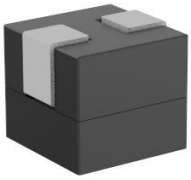
Low Profile, High Current Power Inductors



Features

- SMD inductors
- High current and lower DCR
- Ferrite core material
- Operating temperature range: –40 to +125°C (including self-temperature rise)
- Shielded construction

Environmental Data

- Storage Conditions (In Original Packaging): <40°C ; <75%RH
- Operating temperature range: -40°C to +125°C (Ambient plus self temperature rise)
- Solder reflow temperature: J-STD-020D compliant

Applications

- Servers
- Multi-phase and Vcore regulators
- Voltage Regulator Modules (VRMs)
  - Server and desktop
  - Central processing unit (CPU)
  - Graphics processing unit (GPU)
  - Specific integrated circuit (ASIC)
  - High power density
- Notebook regulators
- Battery power systems
- Graphics cards

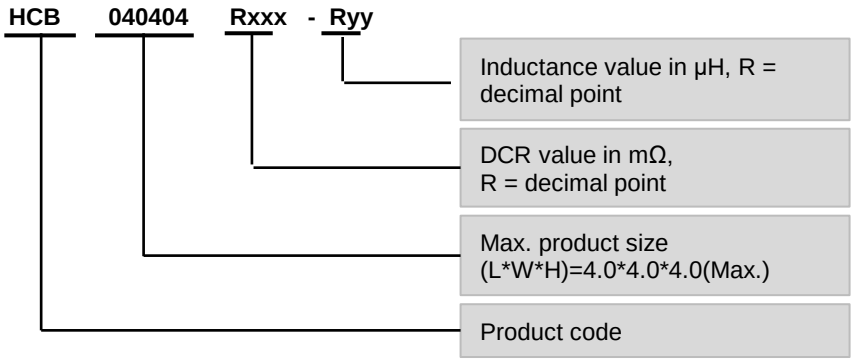
Product Specifications

Part Number[5]	OCL[1] (nH) ±15%	Irms[2] (Amps)	Isat[3] (Amps)	Height (max.)	DCR(mΩ) typical @ +20 °C
HCB040404R32-R05	55	19	30	4.0	0.32
HCB040404R32-R06	65	19	26	4.0	0.32
HCB040404R32-R08	80	19	22	4.0	0.32
HCB040404R32-R10	100	19	17	4.0	0.32

Notes:

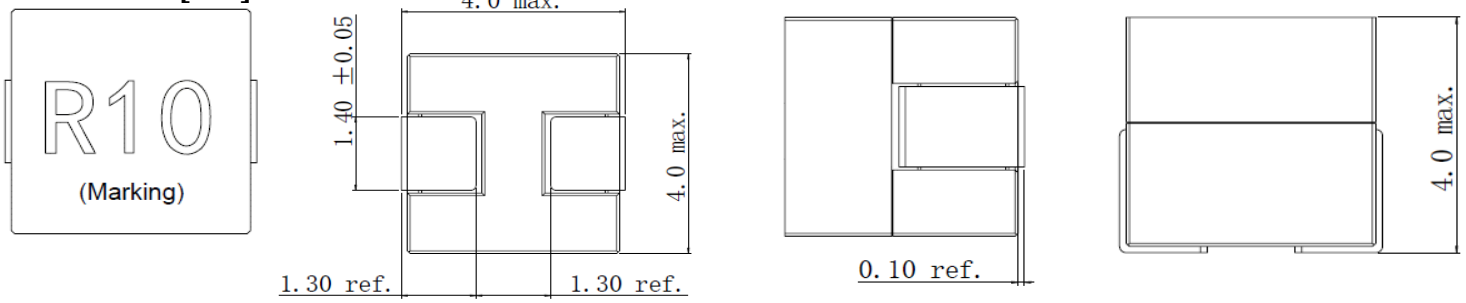
1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 1 Vrms,0.0 Adc, +25 °C
2. Irms: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.
3. Isat : Peak current for approximately 20% rolloff @+25 °C
4. Measurement Equipment: WK3260B+WK3265B

5. Part Number Definition:



Technical Data HCB040404R32 Series

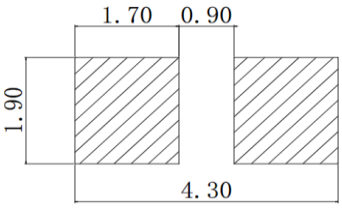
Dimensions:[mm]



Product Marking:

Part Code	Ryy
Date Code	YYWW

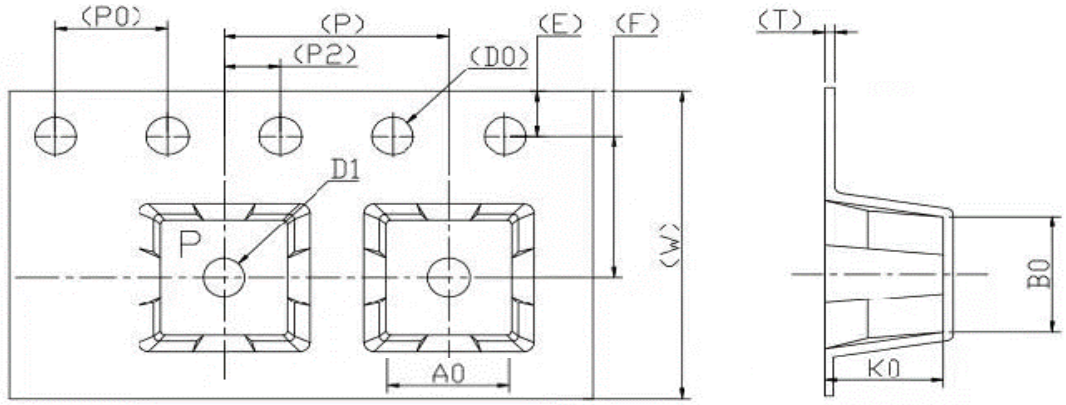
Recommended Pad Layout:[mm]



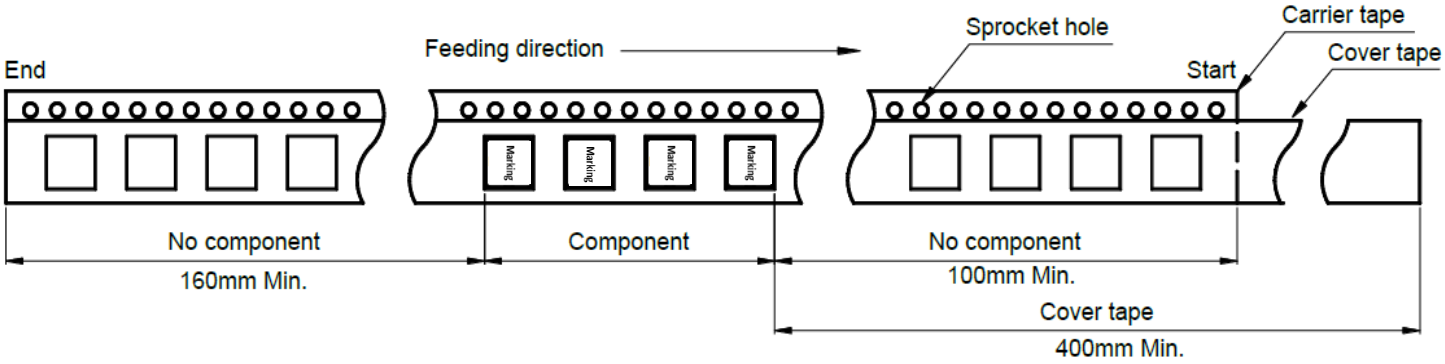
Schematic:

Packaging Information:[mm]

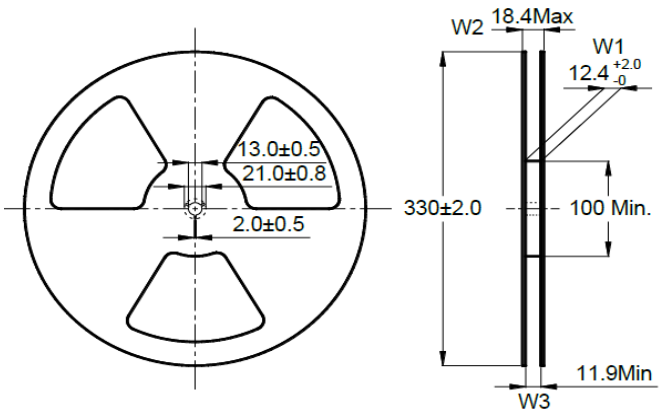
Tape Dimensions



Material	A0(±0.1)	B0(±0.1)	W (±0.3)	T (±0.05)	K0(±0.1)	P(±0.1)	F(±0.1)	E(±0.1)	D0(±0.1)	P0(±0.1)	P2(±0.1)	D1(±0.1)
Polystyrene	4.50	4.50	12.00	0.40	4.20	8.00	5.50	1.75	1.50	4.00	2.00	1.50

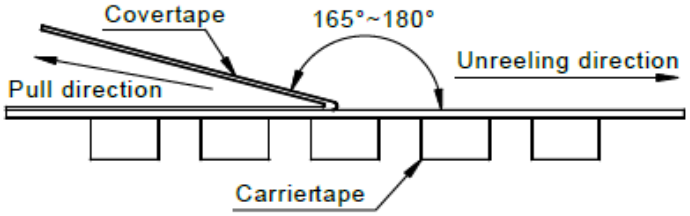


Reel Dimensions



Cover tape peel off condition

Tape Width	Peel-off Force	Peel Speed
12/16/24mm	0.1~1.3N	300±10mm/M



Packing Quantity

Part Number	Quantity (pcs/reel)
HCB040404R32 Type	1800

Recommended Reflow Profile:

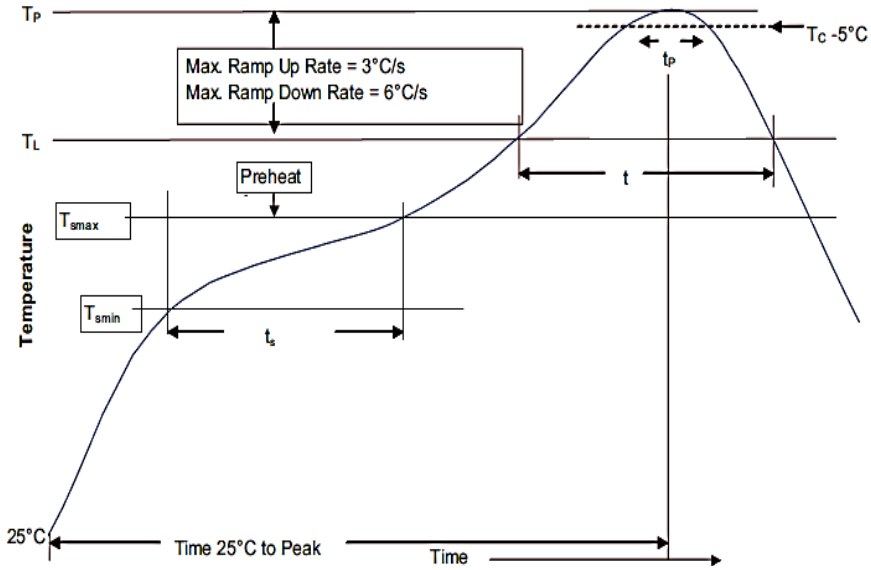


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

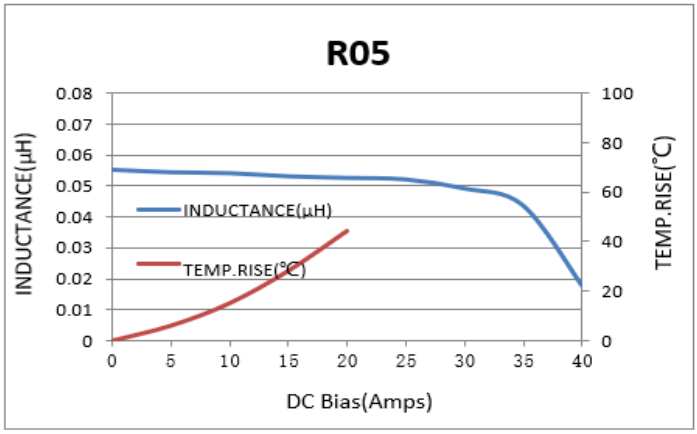
Table 2 - Lead (Pb) Free Solder (T_C)

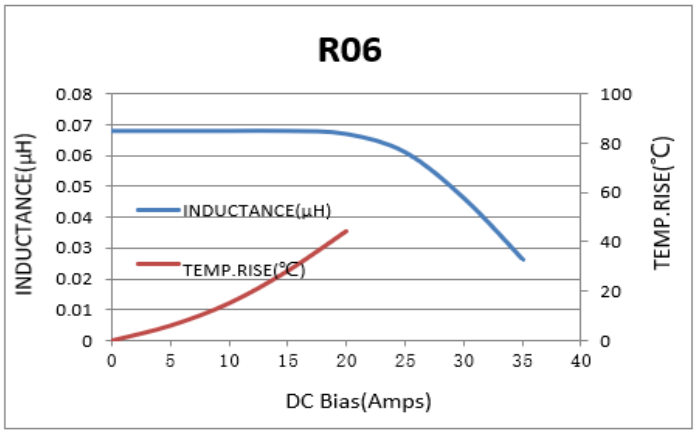
Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

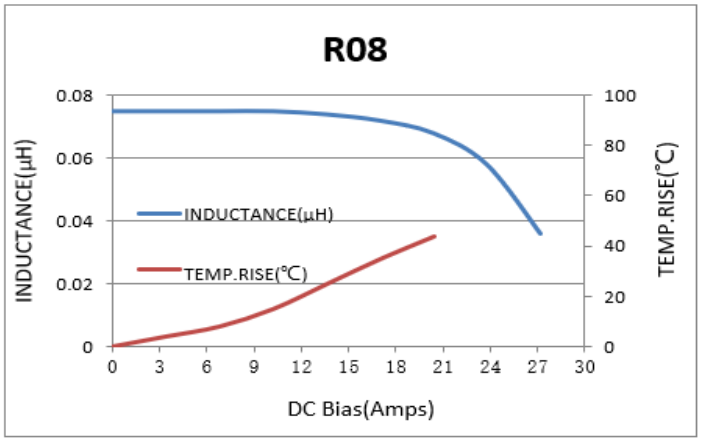
Profile Feature		Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{smin})	100°C	150°C
	• Temperature max. (T_{smax})	150°C	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 Seconds	60-120 Seconds
Average ramp up rate T_{smax} to T_p		3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 60-150 Seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)** within 5 °C of the specified classification temperature (T_C)		20 Seconds**	30 Seconds**
Average ramp-down rate (T_p to T_{smax})		6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature		6 Minutes Max.	8 Minutes Max.

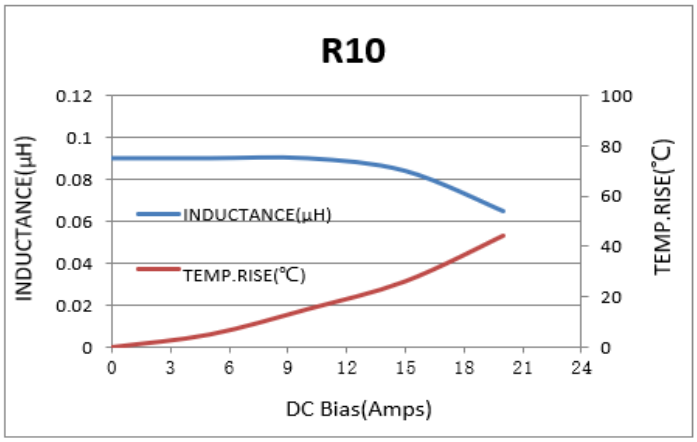
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.
** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

Inductance Characteristics:









Low Profile, High Current Power Inductors

Features

- SMD inductors
- High current and lower DCR
- Ferrite core material
- Operating temperature range: –40 to +125°C (including self-temperature rise)
- Shielded construction

Environmental Data

- Storage Conditions (In Original Packaging): <40°C ; <75%RH
- Operating temperature range: -40°C to +125°C (Ambient plus self temperature rise)
- Solder reflow temperature: J-STD-020D compliant

Applications

- Servers
- Multi-phase and Vcore regulators
- Voltage Regulator Modules (VRMs)
  - Server and desktop
  - Central processing unit (CPU)
  - Graphics processing unit (GPU)
  - Specific integrated circuit (ASIC)
  - High power density
- Notebook regulators
- Battery power systems
- Graphics cards

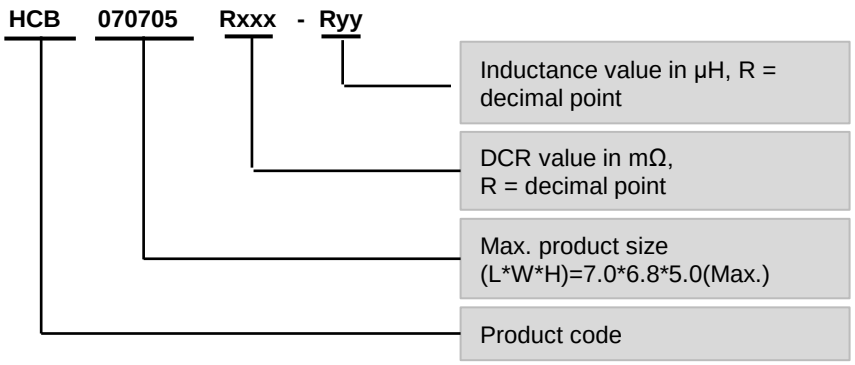
Product Specifications

Part Number[5]	OCL[1] (nH) ±15%	Irms[2] (Amps)	Isat[3] (Amps)	Height (max.)	DCR(mΩ) typical @ +20 °C
HCB070705R32-R10	100	50	53	5.0	0.32
HCB070705R32-R12	120	50	40	5.0	0.32
HCB070705R32-R15	150	50	35	5.0	0.32
HCB070705R32-R18	180	50	28	5.0	0.32

Notes:

