6.80	54.00 / 60.00	8.0	4.5

\* Test Condition@ 100KHz,1.0Vrms, 25°C Ambient

\* M=Tolerance=±20%

\* Isat: Saturated Current measured at the point of L drop approximately 20% [N Type]

\* Isat: Saturated Current measured at the point of L drop approximately 30% [S Type]

\* Irms: Rated Current Loading when temperature rise approximately 40°C



Part Number	Inductance L(uH)	DCR (mOhm) [Typ.]/[Max.]	Isat (Amp) (Typ.)	Irms (Amp) (Typ.)
WSP10040N-R15M	0.15	0.50 / 0.65	75.0	40.0
WSP10040N-R19M	0.19	0.70 / 0.80	60.0	38.0
WSP10040N-R22M	0.22	0.90 / 1.00	60.0	35.0
WSP10040N-R36M	0.36	1.05 / 1.20	60.0	30.0
WSP10040N-R39M	0.39	1.10 / 1.30	60.0	30.0
WSP10040N-R41M	0.41	1.10 / 1.30	60.0	30.0
WSP10040N-R45M	0.45	1.10 / 1.30	45.0	29.0
WSP10040N-R47M	0.47	1.60 / 1.80	40.0	26.0
WSP10040N-R56M	0.56	1.60 / 1.80	33.0	25.0
WSP10040N-R68M	0.68	2.40 / 2.70	39.0	22.0
WSP10040N-R88M	0.88	2.70 / 3.00	38.0	20.0
WSP10040N-1R0M	1.00	3.00 / 3.30	36.0	18.0
WSP10040N-1R5M	1.50	3.80 / 4.20	33.0	16.0
WSP10040N-2R2M	2.20	6.70 / 7.00	27.0	12.0
WSP10040N-4R7M	4.70	15.00 / 16.50	17.0	9.5
WSP10040S-3R3M	3.30	10.80 / 11.80	16.0	10.0

\* Test Condition@ 100KHz,1.0Vrms, 25°C Ambient

\* M=Tolerance=±20%

\* Isat: Saturated Current measured at the point of L drop approximately 20% [N Type]

\* Isat: Saturated Current measured at the point of L drop approximately 30% [S Type]

\* Irms: Rated Current Loading when temperature rise approximately 40°C

Part Number	Inductance L(uH)	DCR (mOhm) [Typ.]/[Max.]	Isat (Amp) (Typ.)	Irms (Amp) (Typ.)
WSP13035F-R22M	0.22	1.10 / 1.30	65.0	38.0
WSP13035F-R33M	0.33	1.30 / 1.50	62.0	36.5
WSP13035F-R39M	0.39	1.10 / 1.30	65.0	38.0
WSP13035F-R47M	0.47	1.70 / 2.00	55.0	32.0
WSP13035F-R56M	0.56	1.80 / 2.20	51.0	29.0
WSP13035F-R62M	0.62	1.80 / 2.20	51.0	29.0
WSP13035F-R68M	0.68	2.30 / 2.50	49.0	28.0
WSP13035F-1R0M	1.00	3.30 / 3.50	40.0	24.0
WSP13035F-1R5M	1.50	5.10 / 5.50	35.0	19.0
WSP13035F-2R2M	2.20	7.20 / 8.00	29.0	16.0
WSP13035F-3R3M	3.30	10.00 / 12.00	27.0	12.0
WSP13035F-4R7M	4.70	16.00 / 18.00	22.0	9.0