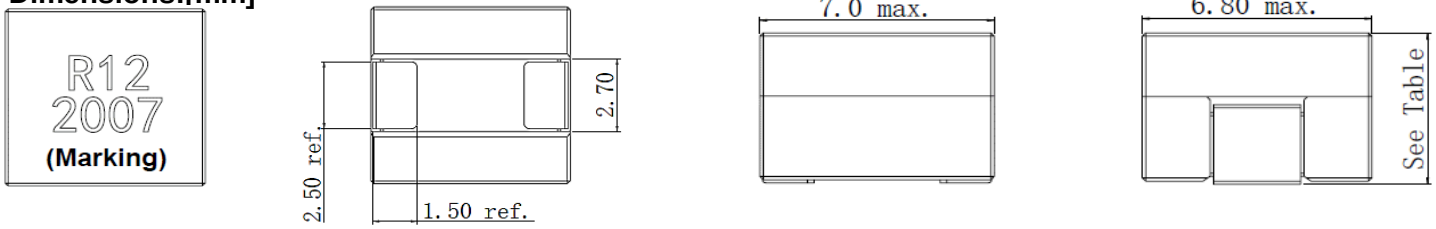
1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 0.1 Vrms,0.0 Adc, +25 °C
2. Irms: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.
3. Isat : Peak current for approximately 20% rolloff @+25 °C
4. Measurement Equipment: WK3260B+WK3265B

5. Part Number Definition:



Technical Data HCB070705R32 Series

Dimensions:[mm]



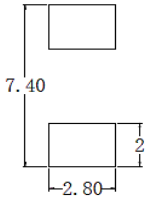
Product Marking:

Part Code	Ryy
Date Code	YYWW

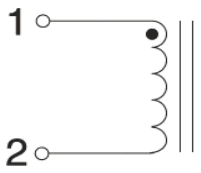
Table

Part Number	Max. Height
HCB070705R32 Type	5.0

Recommended Pad Layout:[mm]

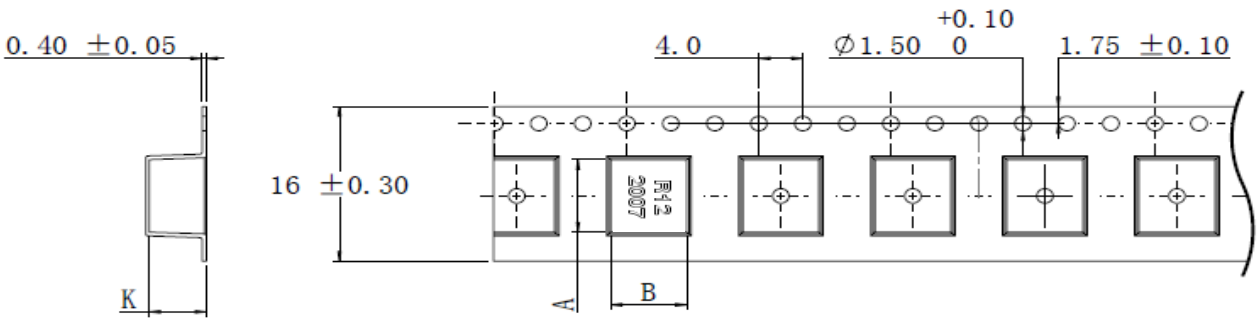


Schematic:

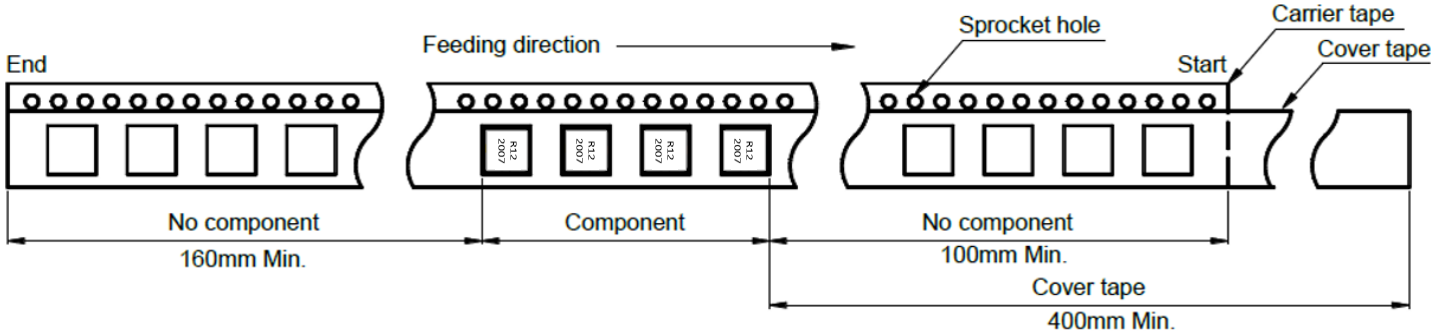


Packaging Information:[mm]

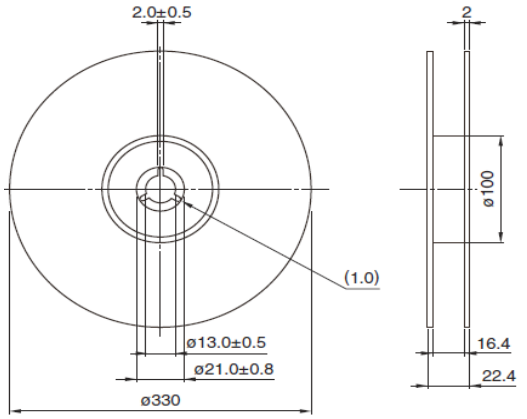
Tape Dimensions



Part Number	A	B	K
HCB070705R32 Type	7.5±0.1	6.9±0.1	5.2±0.1

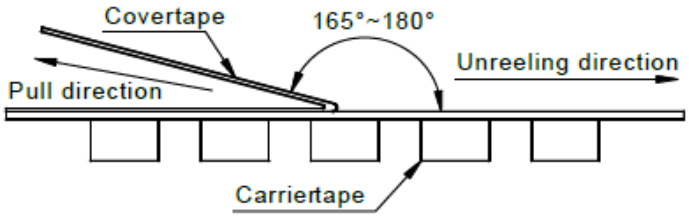


Reel Dimensions



Cover tape peel off condition

Tape Width	Peel-off Force	Peel Speed
16/24mm	0.1~1.3N	300±10mm/M



Packing Quantity

Part Number	Quantity (pcs/reel)
HCB070705R32 Type	900

Recommended Reflow Profile:

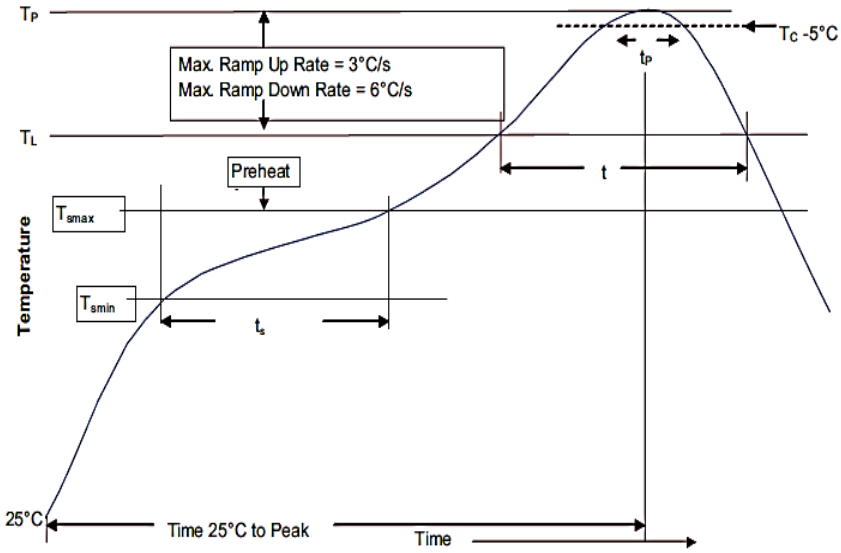


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

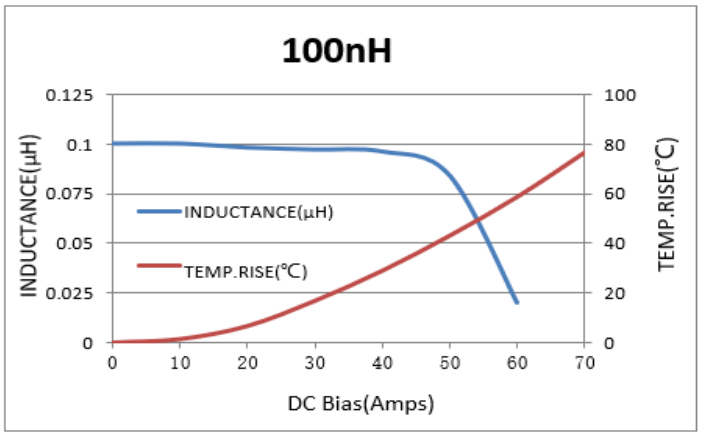
Table 2 - Lead (Pb) Free Solder (T_C)

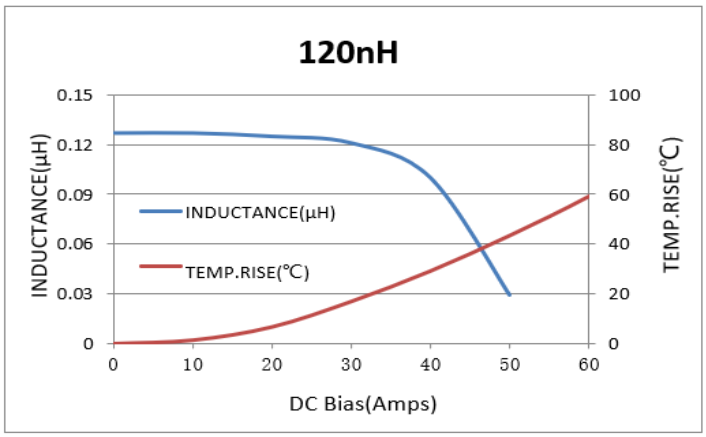
Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

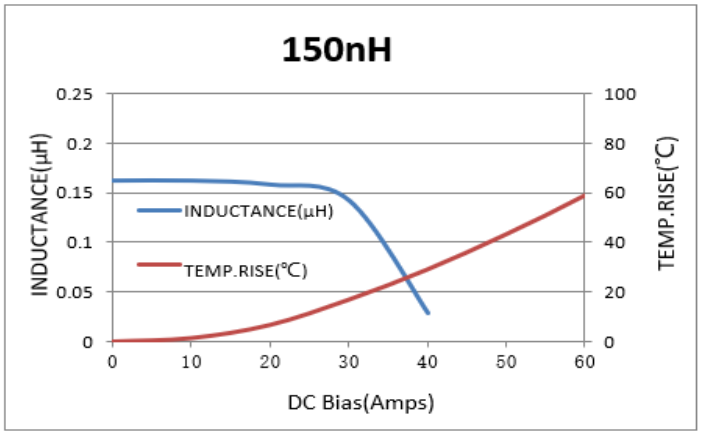
Profile Feature		Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{smin})	100°C	150°C
	• Temperature max. (T_{smax})	150°C	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 Seconds	60-120 Seconds
Average ramp up rate T_{smax} to T_p		3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 60-150 Seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)** within 5 °C of the specified classification temperature (T_C)		20 Seconds**	30 Seconds**
Average ramp-down rate (T_p to T_{smax})		6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature		6 Minutes Max.	8 Minutes Max.

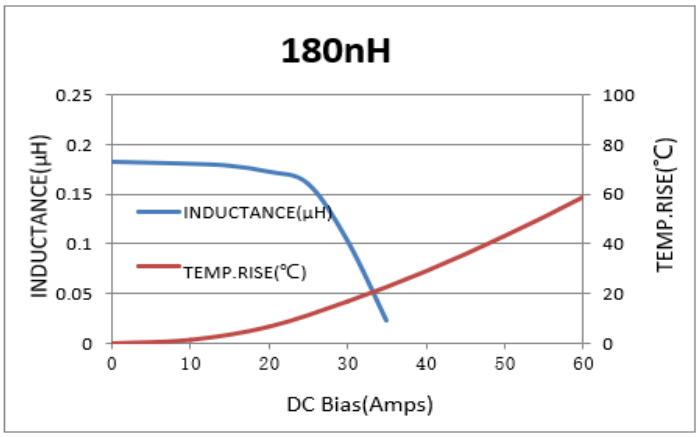
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.
** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

Inductance Characteristics:

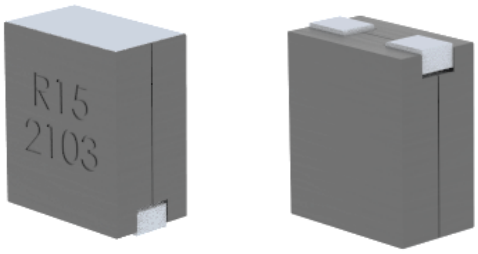








Low Profile, High Current Power Inductors



Features

- SMD inductors
- High current and lower DCR
- Ferrite core material
- Operating temperature range: –40 to +125°C (including self-temperature rise)
- Shielded construction

Environmental Data

- Storage Conditions (In Original Packaging): <40°C ; <75%RH
- Operating temperature range: -40°C to +125°C (Ambient plus self temperature rise)
- Solder reflow temperature: J-STD-020D compliant

Applications

- Servers
- Multi-phase and Vcore regulators
- Voltage Regulator Modules (VRMs)
  - Server and desktop
  - Central processing unit (CPU)
  - Graphics processing unit (GPU)
  - Specific integrated circuit (ASIC)
  - High power density
- Notebook regulators
- Battery power systems
- Graphics cards

Product Specifications

Part Number[5]	OCL[1] (nH) ±15%	Irms[2] (Amps)	Isat[3] (Amps)	Height (max.)	DCR(mΩ) typical @ +20 °C
HCB100612R125-R07	70	77	180	12.0	0.125
HCB100612R125-R10	100	77	125	12.0	0.125
HCB100612R125-R12	120	77	106	12.0	0.125
HCB100612R125-R15	150	77	83	12.0	0.125
HCB100612R125-R33	330	77	40	12.0	0.125

Notes:

1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 1 Vrms,0.0 Adc, +25 °C
2. Irms: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.
3. Isat : Peak current for approximately 20% rolloff @+25 °C
4. Measurement Equipment: WK3260B+WK3265B

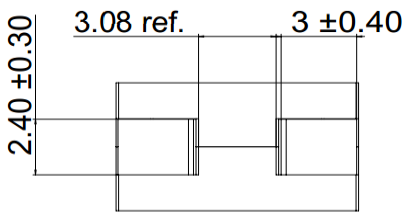
5. Part Number Definition:

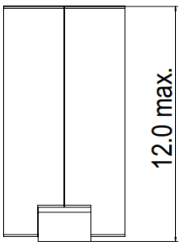
HCB 100612 Rxxx - Ryy

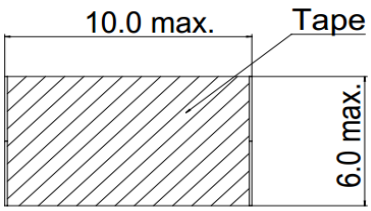
- HCB — Product code
- 100612 — Max. product size (L*W*H)=10.0*6.0*12.0(Max.)
- Rxxx — DCR value in mΩ, R = decimal point
- Ryy — Inductance value in μH, R = decimal point

Technical Data HCB100612R125 Series

Dimensions:[mm]



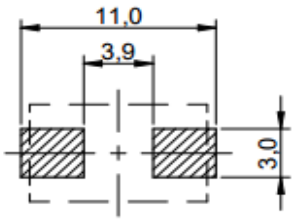




Product Marking:

Part Code	Ryy
Date Code	YYWW

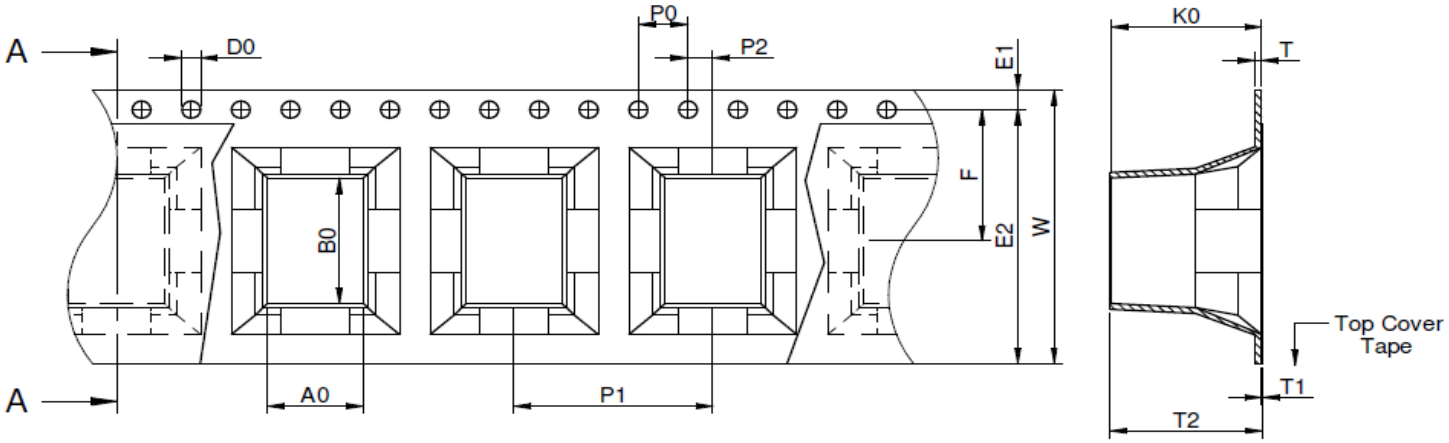
Recommended Pad Layout:[mm]