\* Test Condition@ 100KHz,1.0Vrms, 25°C Ambient

\* M=Tolerance=±20%

\* Isat: Saturated Current measured at the point of L drop approximately 20%

\* Irms: Rated Current Loading when temperature rise approximately 40°C



Part Number	Inductance L(uH)	DCR (mOhm) [Typ.]/[Max.]	Isat (Amp) (Typ.)	Irms (Amp) (Typ.)
WSP13050F-R15M	0.15	0.55 / 0.70	110.0	45.0
WSP13050F-R36M	0.36	0.77 / 1.10	75.0	41.0
WSP13050F-R47M	0.47	1.10 / 1.30	65.0	38.0
WSP13050F-R50M	0.50	1.20 / 1.50	55.0	36.0
WSP13050F-R56M	0.56	1.20 / 1.50	55.0	36.0
WSP13050F-R62M	0.62	1.50 / 1.70	54.0	34.0
WSP13050F-R68M	0.68	1.50 / 1.70	54.0	34.0
WSP13050F-R82M	0.82	1.80 / 2.10	53.0	31.0
WSP13050F-1R0M	1.00	2.10 / 2.50	50.0	29.0
WSP13050F-1R2M	1.20	2.60 / 3.00	49.0	25.0
WSP13050F-1R5M	1.50	3.40 / 4.10	48.0	23.0
WSP13050F-2R2M	2.20	4.60 / 5.50	32.0	20.0
WSP13050F-3R3M	3.30	7.70 / 9.20	32.0	15.0
WSP13050F-4R7M	4.70	12.80 / 15.00	27.0	12.0
WSP13050F-6R3M	6.30	15.40 / 18.50	21.0	11.0
WSP13050F-6R8M	6.80	15.40 / 18.50	21.0	11.0

\* Test Condition@ 100KHz,1.0Vrms, 25°C Ambient

\* M=Tolerance=±20%

\* Isat: Saturated Current measured at the point of L drop approximately 20%

\* Irms: Rated Current Loading when temperature rise approximately 40°C



●**RELIABILITY**

Test Item	Test Condition	Specification
External Visual MIL-STD-883 Method 2009	Inspect device construction and workmanship. Electrical test not required.	There is no change for appearance (electrode did not fall off, loose, no breakage, ferrite core did not break, damage)
Physical Dimension JESD22 Method JB-100	Verify physical dimensions to the device specification.	For Spec.
Thermal Shock MIL-STD-202 Method 107	Temperature: $-40\pm 2^{\circ}\text{C} \sim +125\pm 2^{\circ}\text{C}$ Max transfer time: 20 s. Dwell time: 15 minutes. Air - Air	There is no change for appearance (electrode did not fall off, loose, no breakage, ferrite core did not break, damage) Inductor value/resistance change rate $\pm 10\%$ .
Humidity Resistance MIL-STD-202 Method 103	Humidity: 85% RH Temperature: $85^{\circ}\text{C}$ Test time: 1000 Hours	There is no change for appearance (electrode did not fall off, loose, no breakage, ferrite core did not break, damage) Inductor value/resistance change rate $\pm 10\%$
High Temperature MIL-STD-202 Method 108	Temperature: $125\pm 2^{\circ}\text{C}$ Test time: 1000 Hours	There is no change for appearance (electrode did not fall off, loose, no breakage, ferrite core did not break, damage) Inductor value/resistance change rate $\pm 10\%$
Temperature and Humidity Cycle JESD22 Method JA-10040	Temperature: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$ Cycles: 1000	There is no change for appearance (electrode did not fall off, loose, no breakage, ferrite core did not break, damage) Inductor value/resistance change rate $\pm 10\%$
Operational Life MIL-PRF-27	Temperature: $125^{\circ}\text{C}$ Load: Allowed DC current Test time: 1000 Hours	No short circuit, open circuit.
Vibration MIL-STD-202 Method 204	5 g's for 20 minutes, 12 cycles each of 3 orientations. Test from 10Hz ~ 2000Hz	No bad phenomenon.
Mechanical Shock MIL-STD-202 Method 213	Figure 1 of Method 213 SMD: Condition C.	No bad phenomenon.
Resistance to Soldering Head MIL-STD-202 Method 210	Condition B No pre-heat of samples. Temperature 250 up / 5 s. Temperature 183 up / 90 ~ 120 s.	Tin solder have to cover over 90% area.
Solderability J-STD-002	a. Method B, 4 Hours@ $155^{\circ}\text{C}$ dry heat@ $235^{\circ}\text{C}$ b. Method B @ $215^{\circ}\text{C}$ category 3 c. Method D @ $260^{\circ}\text{C}$ category 3	No change and transform form the appearance.



● **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)

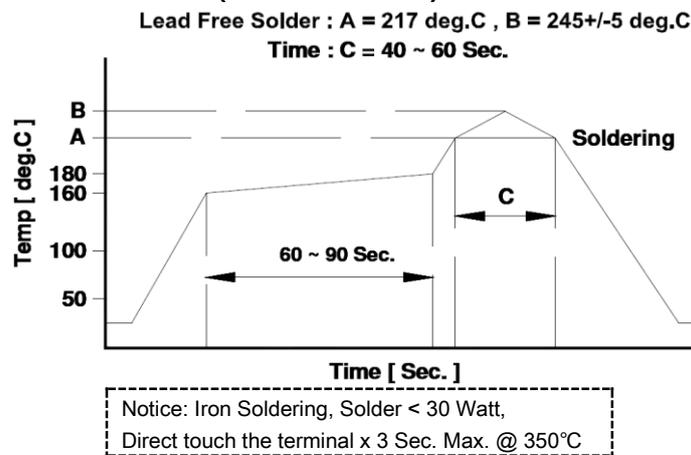
Standard Atmosphere Conditions:

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:

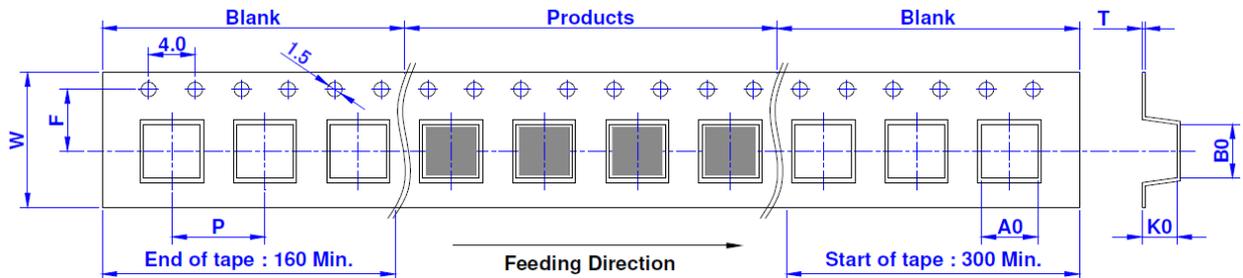
- (1) Storage Condition:  
Temperature 25 to 35°C, Humidity 45 to 60% RH
- (2) Use Temperature:
  - a. Minimum Temperature: -40°C Ambient temperature of this product.
  - b. Maximum Temperature: +125°C The value of temperature including ambient and temperature rise of this product.
  - c. Reliability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