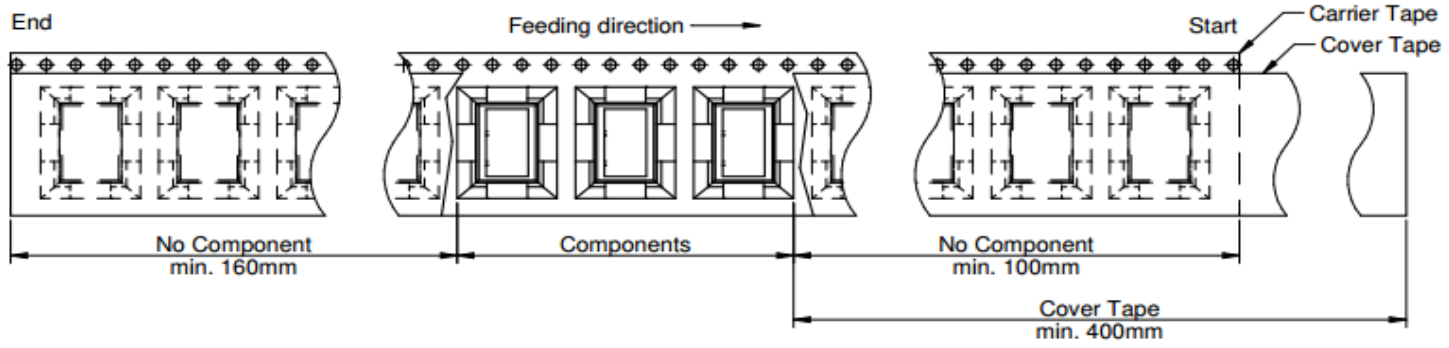
Schematic:

Packaging Information:[mm]

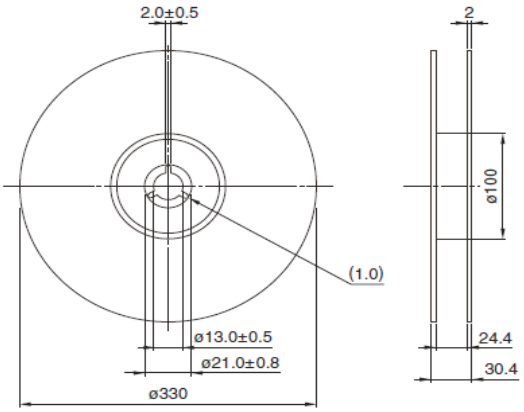
Tape Dimensions



Material	A0(typ.)	B0(typ.)	W (±0.3)	T (ref.)	T1 (max.)	T2 (typ.)	P0 (±0.1)	P1 (±0.1)	P2 (±0.1)	D0 (+0.1/-0.0)	E1 (±0.1)	E2 (min.)	F (±0.1)
Polystyrene	6.20	10.20	24.00	0.50	0.10	12.50	4.00	16.00	2.00	1.50	1.75	22.25	11.50

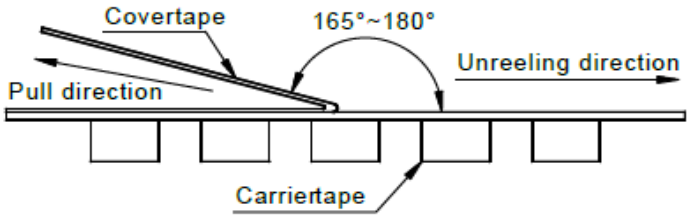


Reel Dimensions



Cover tape peel off condition

Tape Width	Peel-off Force	Peel Speed
16/24mm	0.1~1.3N	300±10mm/M



Packing Quantity

Part Number	Quantity (pcs/reel)
HCB100612R125 Type	300

Recommended Reflow Profile:

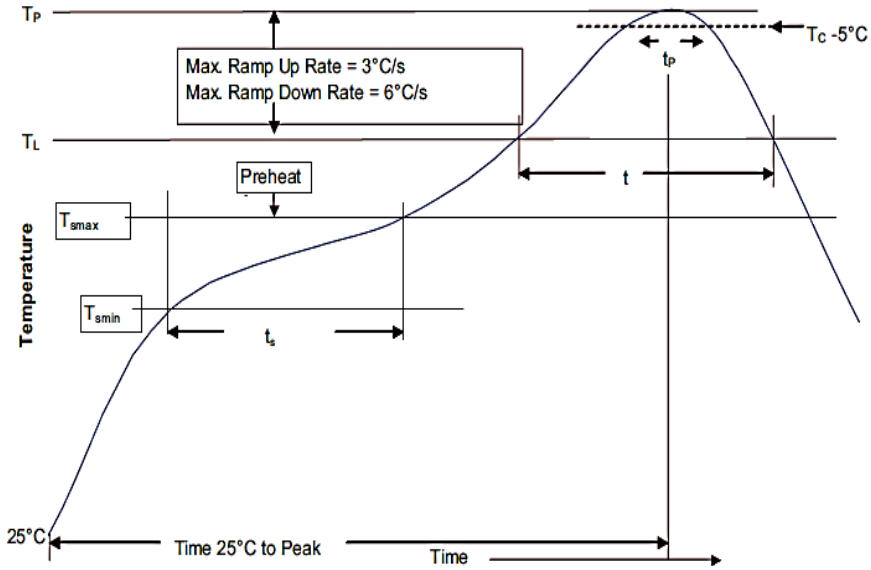


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

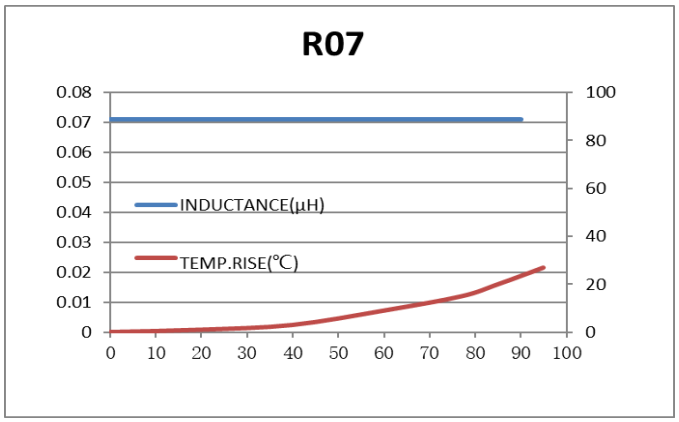
Table 2 - Lead (Pb) Free Solder (T_C)

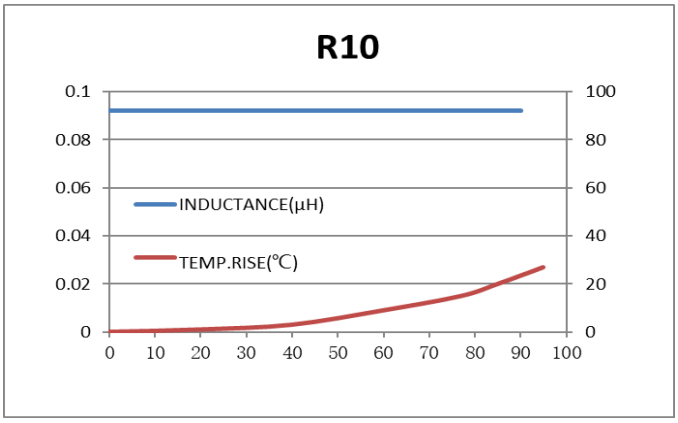
Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

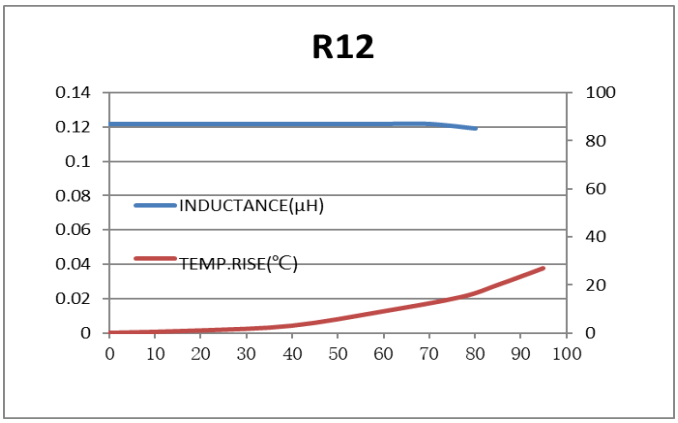
Profile Feature		Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{smin})	100°C	150°C
	• Temperature max. (T_{smax})	150°C	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 Seconds	60-120 Seconds
Average ramp up rate T_{smax} to T_p		3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 60-150 Seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)** within 5 °C of the specified classification temperature (T_C)		20 Seconds**	30 Seconds**
Average ramp-down rate (T_p to T_{smax})		6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature		6 Minutes Max.	8 Minutes Max.

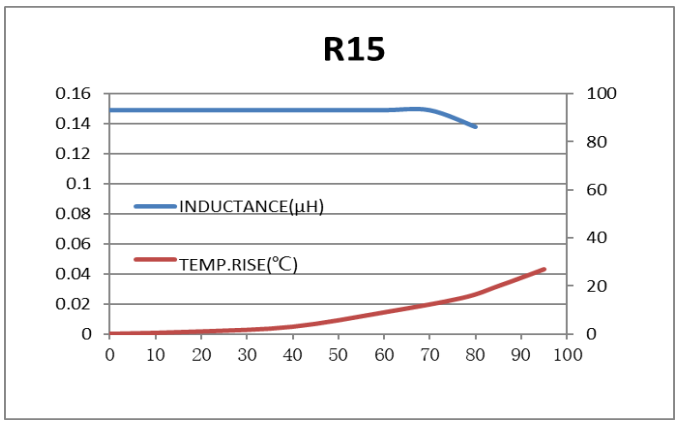
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.
** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

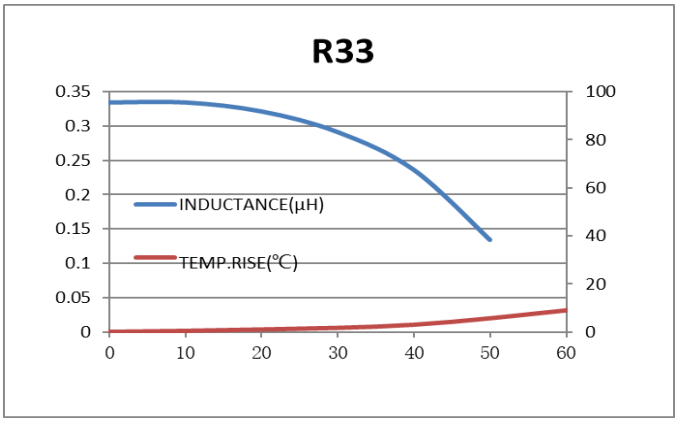
Inductance Characteristics:





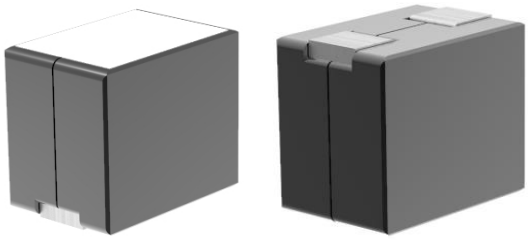


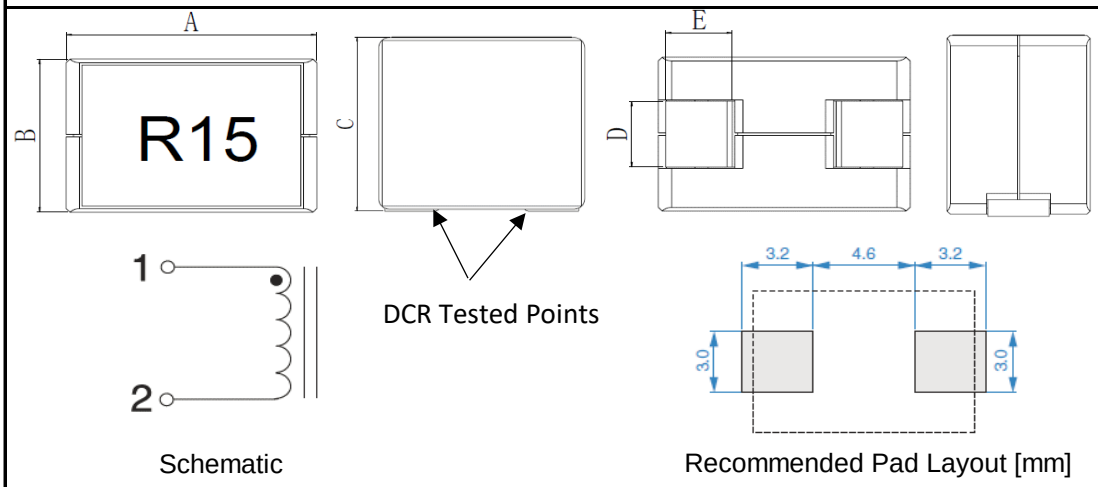




LOW PROFILE, HIGH CURRENT POWER BEAD INDUCTORS

1. SHAPE AND DIMENSIONS





Schematic

Recommended Pad Layout [mm]

UNIT(mm)	
A	10.0 (Max.)
B	7.0 (Max.)
C	9.0 (Max.)
D	2.7±0.25
E	2.5±0.25

2. PRODUCT SPECIFICATIONS

Part Number	OCL[1] (nH) ±15%	Irms[2] (Amps)	Isat[3] (Amps)	Width[4] (max.)	DCR(mΩ) @ +20 °C
HCB100709R18-R10	100	70	120	7.0	0.18±10%
HCB100709R18-R12	120	70	110	7.0	0.18±10%
HCB100709R18-R15	150	70	90	7.0	0.18±10%
HCB100709R18-R18	180	70	73	7.0	0.18±10%
HCB100709R18-R22	220	70	57	7.0	0.18±10%
HCB100709R18-R33	330	70	39	7.0	0.18±10%
HCB100709R18-R40	400	70	30	7.0	0.18±10%

Notes:

1. Open Circuit Inductance (OCL) Test Parameters:
100 kHz, 1 Vrms, 0.0 Adc, +25 °C
2. Irms: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.
3. Isat : Peak current for approximately 20% rolloff @+25 °C
4. Width: Product shape dimensions of width for different P/N

Remark: Measurement Equipment: WK3260B+WK3265B

3. TEMPERATURE RATING

Operating Temperature: -40°C to +125°C (Ambient plus self temperature rise)

Storage Temperature: In Original Packaging, <40°C ; <75%RH

4. PRODUCT IDENTIFICATION

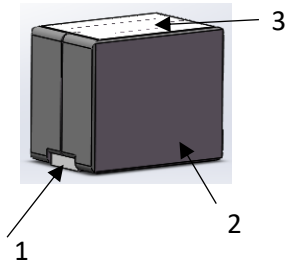
HCB	100709	RXX	-	RXX
1	2	3		4

1: Series Name
2: Product Dimensions
3: DCR Value (Ex. R18=0.18mΩ)
4: Inductance value (Ex. R15=150nH)

5. PRODUCT MARKING

RXX: Product Inductance Value (Ex. R15=150nH)
PI Label: Printed text

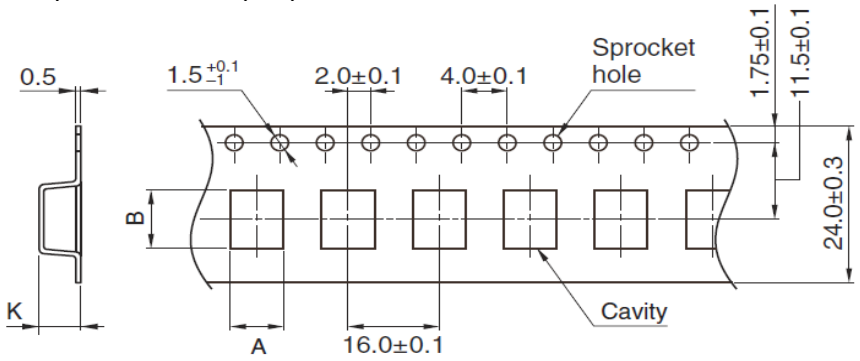
6. CONSTRUCTION AND MATERIAL LIST



No.	Part	Material
1	Clip	C1100
2	Core	Ferrite
3	Label	PI

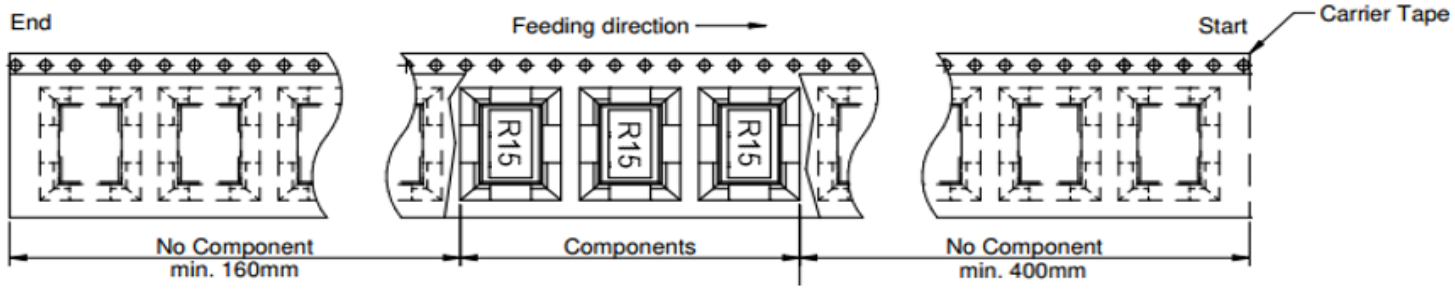
7.PACKAGING INFORMATION

7.1 Tape Dimensions (mm)

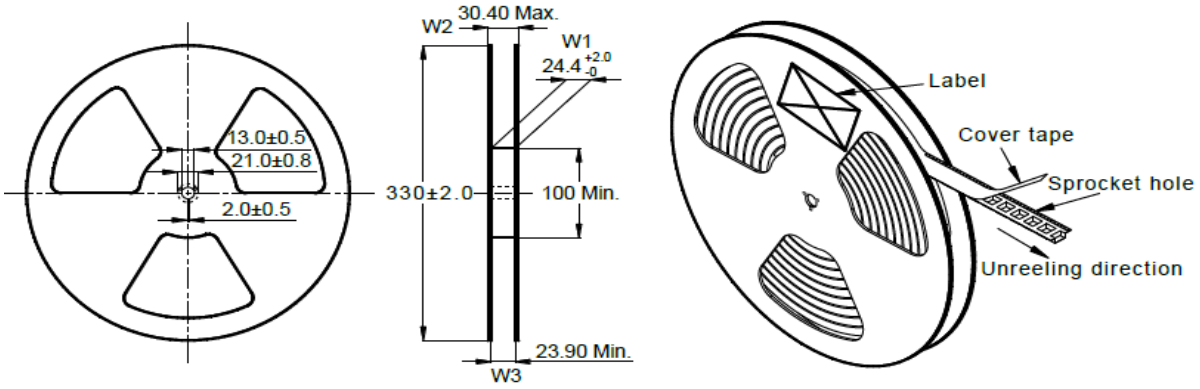


P/N	A(mm)	B(mm)	K(mm)
HCB100709R18 SERIES	7.1±0.1	10.2±0.1	9.2±0.1

7.2 Product Packing in Tape

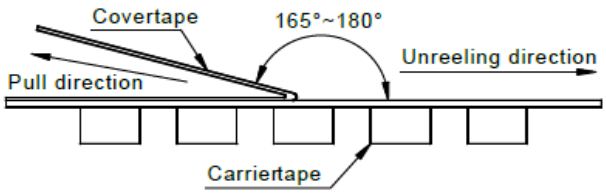


7.3 Reel Dimensions (mm)



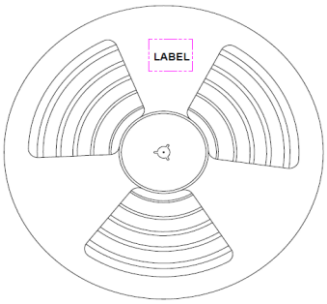
7.4 Cover tape peel off condition

Tape Width	Tape Type	Peel-off Force	Peel Speed
24mm	Heat-sealing	0.1~1.3N	300±10mm/M