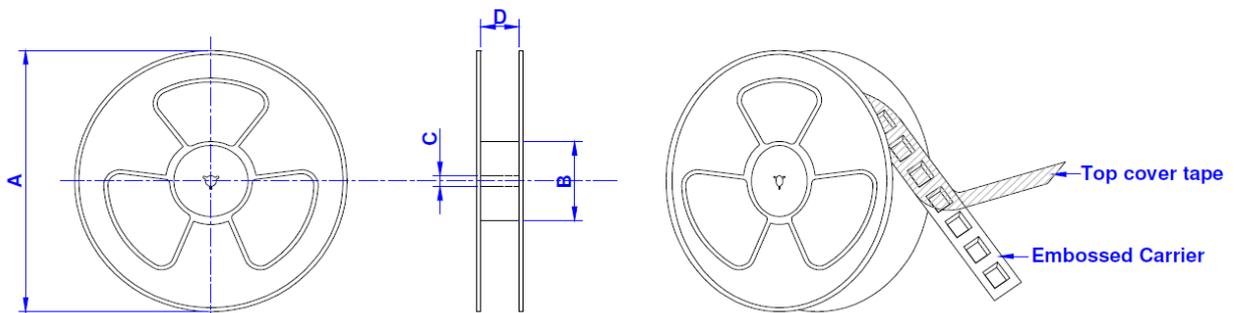


●TAPE DIMENSION: mm



SIZE/mm	W	P	A0	B0	K0	T	F
201610	8.00	4.00	1.80	2.20	1.20	0.23	3.50
252012	8.00	4.00	2.27	2.74	1.40	0.23	3.50
04020	12.00	8.00	4.20	4.50	2.50	0.30	5.50
05030	16.00	12.00	5.20	5.50	3.75	0.30	7.50
06018	16.00	12.00	7.00	7.50	2.55	0.30	7.50
06030	16.00	12.00	7.00	7.50	3.60	0.30	7.50
10040	24.00	16.00	10.60	12.00	4.50	0.35	11.50
13035	24.00	16.00	13.50	14.20	3.85	0.35	11.50
13050	24.00	16.00	13.50	14.20	5.20	0.35	11.50

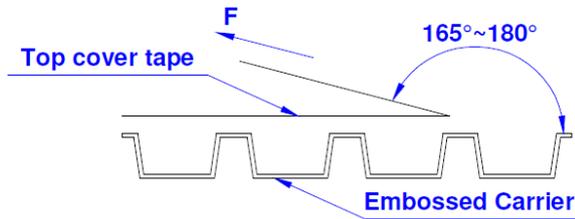
●REEL DIMENSION: mm



SIZE / mm	REEL SIZE	A	B	C	D	QTY/REEL
201610	7" x 8 mm	178	60	13	8.5	2000 PCS
252012	7" x 8 mm	178	60	13	8.5	2000 PCS
04020	13" x 12 mm	330	100	13	12.5	2000 PCS
05030	13" x 16 mm	330	100	13	16.5	1000 PCS
06018	13" x 16 mm	330	100	13	16.5	1000 PCS
06030	13" x 16 mm	330	100	13	16.5	1000 PCS
10040	13" x 24 mm	330	100	13	24.5	500 PCS
13035	13" x 24 mm	330	100	13	24.5	500 PCS
13050	13" x 24 mm	330	100	13	24.5	500 PCS



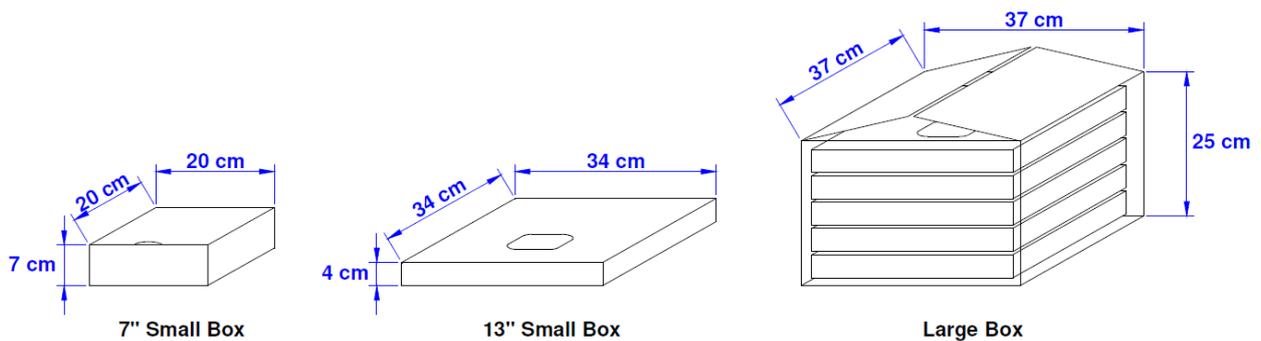
●TEARING OFF FORCE:



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



SIZE/mm	Reels in Small Box	Small Box in Large Box
201610	5	8
252012	5	8
04020	2	5
05030	1	5
06018	1	5
06030	1	5
10040	1	5
13035	1	5
13050	1	5



## **IMPORTANT NOTICE**

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