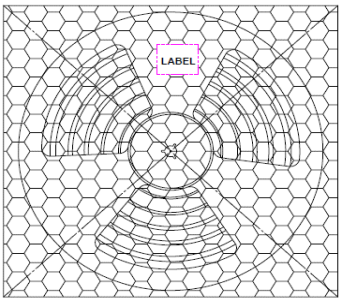


7.5 Packing Quantity

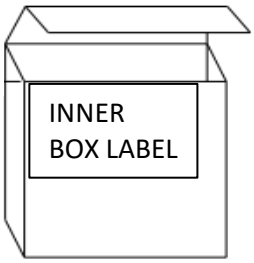
Part Number	Chips/Reel	Chips/Inner Box	Chips/Carton
HCB100709R18 SERIES	400	800 (2 reels/ PE bag / inner box)	2400 (3 inner boxes/ Carton)



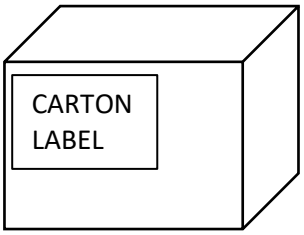
REEL



2 REELS IN A PE BAG

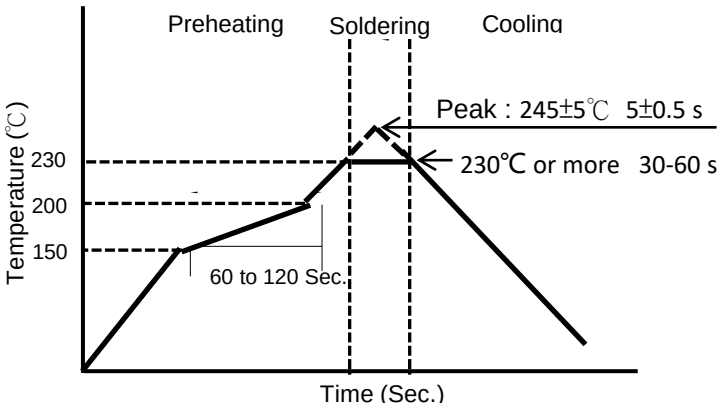


1 PE BAG IN A INNER BOX

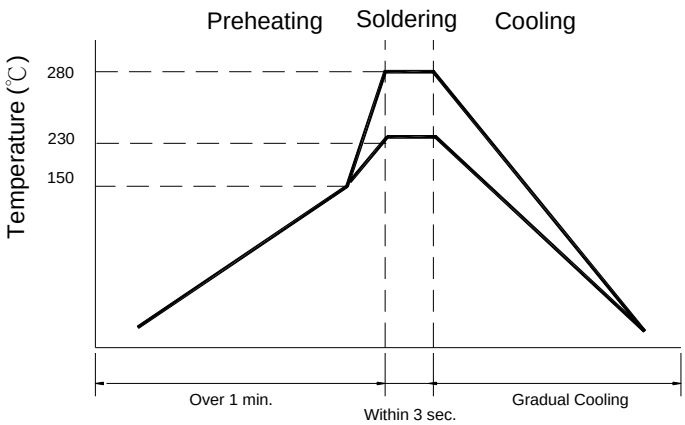


3 INNER BOXES IN A CARTON

8. RECOMMENDED SOLDERING PROFILE

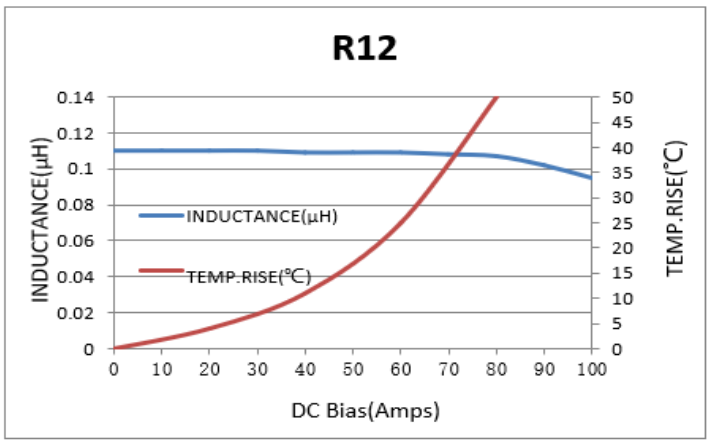


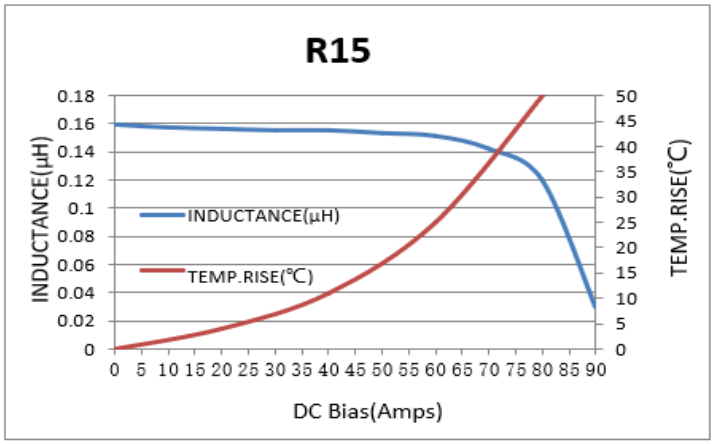
REFLOW SOLDERING

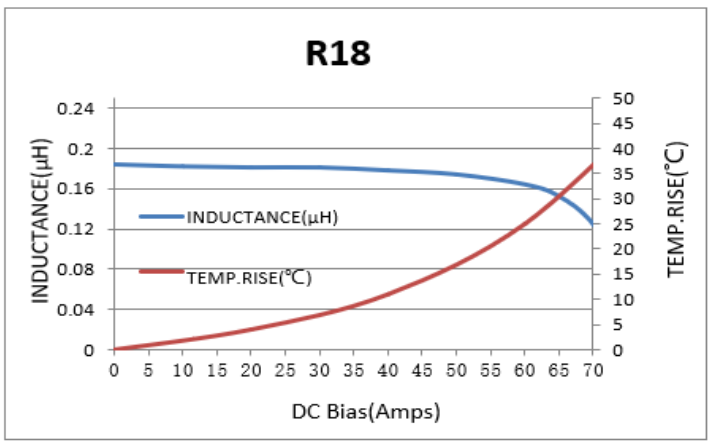


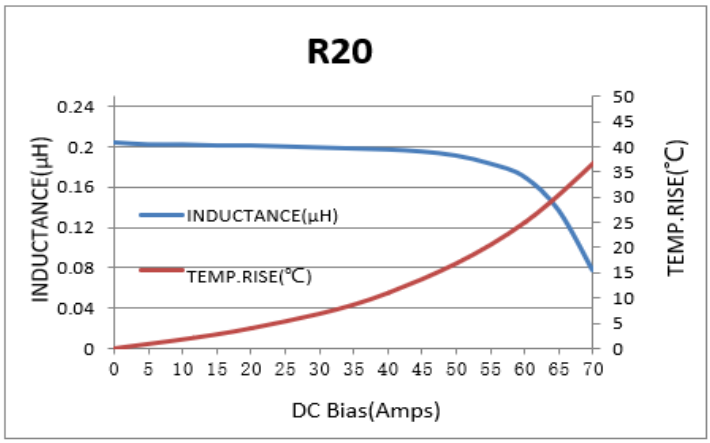
HAND SOLDERING

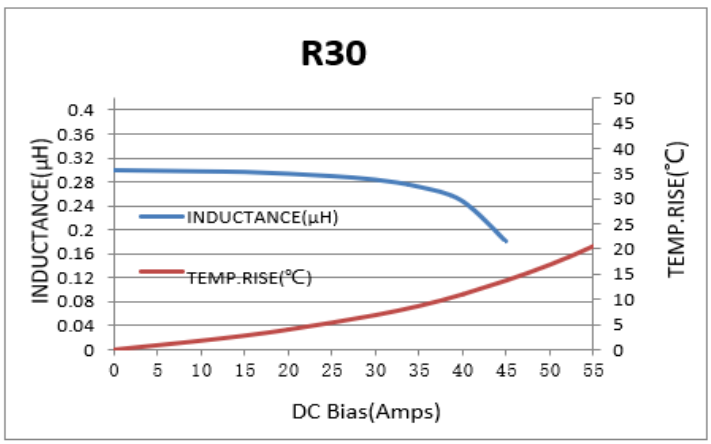
9. INDUCTANCE CHARACTERISTICS

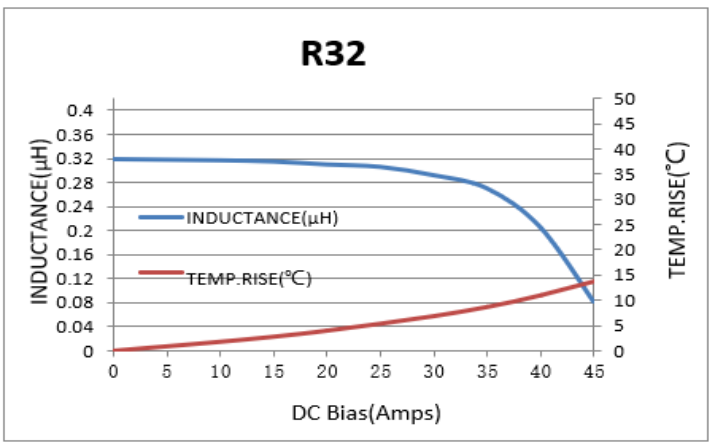


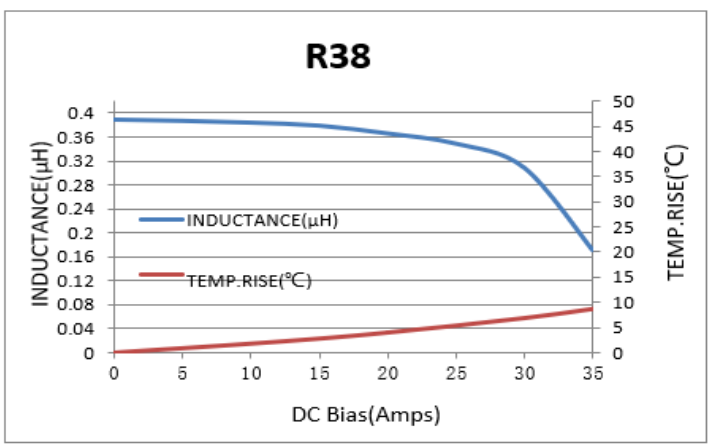


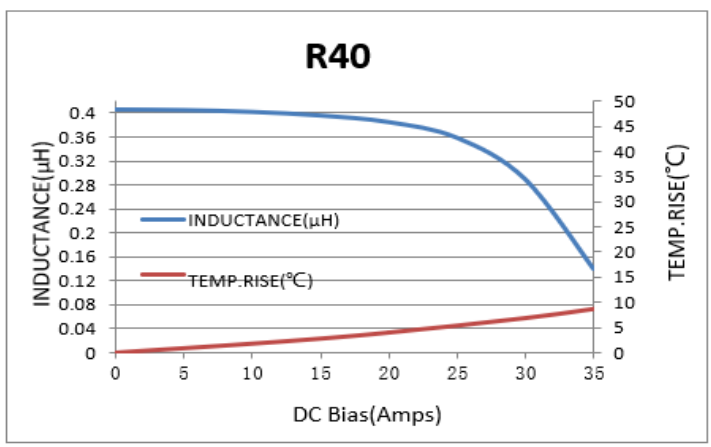




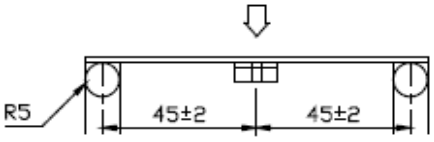






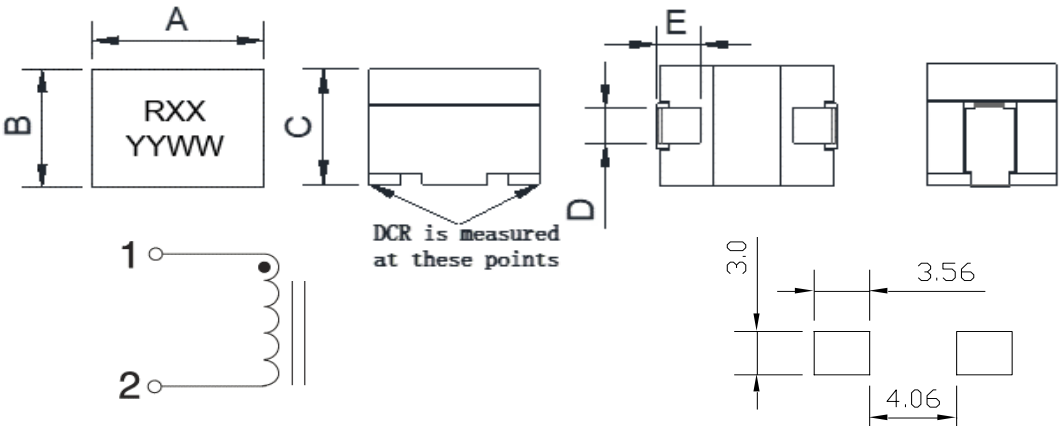


10. RELIABILITY TEST SPECIFICATIONS FOR POWER BEAD INDUCTORS

Item	Specification	Test Conditions
Operating temperature range	-40℃ ~ +125℃	
Storage temperature and humidity range	25±5℃ , 70% RH Max （In Original Packaging: <40°C ; <75%RH）	
Solderability	More than 90% of the terminal electrode should be covered with solder.	Soldering Temperature for Pb Product: 230± 5℃ Soldering Temperature for Pb-free Product: 260±5 ℃ Dip Time: 2~3s
Solder Heat Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	Reflow Temperature: Dip Type:265± 5℃ SMD Type:245± 5℃ Solder Resistance Time: ⩾10s
Heat resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 125±5℃and 2 hour drying under normal condition.
Cold resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in -40±5℃ and 2 hour drying under normal condition.
Thermal shock	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	Firstly, test under -40℃±5℃ and 30±2 minutes, then put 3± 1minutes under room temperature, and test under 125℃±5℃ and 30±2 minutes, finally put 3±1minutes under room temperature, take this as one cycle (each temperature switching must be finished with 3 minutes), after 100 cycles and cooling 1H to room temperature before measuring L
Humidity Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 40±2℃ and 90 to 95% humidity , and 2 hour drying under normal condition.
Vibration Test	Inductance within ±5% of initial value and appearance shall not break.	After vibration for 1hour, In each of three orientations at sweep vibration (10~55~10Hz) with 1.52mm P-P Amplitudes.
Drop Test	Inductance within ±5% of initial value and appearance shall not break.	Drop the packaged products on the concrete floor from 100cm height, one corner and three edges and six faces need to do free dropping twice for each of them
Salt Spray Test	Inductance within ±5% of initial value and appearance shall not break.	Test Temperature is 35℃ and Pressure Barrel Temperature is 47℃. After 24hrs to take it out and wash with clear water and cooling 1H~2H before visual cheking
Substrate Bending	The terminal electrode and the ferrite must not be damaged	The sample shall be soldered onto the printed circuit board as below figure and a 10N load applied unitil the figure in the arrow direction. There shall be direction is made approximately 3mm.(keep time 30 seconds) 

LOW PROFILE, HIGH CURRENT POWER BEAD INDUCTORS

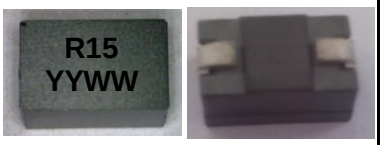
1. SHAPE AND DIMENSIONS



Schematic

UNIT(mm)	
A	10.0 (Max.)
B	8.0 (Max.)
C	8.0 (Max.)
D	2.2±0.25
E	2.5±0.25

Recommended Pad Layout [mm]



2. PRODUCT SPECIFICATIONS

Part Number	OCL[1] (nH) ±15%	Irms[2] (Amps)	Isat[3] (Amps)	Height[4] (max.)	DCR(mΩ) @ +20 °C
HCB100808AR18-R12	120	70	94	8.0	0.18±6%
HCB100808AR18-R15	150	70	79	8.0	0.18±6%
HCB100808AR18-R18	180	70	65	8.0	0.18±6%
HCB100808AR18-R20	200	70	59	8.0	0.18±6%
HCB100808AR18-R30	300	70	38	8.0	0.18±6%
HCB100808AR18-R32	320	70	35	8.0	0.18±6%
HCB100808AR18-R38	380	70	28	8.0	0.18±6%
HCB100808AR18-R40	400	70	26	8.0	0.18±6%

Notes:

1. Open Circuit Inductance (OCL) Test Parameters:
100 kHz, 1 Vrms, 0.0 Adc, +25 °C
2. Irms: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.
3. Isat : Peak current for approximately 20% rolloff @+25 °C
4. Height: Product shape dimensions of height for different P/N

Remark: Measurement Equipment: WK3260B+WK3265B

3. TEMPERATURE RATING

Operating Temperature: -40°C to +125°C (Ambient plus self temperature rise)

Storage Temperature: In Original Packaging, <40°C ; <75%RH

4. PRODUCT IDENTIFICATION

HCB	100808	A	RXX	-	RXX
1	2	3	4		5

1: Series Name
2: Product Dimensions
3: Distinguish Code
4: DCR Value (Ex. R18=0.18mΩ)
5: Inductance value (Ex. R15=150nH)

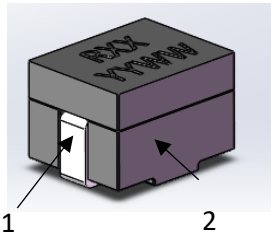
5. PRODUCT MARKING

RXX
YYWW

RXX: Product Inductance Value (Ex. R15=150nH)

YYWW: Manufactured Datecode (Ex. 2105=2021Year, 05 Week)

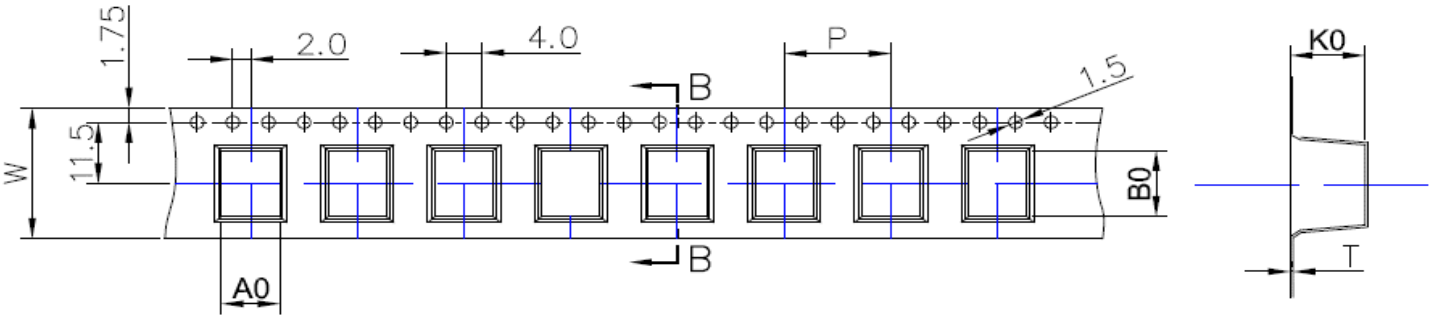
6. CONSTRUCTION AND MATERIAL LIST



No.	Part	Material
1	Clip	C1100
2	Core	Ferrite

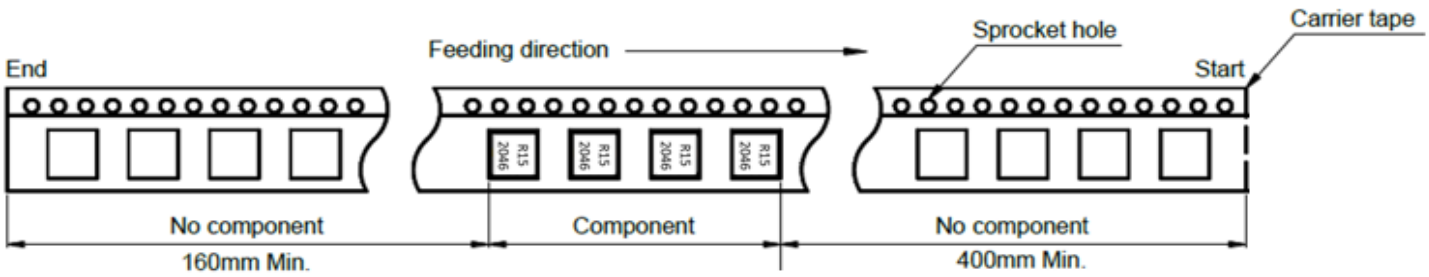
7.PACKAGING INFORMATION

7.1 Tape Dimensions (mm)

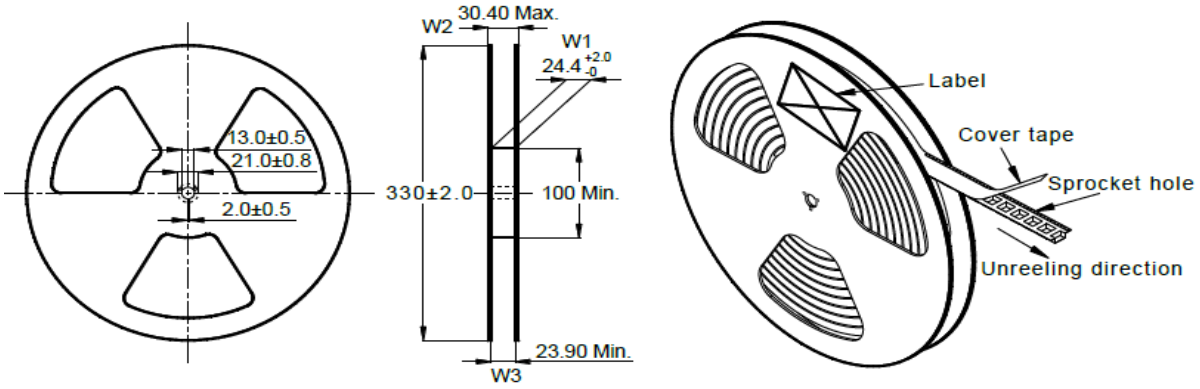


P/N	A0(mm)	B0(mm)	K0(mm)	P(mm)	T(mm)	W(mm)
HCB100808AR18 SERIES	8.2±0.1	10.2±0.1	8.2±0.1	12.0±0.1	0.4±0.05	24.0±0.3

7.2 Product Packing in Tape

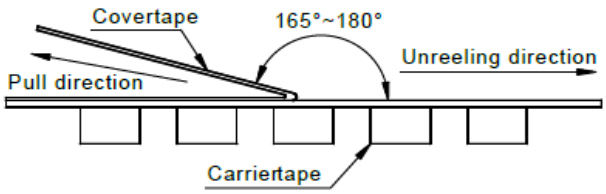


7.3 Reel Dimensions (mm)



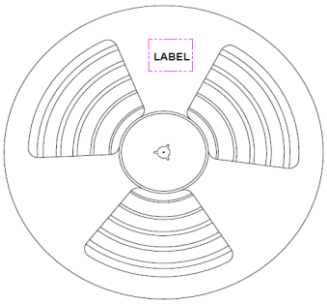
7.4 Cover tape peel off condition

Tape Width	Tape Type	Peel-off Force	Peel Speed
24mm	Heat-sealing	0.1~1.3N	300±10mm/M

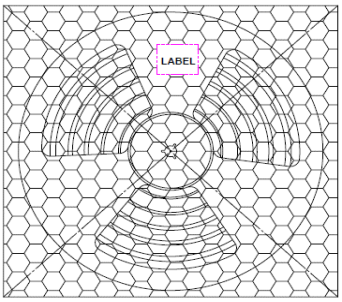


7.5 Packing Quantity

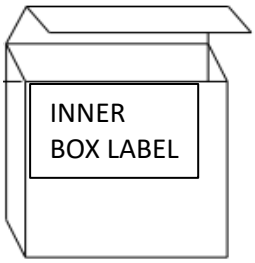
Part Number	Chips/Reel	Chips/Inner Box	Chips/Carton
HCB100808AR18 SERIES	600	1200 (2 reels/ PE bag / inner box)	3600 (3 inner boxes/ Carton)



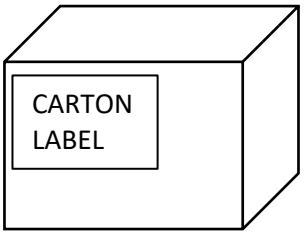
REEL



2 REELS IN A PE BAG

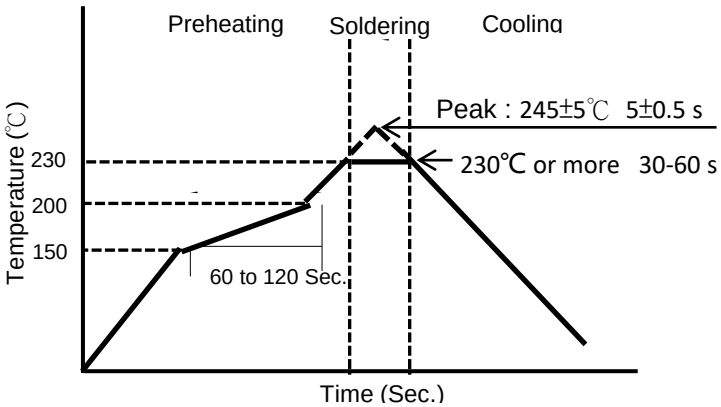


1 PE BAG IN A INNER BOX

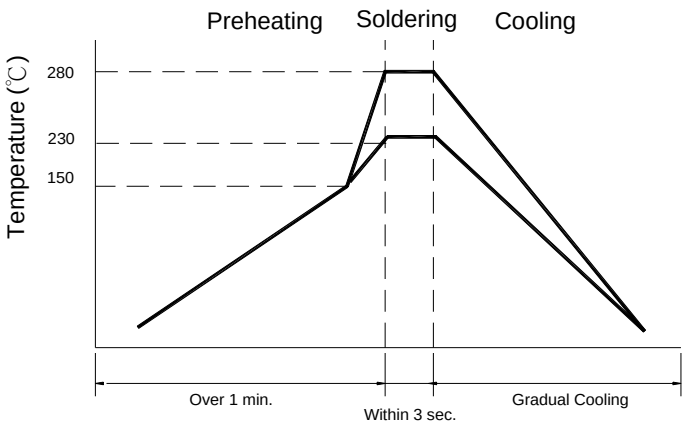


3 INNER BOXES IN A CARTON

8. RECOMMENDED SOLDERING PROFILE

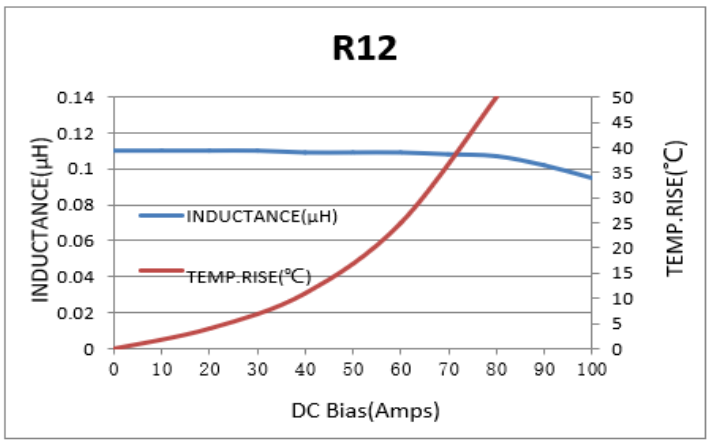


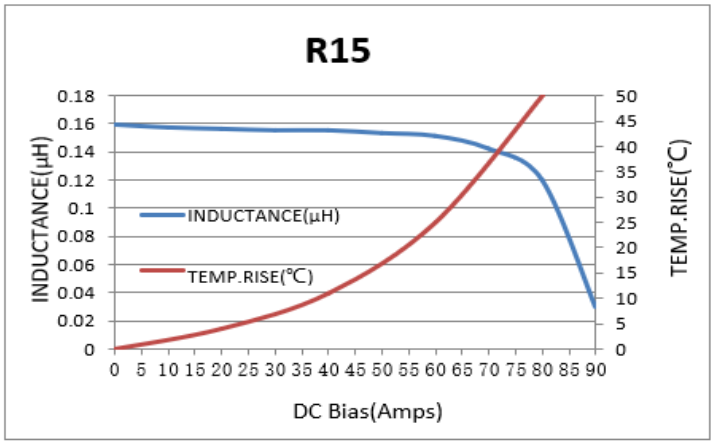
REFLOW SOLDERING

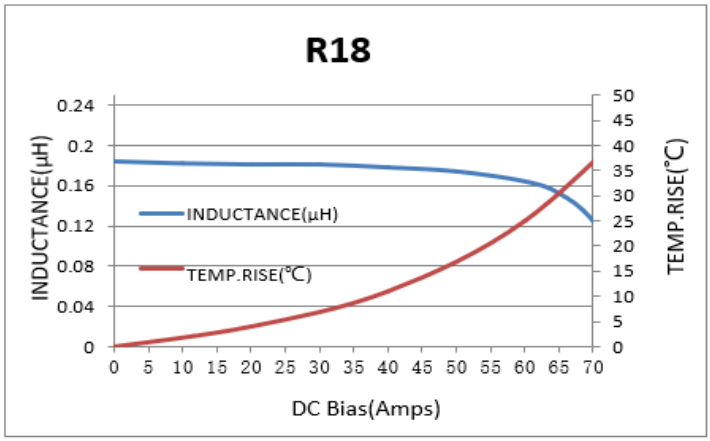


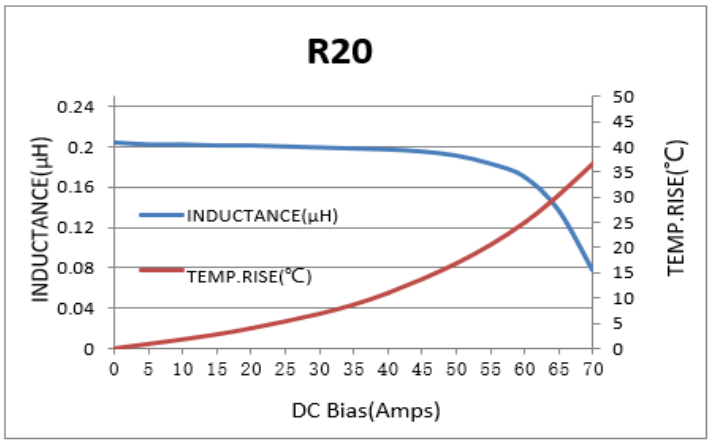
HAND SOLDERING

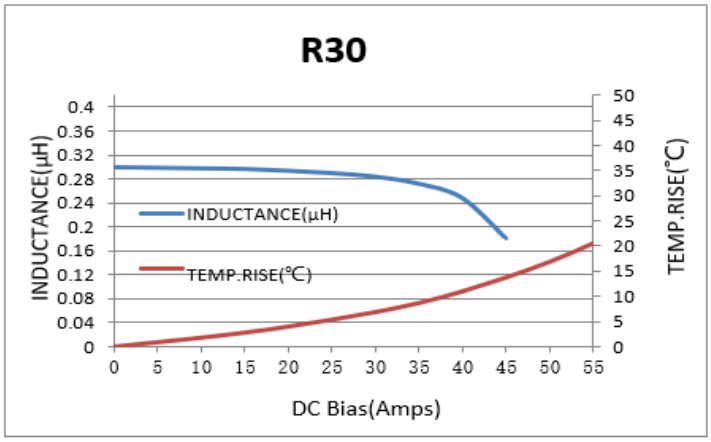
9. INDUCTANCE CHARACTERISTICS

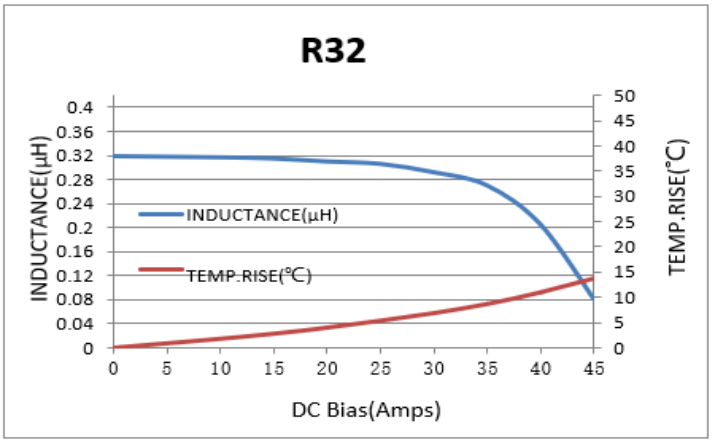


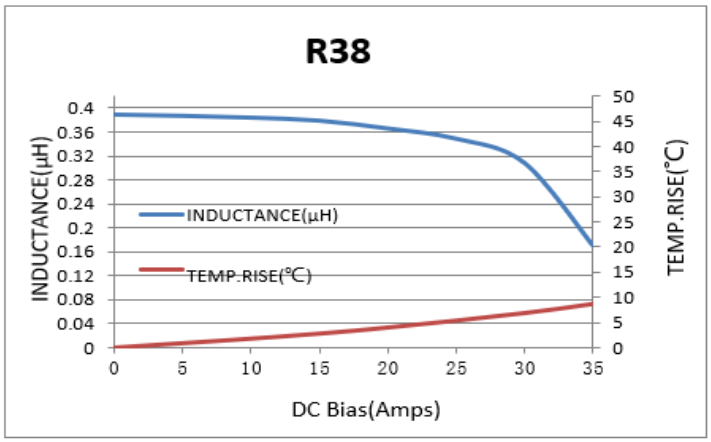


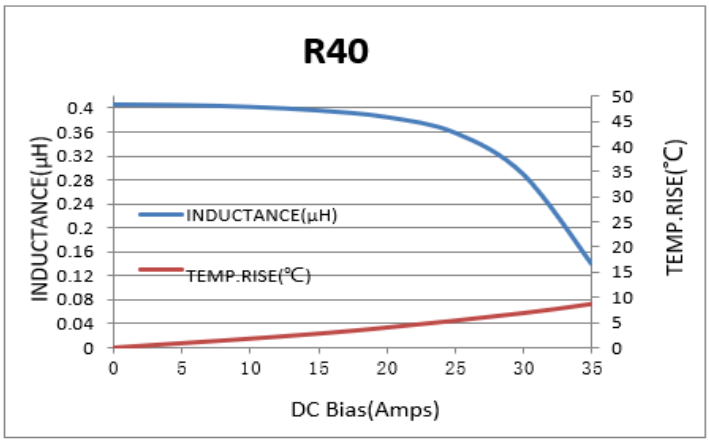




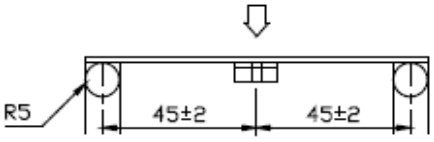




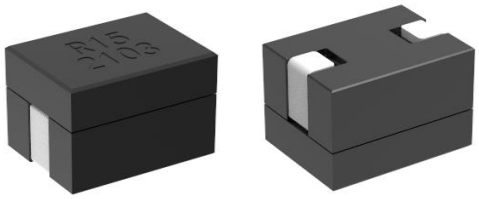




10. RELIABILITY TEST SPECIFICATIONS FOR POWER BEAD INDUCTORS

Item	Specification	Test Conditions
Operating temperature range	-40℃ ~ +125℃	
Storage temperature and humidity range	25±5℃ , 70% RH Max （In Original Packaging: <40°C ; <75%RH）	
Solderability	More than 90% of the terminal electrode should be covered with solder.	Soldering Temperature for Pb Product: 230± 5℃ Soldering Temperature for Pb-free Product: 260±5 ℃ Dip Time: 2~3s
Solder Heat Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	Reflow Temperature: Dip Type:265± 5℃ SMD Type:245± 5℃ Solder Resistance Time: ⩾10s
Heat resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 125±5℃and 2 hour drying under normal condition.
Cold resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in -40±5℃ and 2 hour drying under normal condition.
Thermal shock	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	Firstly, test under -40℃±5℃ and 30±2 minutes, then put 3± 1minutes under room temperature, and test under 125℃±5℃ and 30±2 minutes, finally put 3±1minutes under room temperature, take this as one cycle (each temperature switching must be finished with 3 minutes), after 100 cycles and cooling 1H to room temperature before measuring L
Humidity Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 40±2℃ and 90 to 95% humidity , and 2 hour drying under normal condition.
Vibration Test	Inductance within ±5% of initial value and appearance shall not break.	After vibration for 1hour, In each of three orientations at sweep vibration (10~55~10Hz) with 1.52mm P-P Amplitudes.
Drop Test	Inductance within ±5% of initial value and appearance shall not break.	Drop the packaged products on the concrete floor from 100cm height, one corner and three edges and six faces need to do free dropping twice for each of them
Salt Spray Test	Inductance within ±5% of initial value and appearance shall not break.	Test Temperature is 35℃ and Pressure Barrel Temperature is 47℃. After 24hrs to take it out and wash with clear water and cooling 1H~2H before visual cheking
Substrate Bending	The terminal electrode and the ferrite must not be damaged	The sample shall be soldered onto the printed circuit board as below figure and a 10N load applied unitil the figure in the arrow direction. There shall be direction is made approximately 3mm.(keep time 30 seconds) 

Low Profile, High Current Power Inductors



Features

- SMD inductors
- High current and lower DCR
- Ferrite core material
- Operating temperature range: –40 to +125°C (including self-temperature rise)
- Shielded construction

Environmental Data

- Storage Conditions (In Original Packaging): <40°C ; <75%RH
- Operating temperature range: -40°C to +125°C (Ambient plus self temperature rise)
- Solder reflow temperature: J-STD-020D compliant

Applications

- Servers
- Multi-phase and Vcore regulators
- Voltage Regulator Modules (VRMs)
  - Server and desktop
  - Central processing unit (CPU)
  - Graphics processing unit (GPU)
  - Specific integrated circuit (ASIC)
  - High power density
- Notebook regulators
- Battery power systems
- Graphics cards

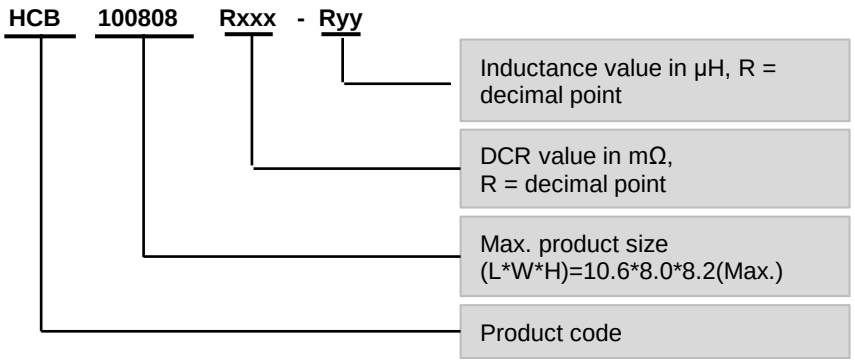
Product Specifications

Part Number[5]	OCL[1] (nH) ±15%	Irms[2] (Amps)	Isat[3] (Amps)	Height[4] (max.)	DCR(mΩ) typical @ +20 °C
HCB100808R18-R10	100	74	105	8.2	0.18
HCB100808R18-R12	120	74	105	8.1	0.18
HCB100808R18-R15	150	74	88	8.1	0.18
HCB100808R18-R17	170	74	80	8.1	0.18
HCB100808R18-R22	220	74	55	8.0	0.18
HCB100808R18-R26	260	74	49	8.0	0.18
HCB100808R18-R32	320	74	45	8.0	0.18

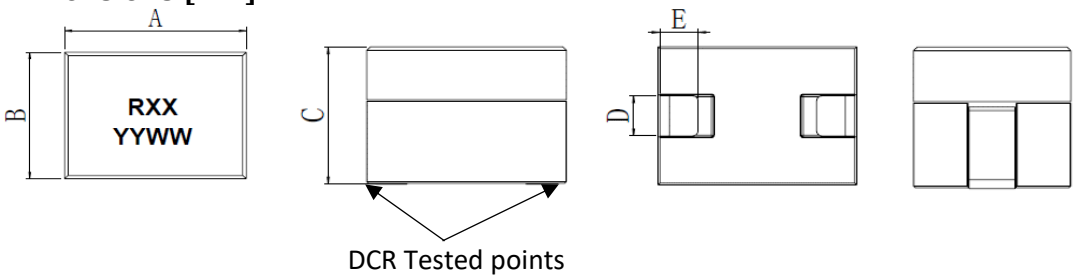
Notes:

1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 0.1 Vrms, 0.0 Adc, +25 °C
2. Irms: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.
3. Isat : Peak current for approximately 20% rolloff @+25 °C
4. Height: Product shape dimensions of height for different P/N
Remark: Measurement Equipment: WK3260B+WK3265B

5. Part Number Definition:



Dimensions:[mm]

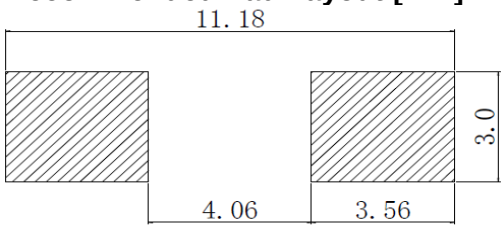


TYPE	SIZE
A	10.6 (Max.)
B	8.0 (Max.)
C	See Height column in table of Product Specifications
D	2.25 (Typ.)
E	2.2 (Typ.)

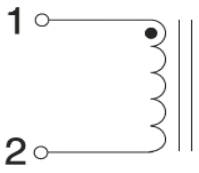
Product Marking:

RXX	Product Inductance Value(Ex. R15=150nH)
YYWW	Manufactured Datecode (Ex. 2105=2021Year ; 05 Week)

Recommended Pad Layout:[mm]

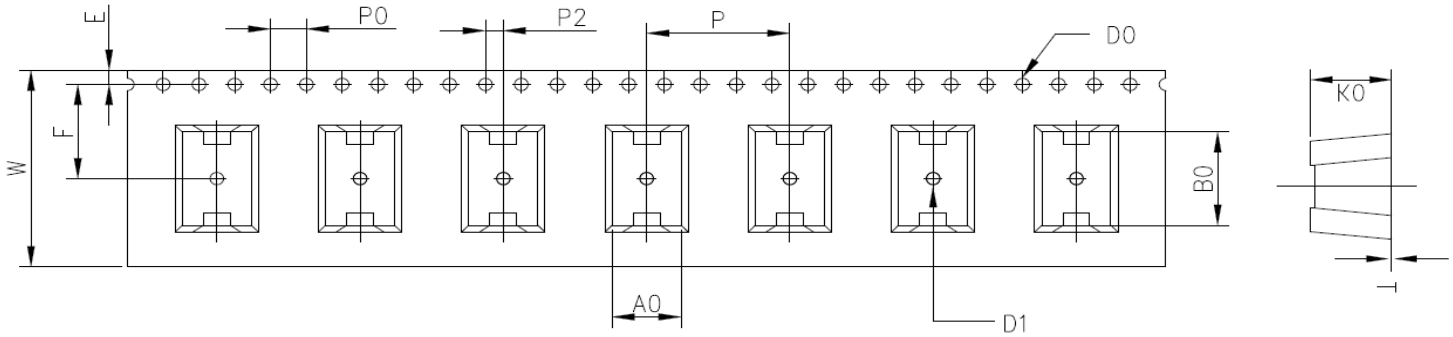


Schematic:

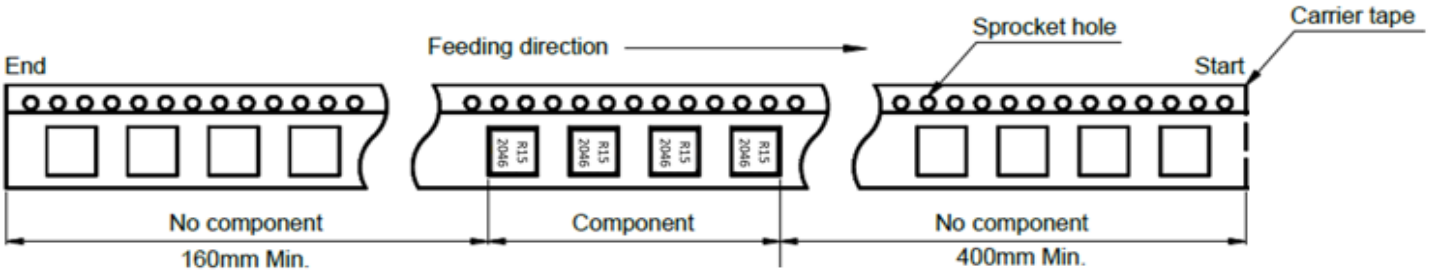


Packaging Information:[mm]

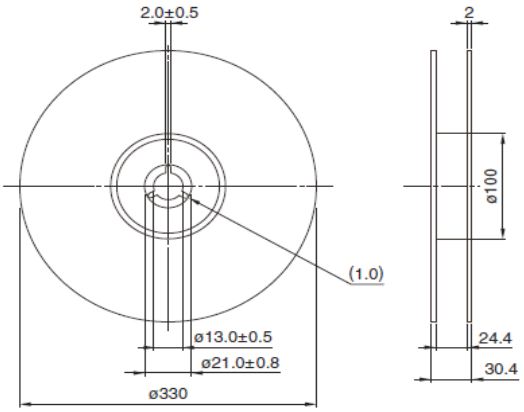
Tape Dimensions



Material	A0(±0.1)	B0(±0.1)	W (±0.3)	T (±0.05)	K0(±0.1)	P(±0.1)	F(±0.1)	E(±0.1)	D0(±0.1)	P0(±0.1)	P2(±0.1)	D1(±0.1)
Polystyrene	8.40	12.20	24.00	0.35	8.50	16.00	11.50	1.75	1.50	4.00	2.00	1.50

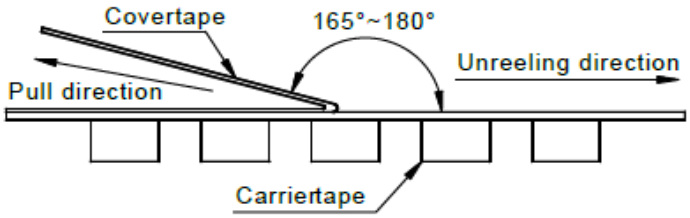


Reel Dimensions



Cover tape peel off condition

Tape Width	Peel-off Force	Peel Speed
24mm	0.1~1.3N	300±10mm/M



Packing Quantity

Part Number	Quantity (pcs/reel)
HCB100808R18 SERIES	400

Recommended Reflow Profile:

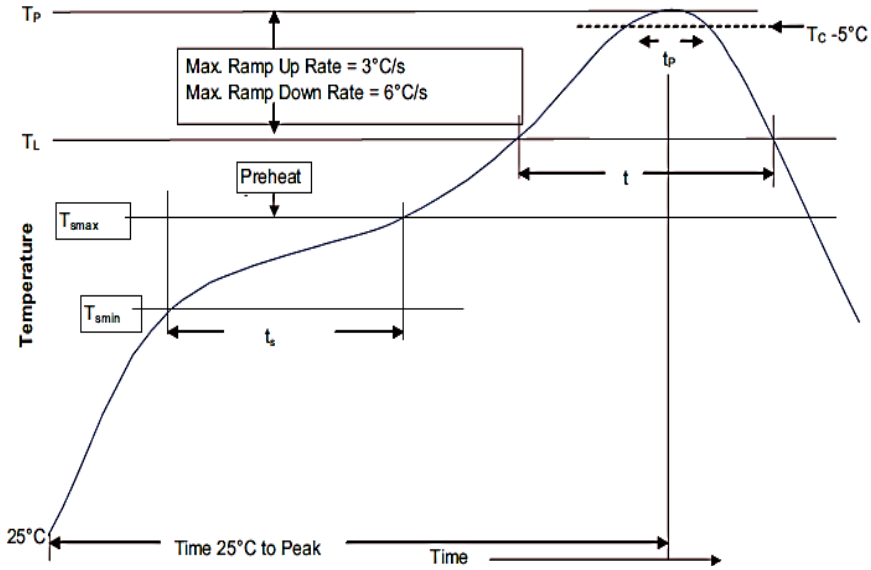


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

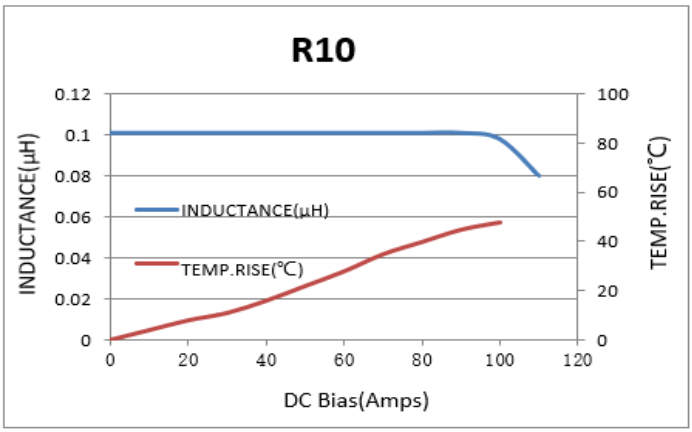
Table 2 - Lead (Pb) Free Solder (T_C)

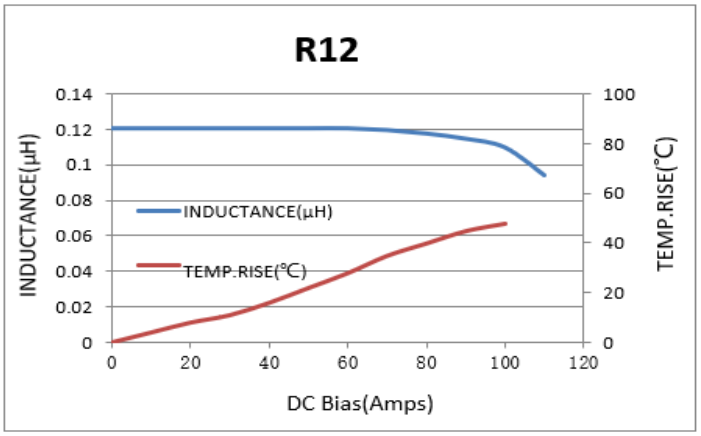
Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

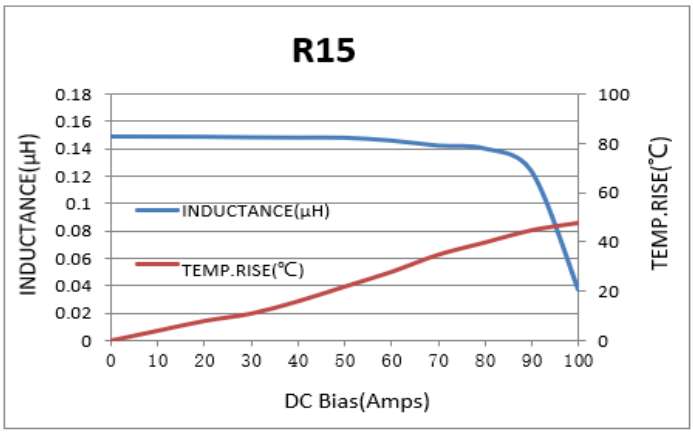
Profile Feature		Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{smin})	100°C	150°C
	• Temperature max. (T_{smax})	150°C	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 Seconds	60-120 Seconds
Average ramp up rate T_{smax} to T_p		3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 60-150 Seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)** within 5 °C of the specified classification temperature (T_C)		20 Seconds**	30 Seconds**
Average ramp-down rate (T_p to T_{smax})		6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature		6 Minutes Max.	8 Minutes Max.

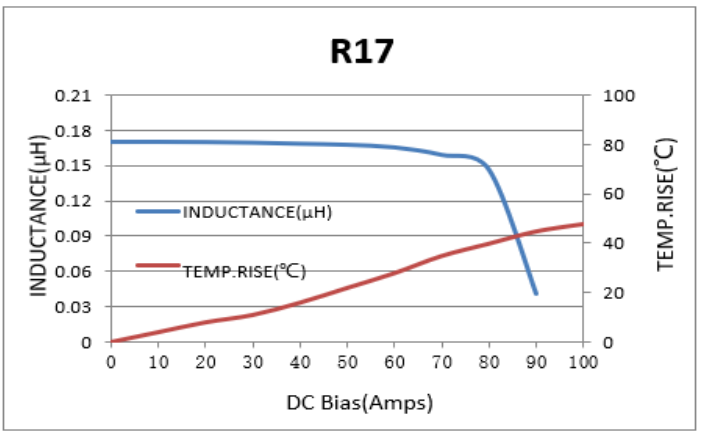
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.
** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

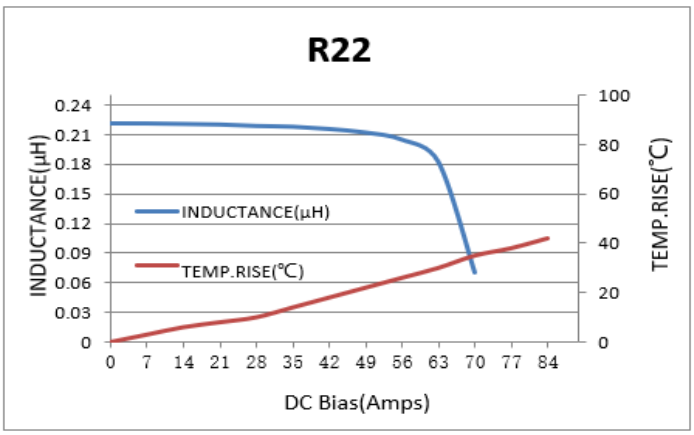
Inductance Characteristics:

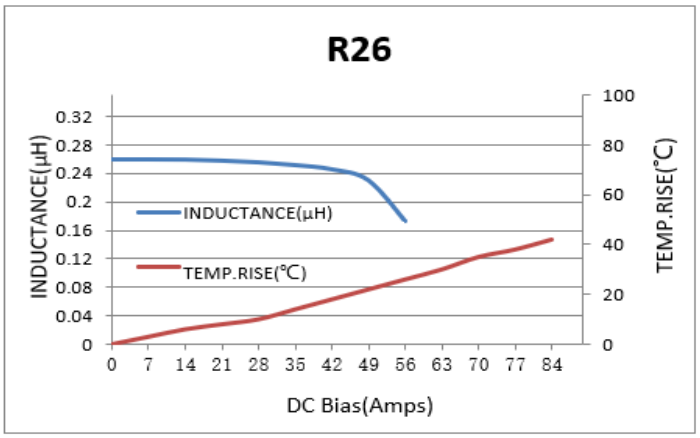


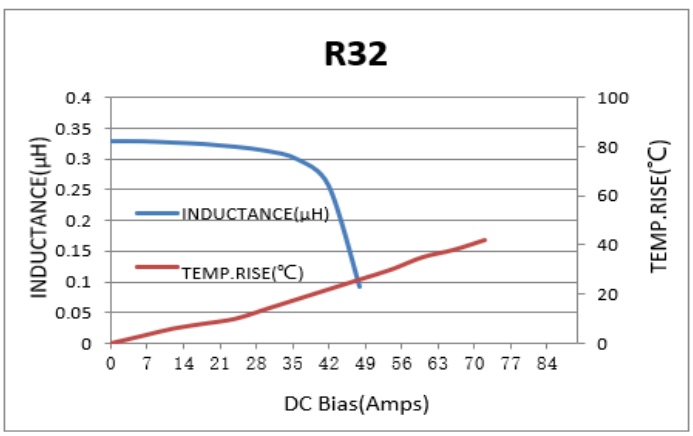












Low Profile, High Current Power Inductors

Features

- SMD inductors
- High current and lower DCR
- Ferrite core material
- Operating temperature range: –40 to +125°C (including self-temperature rise)
- Shielded construction

Environmental Data

- Storage Conditions (In Original Packaging): <40°C ; <75%RH
- Operating temperature range: -40°C to +125°C (Ambient plus self temperature rise)
- Solder reflow temperature: J-STD-020D compliant

Applications

- Servers
- Multi-phase and Vcore regulators
- Voltage Regulator Modules (VRMs)
  - Server and desktop
  - Central processing unit (CPU)
  - Graphics processing unit (GPU)
  - Specific integrated circuit (ASIC)
  - High power density
- Notebook regulators
- Battery power systems
- Graphics cards

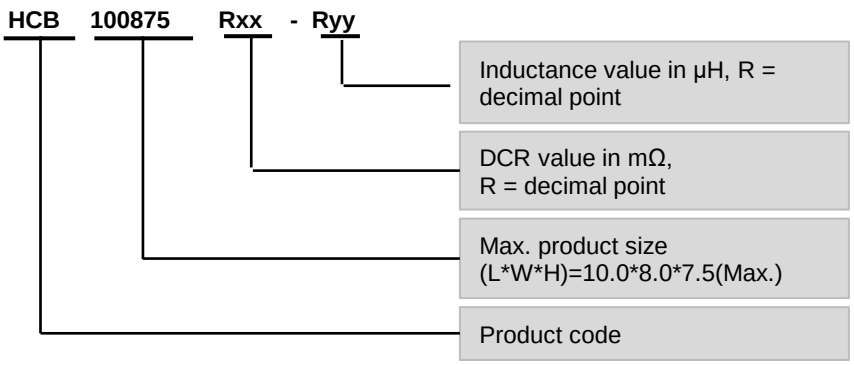
Product Specifications

Part Number[5]	OCL[1] (nH) ±15%	Irms[2] (Amps)	Isat[3] (Amps)	Height (max.)	DCR(mΩ) typical @ +20 °C
HCB100875R29-R10	100	56	80	7.5	0.29
HCB100875R29-R12	120	56	80	7.5	0.29
HCB100875R29-R15	150	56	73	7.5	0.29
HCB100875R29-R18	180	56	65	7.5	0.29
HCB100875R29-R20	200	56	60	7.5	0.29
HCB100875R29-R24	240	56	50	7.5	0.29
HCB100875R29-R27	270	56	46	7.5	0.29
HCB100875R29-R32	320	56	35	7.5	0.29
HCB100875R29-R34	340	56	34	7.5	0.29
HCB100875R29-R37	370	56	30	7.5	0.29

Notes:

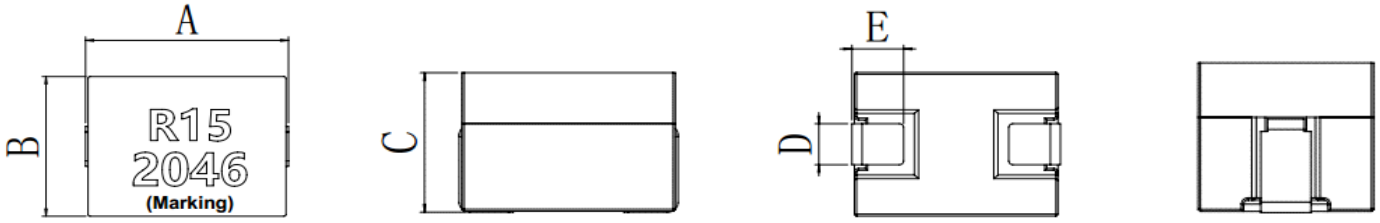
1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 0.1 Vrms,0.0 Adc, +25 °C
2. Irms: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.
3. Isat : Peak current for approximately 20% rolloff @+25 °C
4. Measurement Equipment: WK3260B+WK3265B

5. Part Number Definition:



Technical Data HCB100875R29 Series

Dimensions:[mm]



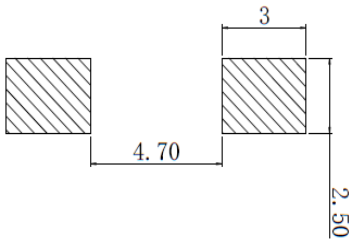
Dimensions

Type	Size
A	10.2±0.2
B	8.0 max.
C	7.5 max.
D	2.2±0.2
E	2.54±0.5

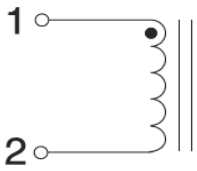
Product Marking:

Part Code	Ryy
Date Code	YYWW

Recommended Pad Layout:[mm]

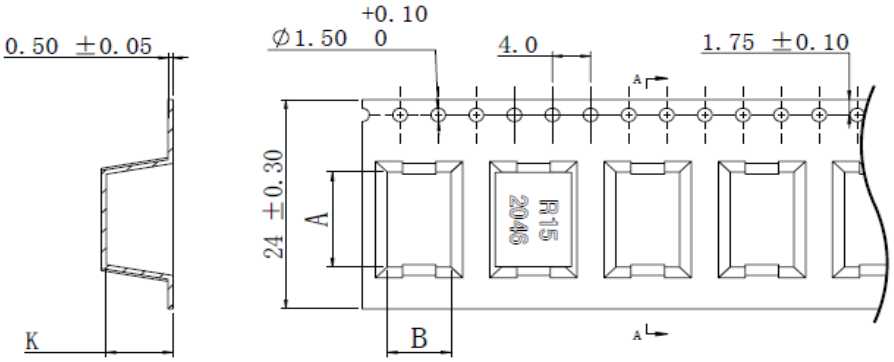


Schematic:

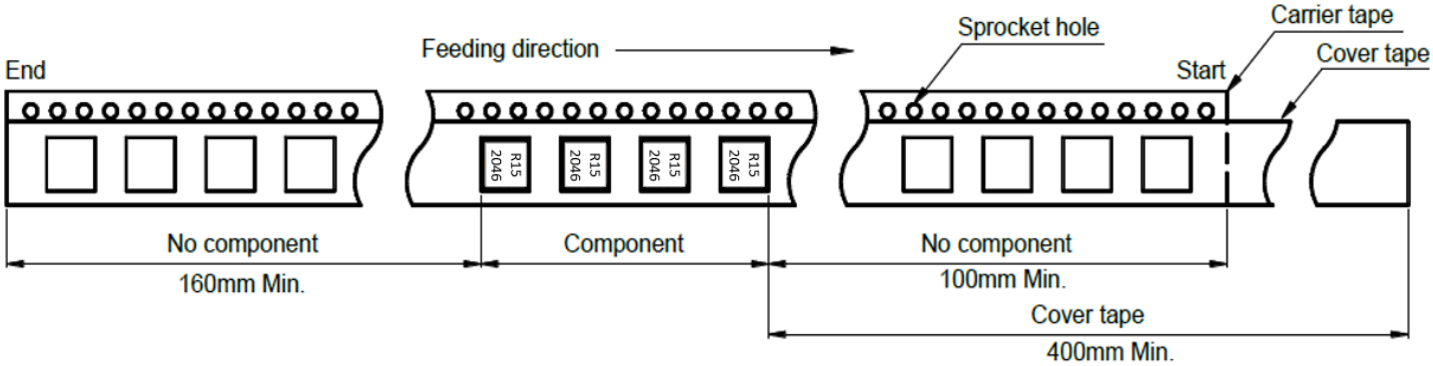


Packaging Information:[mm]

Tape Dimensions

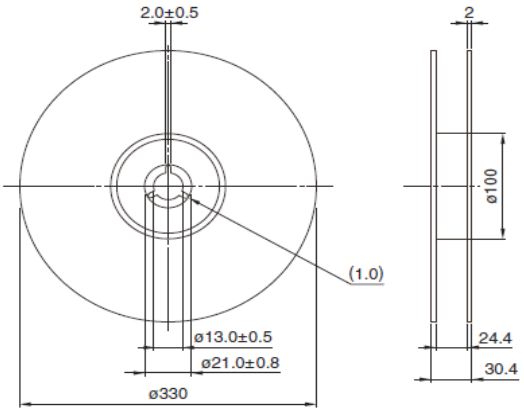


Part Number	A	B	K
HCB100875R29 Type	10.8±0.1	8.0±0.1	7.7±0.1



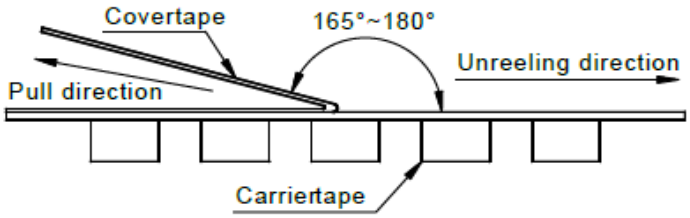
NO.8,YanTa Northern road,xi`anCity Shaanxi pro.china TEL：+86-29-87851916 FAX：+86-29-87851840 E-mail：sales@shinhom.com.cn

Reel Dimensions



Cover tape peel off condition

Tape Width	Peel-off Force	Peel Speed
16/24mm	0.1~1.3N	300±10mm/M



Packing Quantity

Part Number	Quantity (pcs/reel)
HCB100875R29 Type	700

Recommended Reflow Profile:

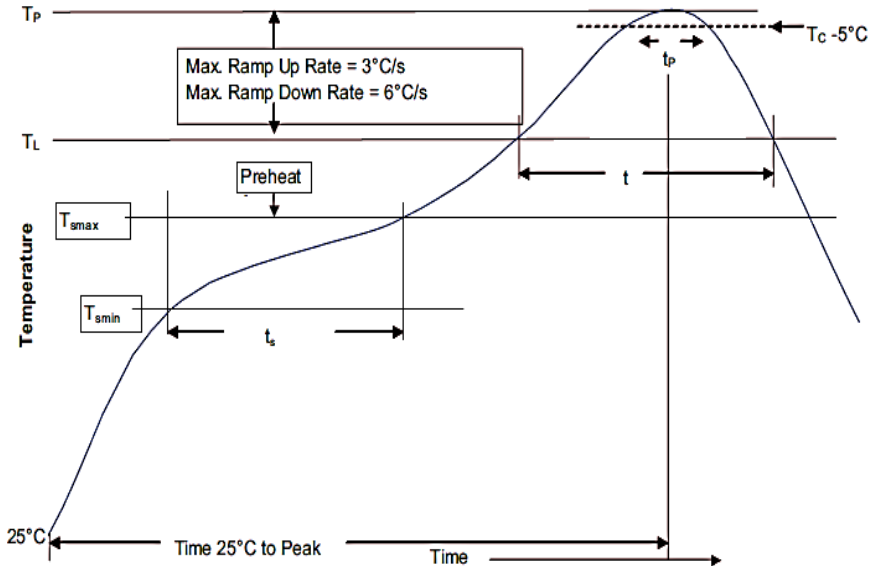


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

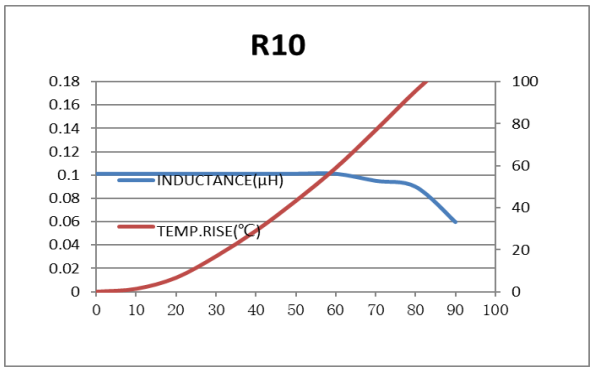
Table 2 - Lead (Pb) Free Solder (T_C)

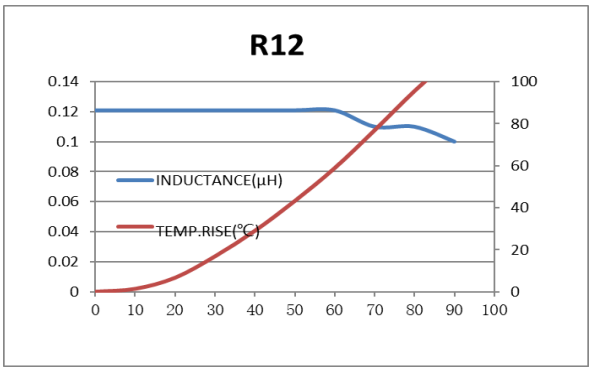
Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

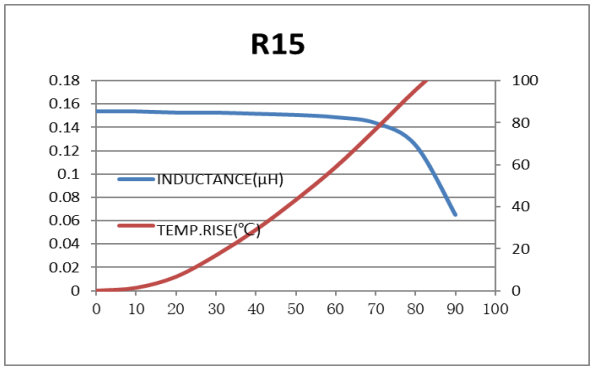
Profile Feature		Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{smin})	100°C	150°C
	• Temperature max. (T_{smax})	150°C	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 Seconds	60-120 Seconds
Average ramp up rate T_{smax} to T_p		3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 60-150 Seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)** within 5 °C of the specified classification temperature (T_C)		20 Seconds**	30 Seconds**
Average ramp-down rate (T_p to T_{smax})		6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature		6 Minutes Max.	8 Minutes Max.

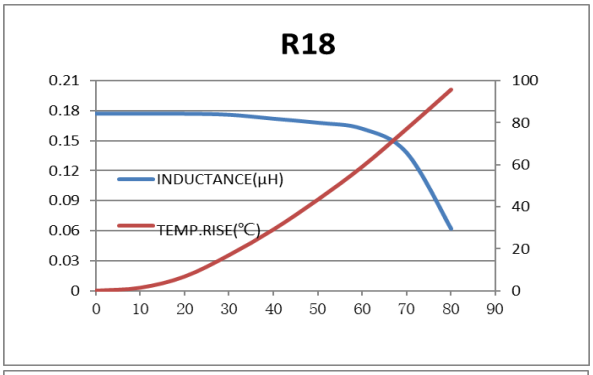
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.
** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

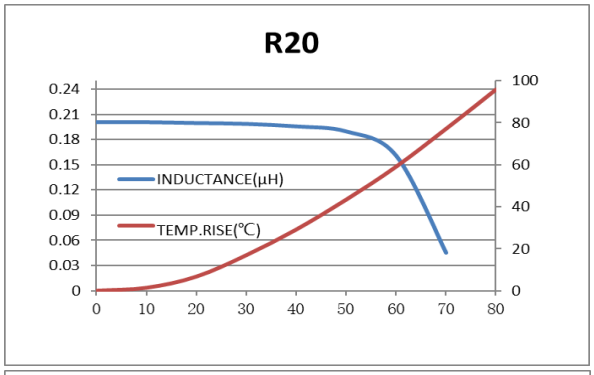
Inductance Characteristics:

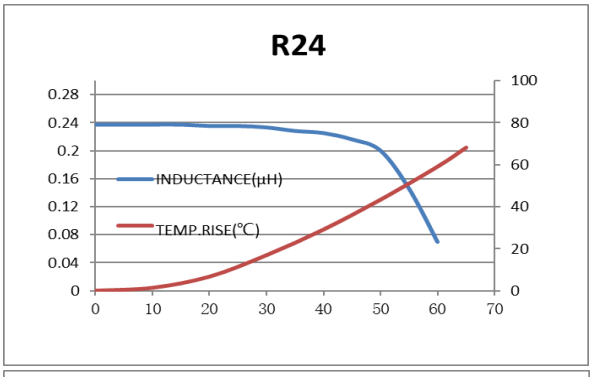


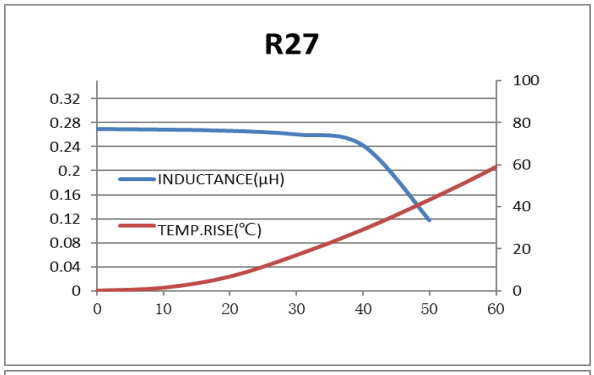


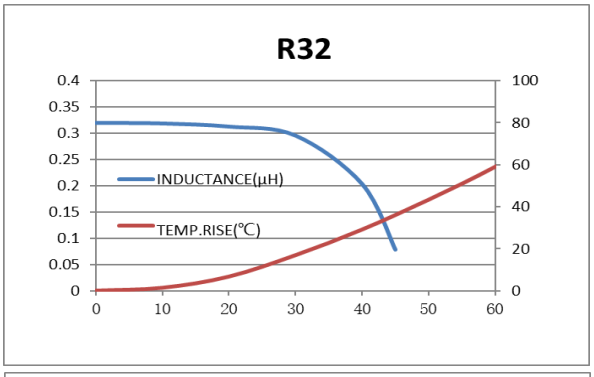


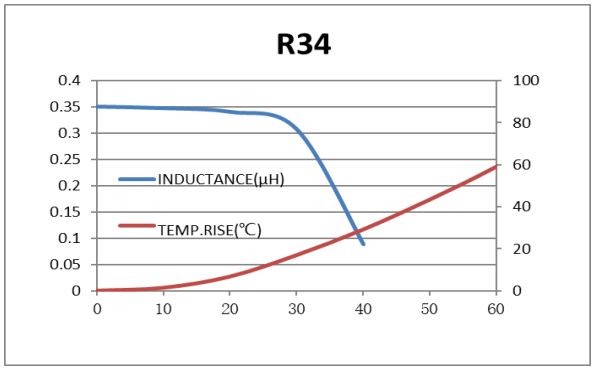


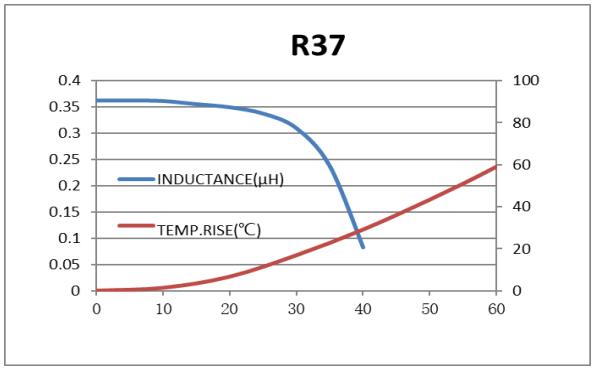




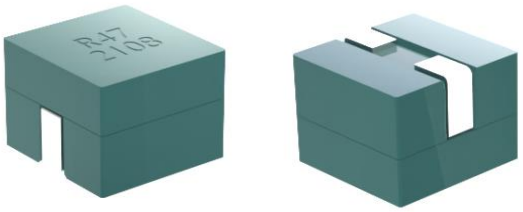








Low Profile, High Current Power Inductors



Features

- SMD inductors
- High current and lower DCR
- Ferrite core material
- Operating temperature range: –40 to +125°C (including self-temperature rise)
- Shielded construction

Environmental Data

- Storage Conditions (In Original Packaging): <40°C ; <75%RH
- Operating temperature range: -40°C to +125°C (Ambient plus self temperature rise)
- Solder reflow temperature: J-STD-020D compliant

Applications

- Servers
- Multi-phase and Vcore regulators
- Voltage Regulator Modules (VRMs)
  - Server and desktop
  - Central processing unit (CPU)
  - Graphics processing unit (GPU)
  - Specific integrated circuit (ASIC)
  - High power density
- Notebook regulators
- Battery power systems
- Graphics cards

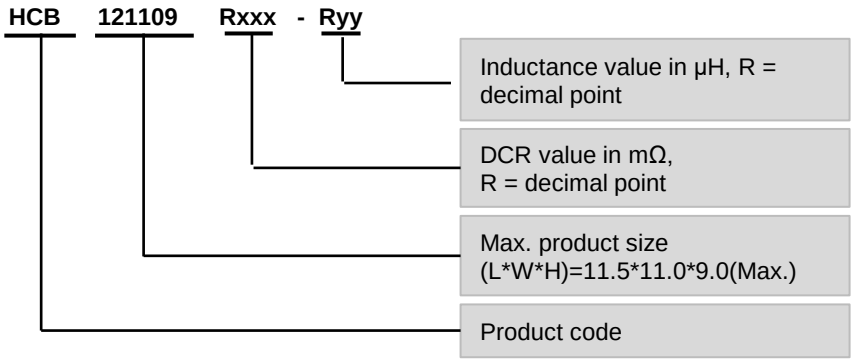
Product Specifications

Part Number[5]	OCL[1] (nH) ±15%	Irms[2] (Amps)	Isat[3] (Amps)	Height (max.)	DCR(mΩ) typical @ +20 °C
HCB121109R30-R15	150	55	105	9.0	0.30
HCB121109R30-R18	180	55	90	9.0	0.30
HCB121109R30-R22	220	55	78	9.0	0.30
HCB121109R30-R25	250	55	68	9.0	0.30
HCB121109R30-R29	290	55	55	9.0	0.30
HCB121109R30-R33	330	55	54	9.0	0.30
HCB121109R30-R38	380	55	45	9.0	0.30
HCB121109R30-R47	470	55	38	9.0	0.30
HCB121109R30-R50	500	55	32	9.0	0.30

Notes:

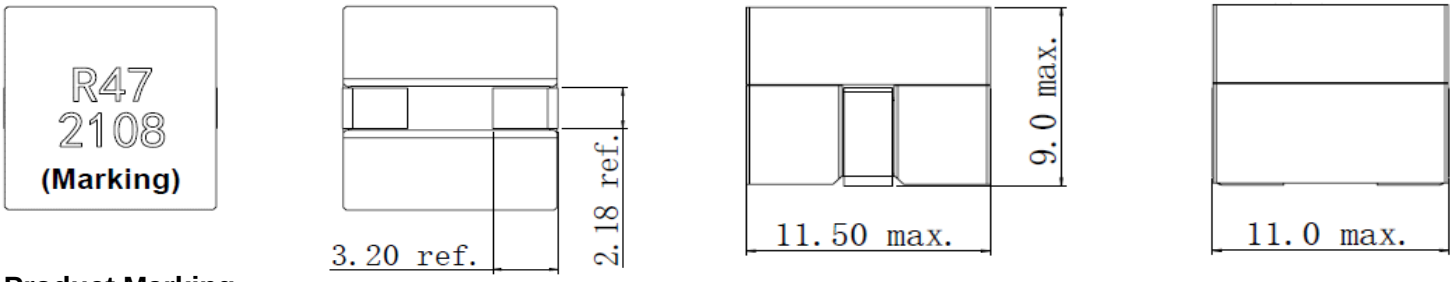
1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 1 Vrms,0.0 Adc, +25 °C
2. Irms: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.
3. Isat : Peak current for approximately 20% rolloff @+25 °C
4. Measurement Equipment: WK3260B+WK3265B

5. Part Number Definition:



Technical Data HCB121109R30 Series

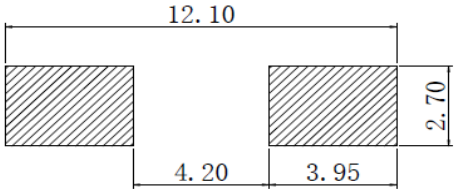
Dimensions:[mm]



Product Marking:

Part Code	Ryy
Date Code	YYWW

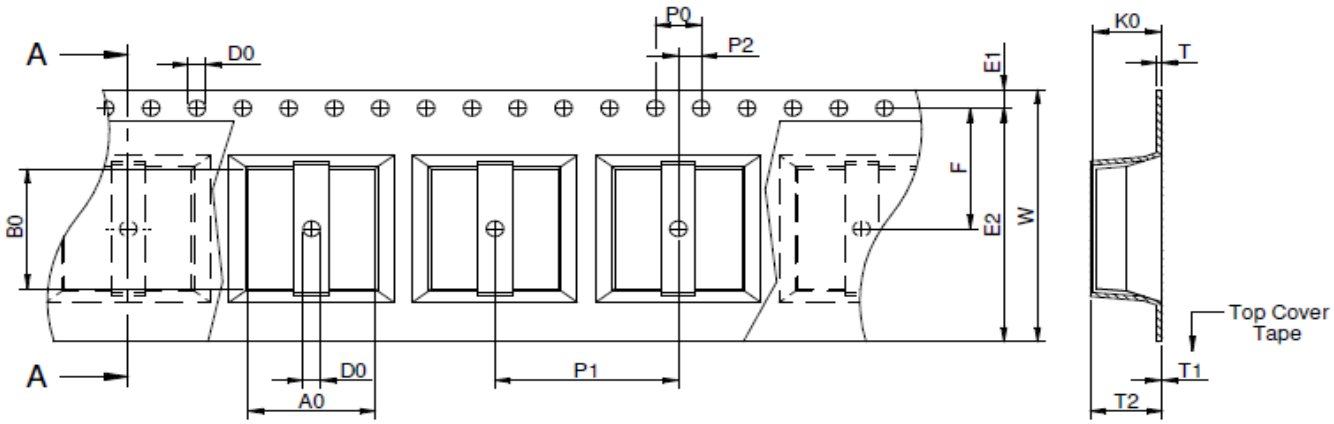
Recommended Pad Layout:[mm]



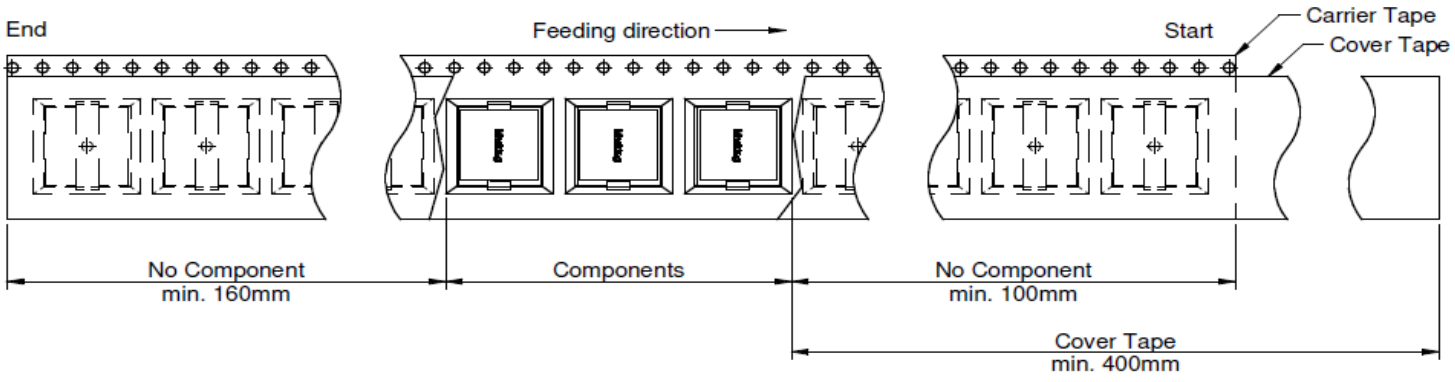
Schematic:

Packaging Information:[mm]

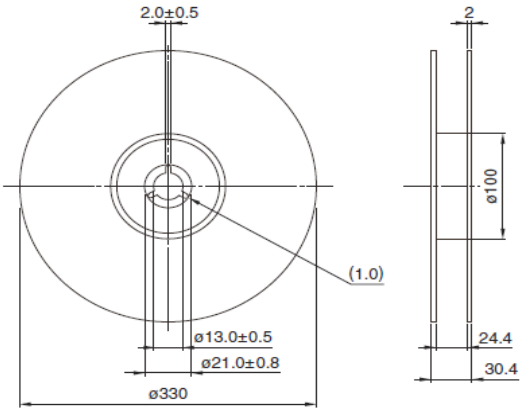
Tape Dimensions



Material	A0(typ.)	B0(typ.)	W (±0.3)	T (ref.)	T1 (max.)	T2 (typ.)	P0 (±0.1)	P1 (±0.1)	P2 (±0.1)	D0 (+0.1/-0.0)	E1 (±0.1)	E2 (min.)	F (±0.1)
Polystyrene	11.60	12.00	24.00	0.40	0.10	9.70	4.00	20.00	2.00	1.50	1.75	22.25	11.50

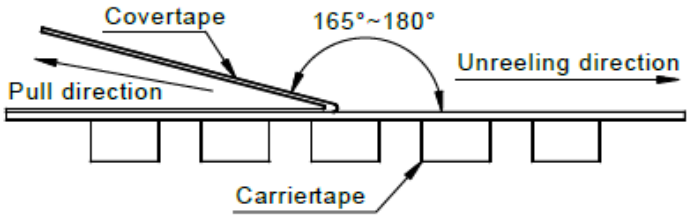


Reel Dimensions



Cover tape peel off condition

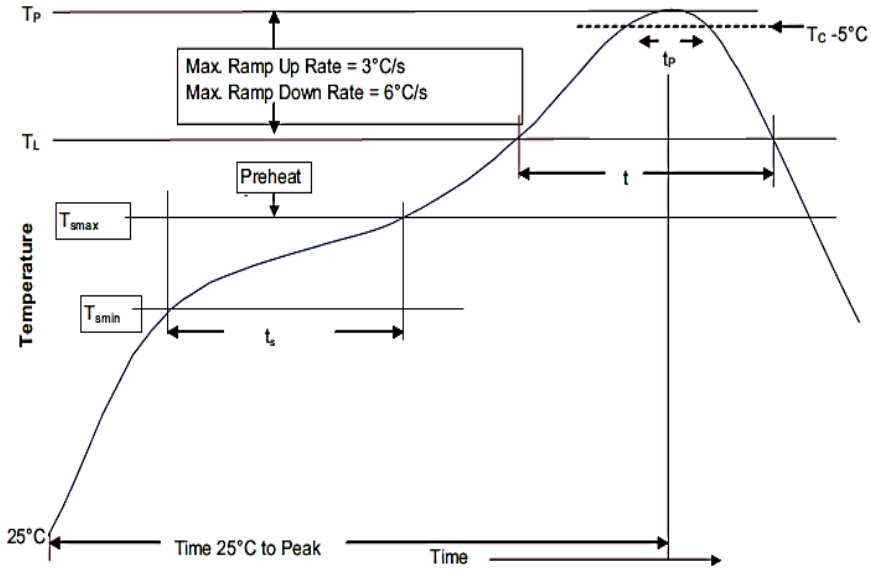
Tape Width	Peel-off Force	Peel Speed
12/16/24mm	0.1~1.3N	300±10mm/M



Packing Quantity

Part Number	Quantity (pcs/reel)
HCB121109R30 Type	300

Recommended Reflow Profile:



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Package Thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5mm)	235°C	220°C
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Table 2 - Lead (Pb) Free Solder (T_C)

Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
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1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Profile Feature		Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{smin})	100°C	150°C
	• Temperature max. (T_{smax})	150°C	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 Seconds	60-120 Seconds
Average ramp up rate T_{smax} to T_p		3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 60-150 Seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)** within 5 °C of the specified classification temperature (T_C)		20 Seconds**	30 Seconds**
Average ramp-down rate (T_p to T_{smax})		6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature		6 Minutes Max.	8 Minutes Max.

* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.
** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

Inductance Characteristics: