RL131207 Series

1. Features of RL131207 Series ：

- Ferrite-Based Resonant Inductors or Chokes.
- The inductance tolerance of 5% or 10%.
- Inductance range:1.1uH to 33.0uH,custom values are welcomed.
- High current output chokes, up to 105.0Amp with approx. 30% roll off.
- Maximum footprint: 33.5 x 19.0 mm, with a maximum height of 30.0 mm.
- Rated voltage: 600V_{AC}, 1000V_{DC}.
- Dielectric strength:4500V_{DC}(winding to core).
- Operating temperature range: -55 ℃ to +130 ℃, RoHs & HF compliant.

2. Electrical Characteristic of RL131207 Series:

ITG Part Number	OCL[1] (μH)	Inductance Tolerance	DCR[2] (mΩ) Max.	ACR[3] (mΩ) Typ.	Isat1[4] (A) @25℃	Isat2[4] (A) @75℃	Isat3[4] (A) @100℃	Irms[5] (A) @25℃
RL131207B-1R1K	1.1	±10%	0.82	4.4	105.0	90.0	82.0	50
RL131207B-2R2K	2.2	±10%	1.90	11.5	96.0	88.0	80.0	50
RL131207C-2R2K	2.2	±10%	0.82	7.0	44.0	41.0	38.0	50
RL131207B-4R4K	4.4	±10%	1.25	15.0	36.0	33.0	31.0	50
RL131207A-150J	15.0	±5%	9.50	110.0	32.0	29.0	26.0	17
RL131207A-180J	18.0	±5%	9.50	125.0	23.0	21.0	18.0	17
RL131207A-220J	22.0	±5%	9.50	135.0	21.0	19.0	17.5	17
RL131207A-330J	33.0	±5%	9.50	165.0	14.0	12.0	11.0	17

Notes:

1. Open Circuit Inductance (OCL) test condition: 200kHz,0.25Vrms,0Adc ,at 25℃.
2. DCR test conditions：Ta=25℃.
3. ACR test conditions：200kHz ,3.00Vrms , 0Adc , Ta=25℃. The ACR represents the equivalent resistance of an inductor, and its value is influenced by factors such as conversion frequency, coil design, core material, and air gap. Refer to the 'ACR vs Frequency Curve' for additional Information.
4. Isat1,Isat2 & Isat3 : DC current that will cause inductance to drop approximately by30%.
5. Irms : DC current for an approximate temperature rise of 40℃ without core loss , Derating is necessary for AC currents. PCB pad layout , trace thickness and width , air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended the part temperature not exceed 130 ℃ under worst case operating conditions verified in the end application.

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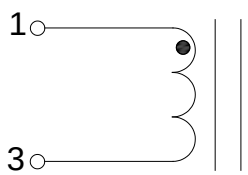
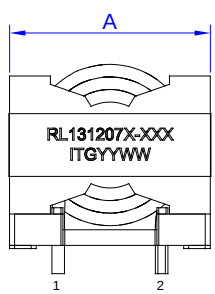
3. Mechanical Dimension(Unit : mm):

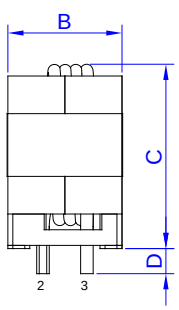
ITG Part Number	A Max.	B Max.	C Max.	D ± 0.5	E1 ± 0.5	E2 ± 0.5	F1 ±0.3	F2 ±0.15	PCB Layout Fig.
RL131207B-1R1K	33.5	19.0	30.0	4.0	16.5	7.0	3.4	1.0	3
RL131207B-2R2K	33.5	19.0	30.0	4.0	16.5	7.0	2.7	1.0	2
RL131207C-2R2K	33.5	19.0	30.0	4.0	16.5	7.0	3.4	1.0	3
RL131207B-4R4K	33.5	19.0	30.0	4.0	16.5	7.0	2.7	1.0	2
RL131207A-150J	33.5	19.0	30.0	4.0	16.5	7.0	2.0	1.0	1
RL131207A-180J	33.5	19.0	30.0	4.0	16.5	7.0	2.0	1.0	1
RL131207A-220J	33.5	19.0	30.0	4.0	16.5	7.0	2.0	1.0	1
RL131207A-330J	33.5	19.0	30.0	4.0	16.5	7.0	2.0	1.0	1



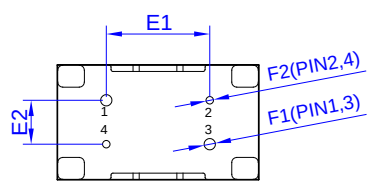
Schematic



Front View



Side View



Bottom View

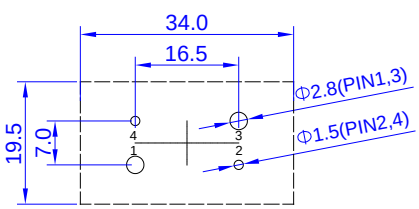


Fig.1

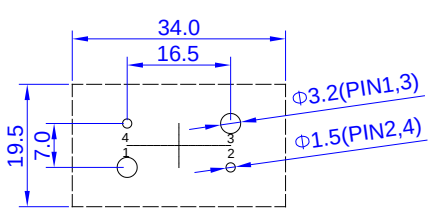


Fig.2

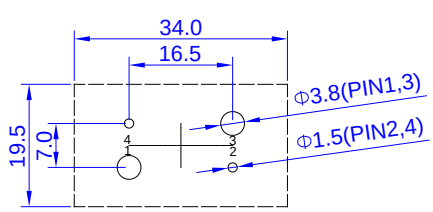


Fig.3

Suggested PCB Layout

Part Marking:
RL131207X-XXX: Part Number.
ITGYYWW:ITG is Company Name,YYWW is Date Code

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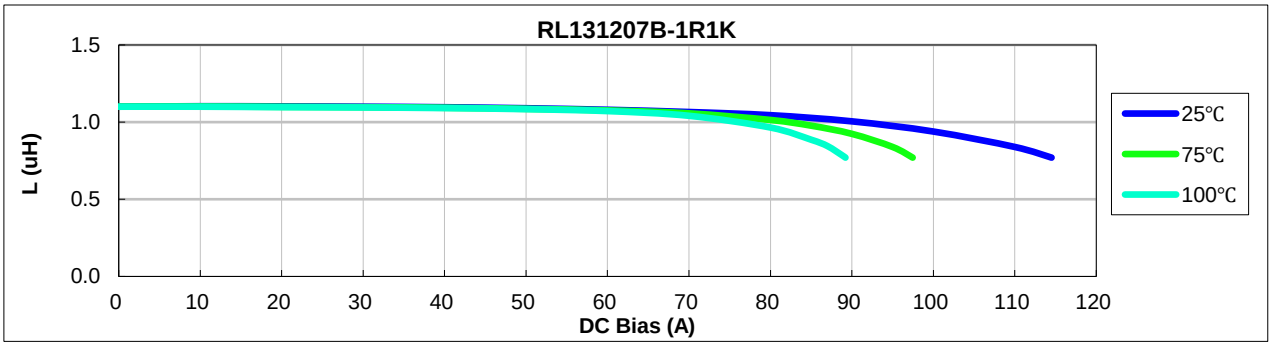
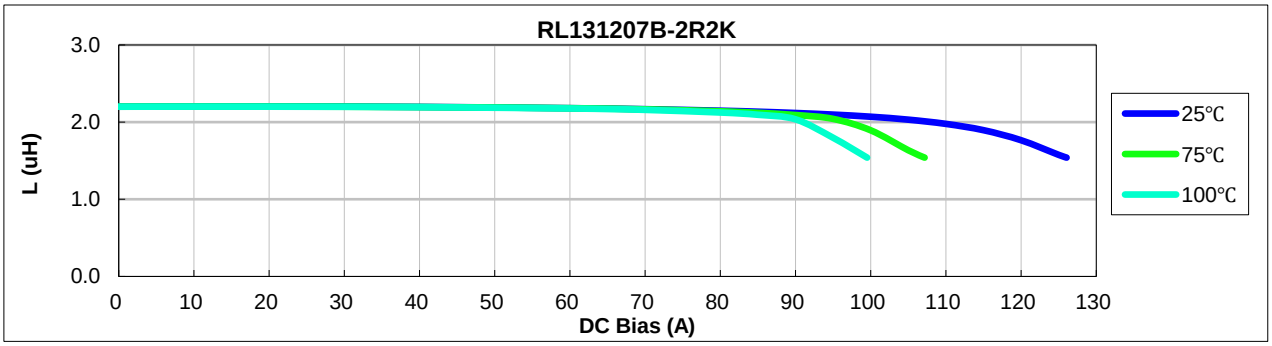
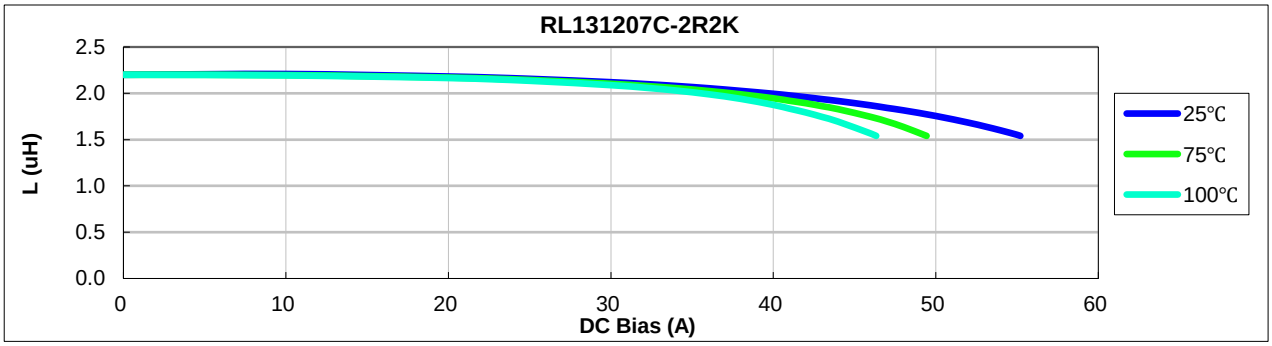
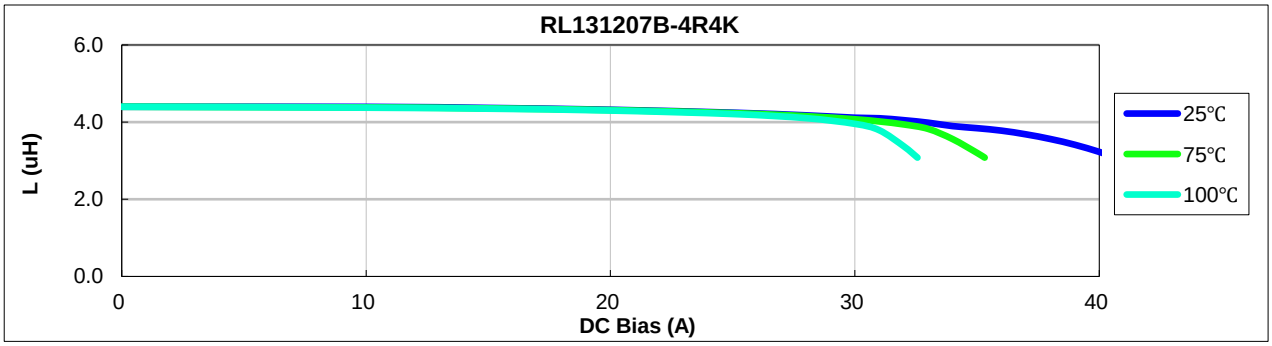
RL131207 Series

4. Inductance Characteristics (Inductance vs Current):









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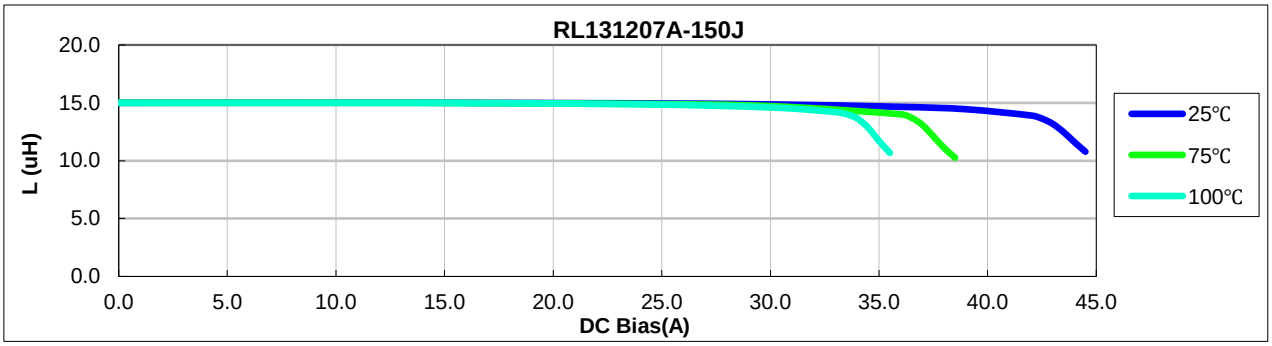
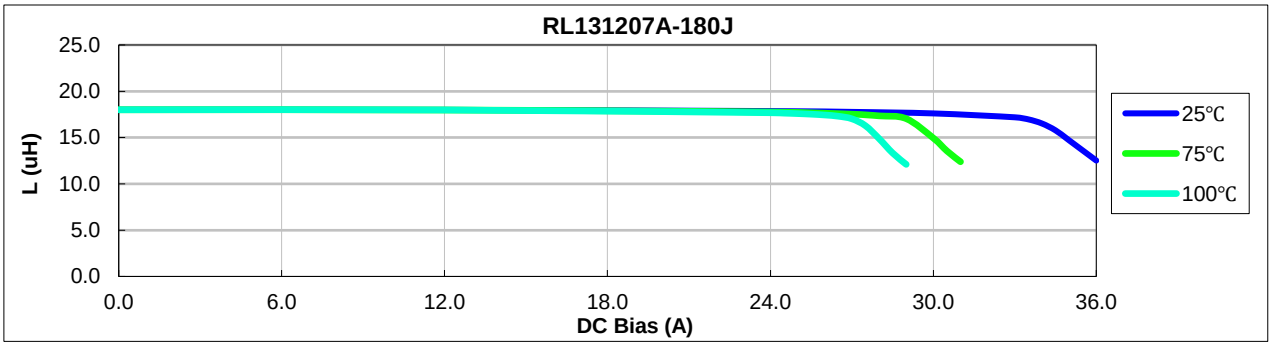
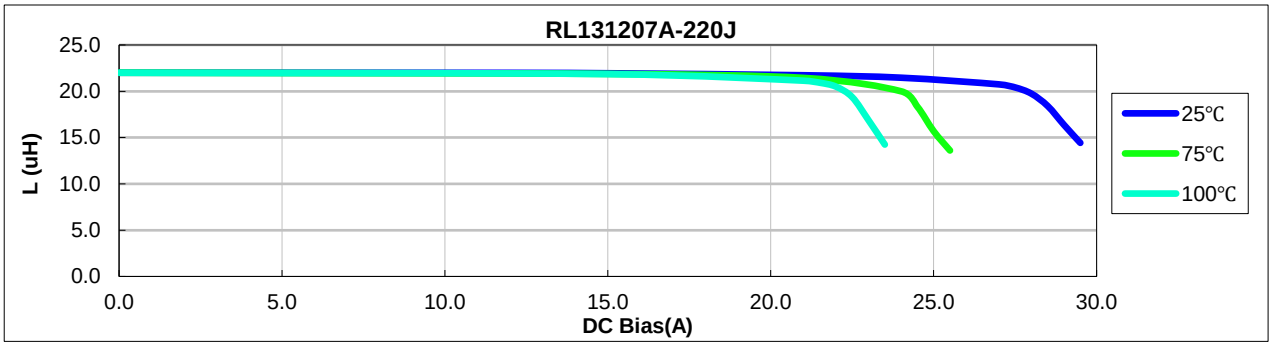
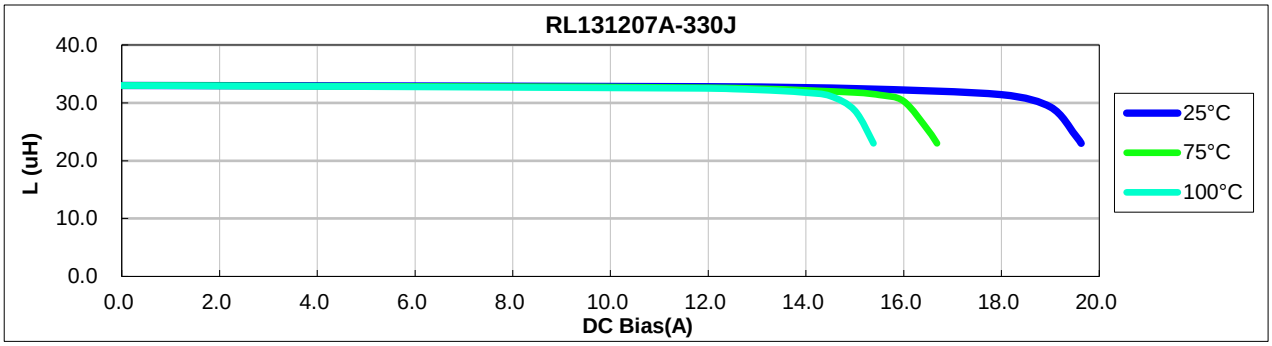
RL131207 Series

4. Inductance Characteristics (Inductance vs Current):









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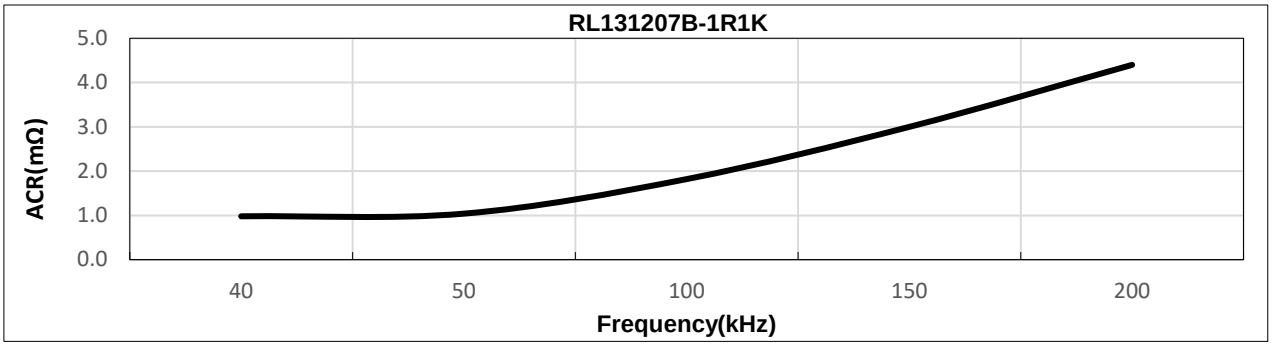
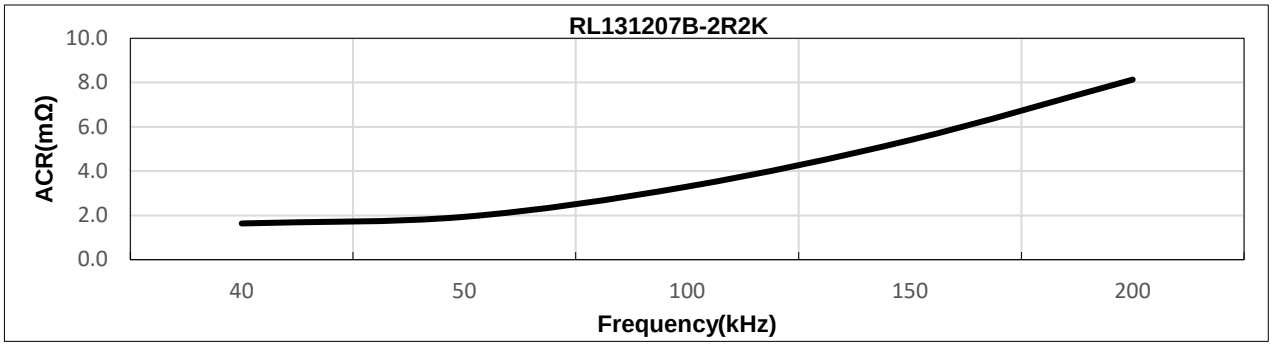
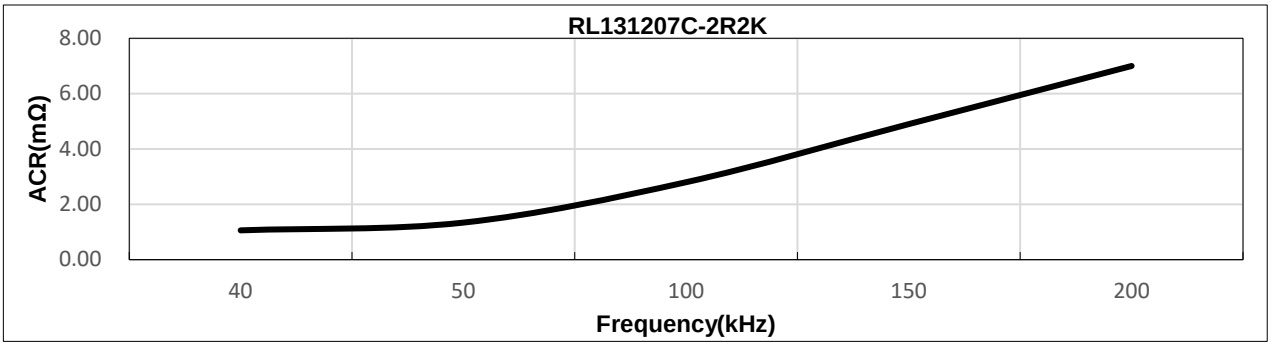
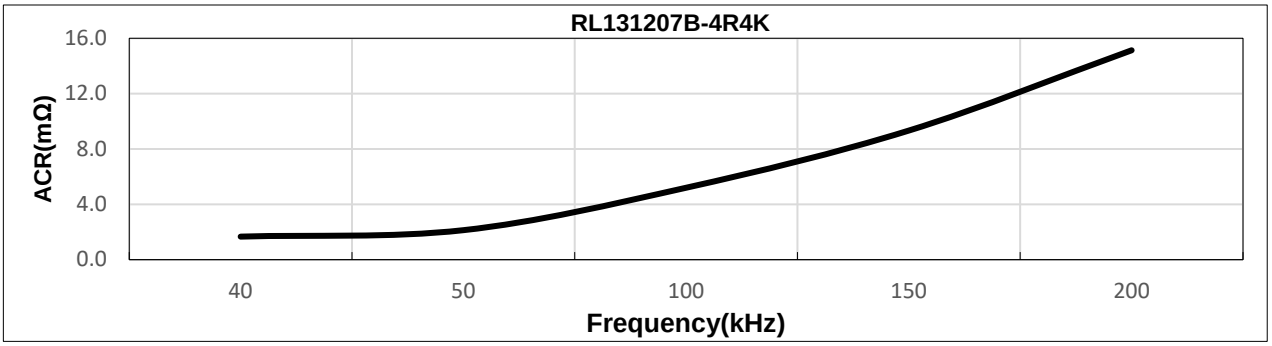
RL131207 Series

5. Inductance Characteristics (ACR vs Frequency):









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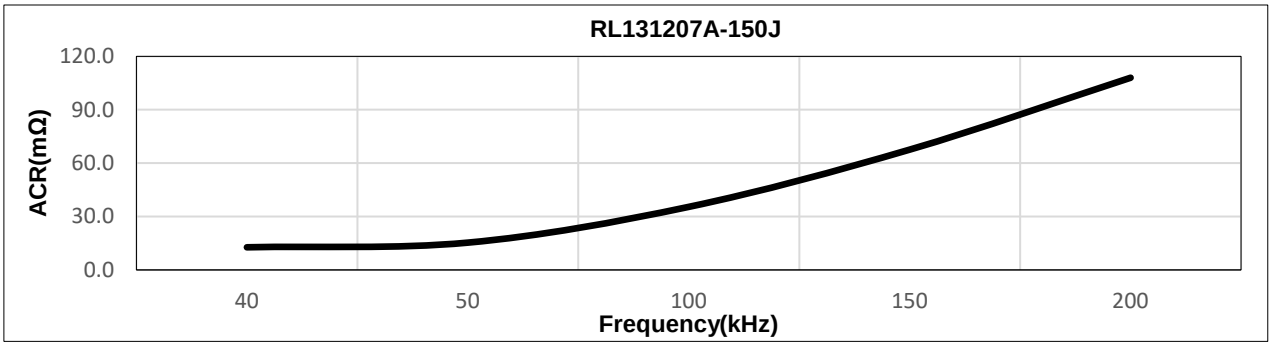
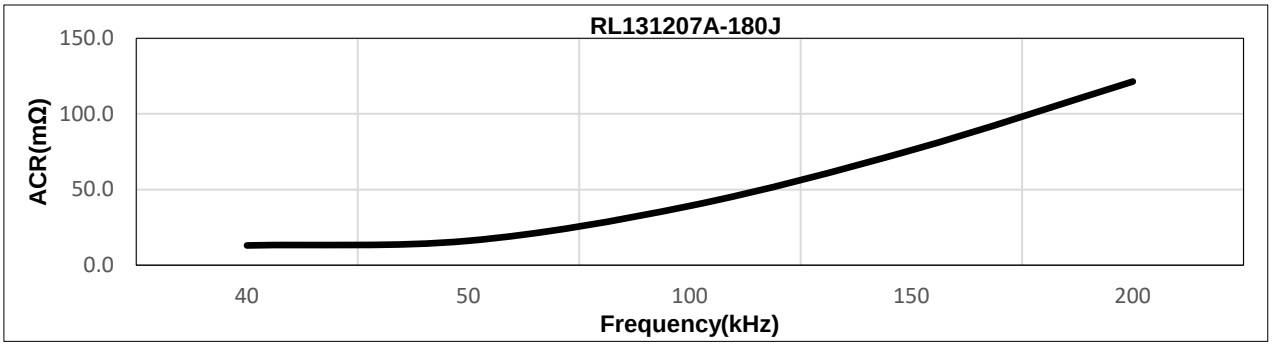
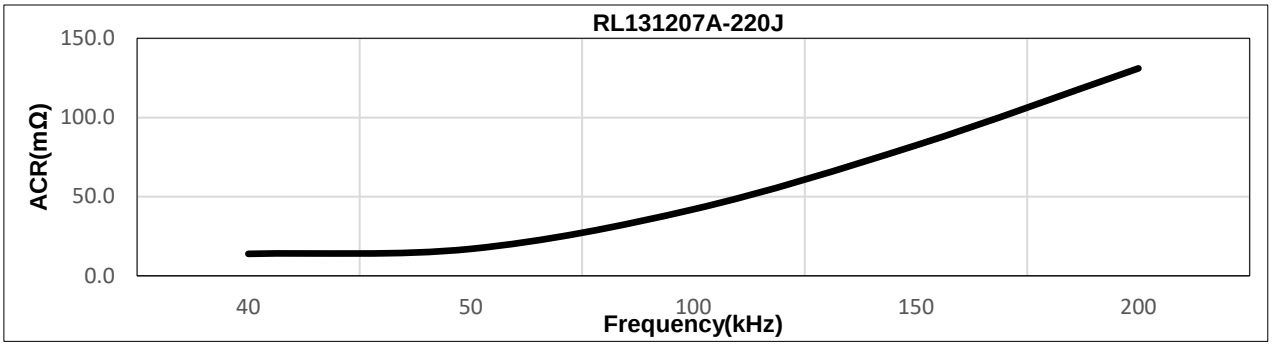
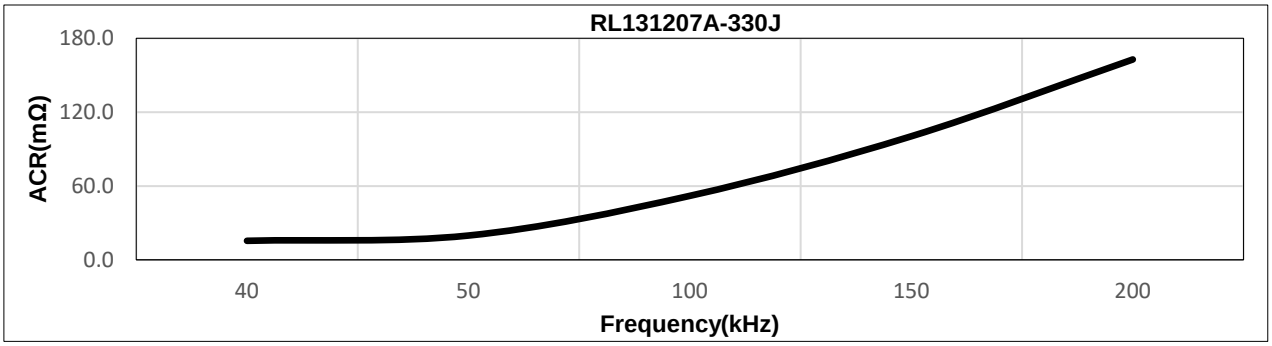
5. Inductance Characteristics (ACR vs Frequency):









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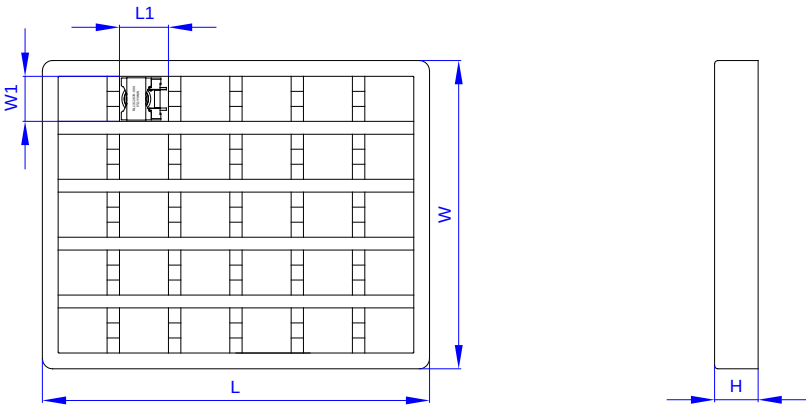
RL131207 Series

1.RELIABILITY TEST:

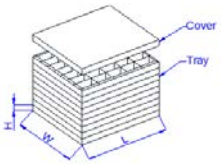
(1).ENCAPSOLATION MODE:



(2).DIMENSION(mm):

Dimension	L (mm)	W (mm)	H (mm)	L1 (mm)	W1 (mm)	Quantity per tray	Material
Tolerance	Typ.	Typ.	Typ.	Typ.	Typ.	pcs.	/
Value	245	195	21	35	34.5	20	PET

(3).PACKAGE MODE:



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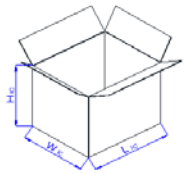

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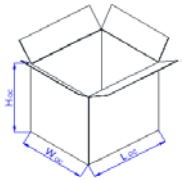

(4).PACKAGING LIST:

1.Tray

/	L (mm)	W (mm)	H (mm)	Quantity per tray	No. of tray	Material
Tolerance	Typ.	Typ.	Typ.	pcs.	pcs.	/
Value	245	195	21	20	9	PET

2.Inner Carton

/	L_{IC} (mm)	W_{IC} (mm)	H_{IC} (mm)	Toyal quantity	Material
Tolerance	Typ.	Typ.	Typ.	pcs.	/
Value	260	210	217	180	Paper(A=B)

3.Inner Carton

/	L_{OC} (mm)	W_{OC} (mm)	H_{OC} (mm)	Toyal quantity	Material
Tolerance	Typ.	Typ.	Typ.	pcs.	/
Value	275	232	255	180	Paper(A=A)

(5).WEIGHT: N.W: 50.00g/pcs TOTAL 9.0Kg(APPROX),G.W:TOTAL 10.5Kg (APPROX).

(6).Storage conditions: -10℃~40℃, 70%RH (Max.).

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1.RELIABILITY TEST:

TEST ITEMS	SPECIFICATIONS	TEST METHOD AND REMARKS
Solderability	The electrodes shall be at least 95% covered with new solder coating	According to IEC68-2-20 Method T(Tb) 1. Soldering temperature:260±5℃ 2. Solder: 99.3%Sn/0.7%Cu 3. Flux: Rosin 4. Immersion time:5±1Sec
Resistance to solder heat	1. Appearance : no damage 2. Inductance change:within±10%of initial value	According to MIL-STD-202Method210 1. Preheat temperature150℃ 2. Preheat time:1min 3. Solder temperature260±5℃ 4. Dipping time:10±1Sec 5. Measured at room temperature after placing for 24hours
Humidity resistance	1. Appearance : no damage 2. All Electrical and mechanical parameters within tolerance	According to IEC68-2-3 Method Ca 1. Temp:40±2℃ 2. Humidity:93 +2/-3%RH 3. Test time:500±2H 4. The component should be stabilized at normal condition for24 Hours before test
High temperature resistance	1. Appearance : no damage 2. All Electrical and mechanical parameters within tolerance	According to IEC68-2-2 Method B(Bd) 1. Temperature:85±3℃ 2. Test time:500+24H/-0H 3. The component should be stabilized at normal condition for 24hours before test
Low Temperature resistance	1. Appearance : no damage 2. All Electrical and mechanical parameters within tolerance	According to IEC68-2-1 Method A(Ad); 1. Temperature:-40±3℃ 2. Test time:500+24H/-0H 3. The component should be stabilized at normal condition for 24hours before test
Temperature cycles	1. Appearance : no damage 2. All Electrical and mechanical parameters within tolerance	According to IEC68-2-14 Method N(Nb); 1. Low-temp:-40±3℃ duration 30min 2. room –temp:25±2℃ duration 3H 3. High-temp:85±3℃ duration 30min 4. room-temp:25±2℃ duration3H 5. Number of cycle:10 cycles 6. The component should be stabilized at normal condition for 24hours before test

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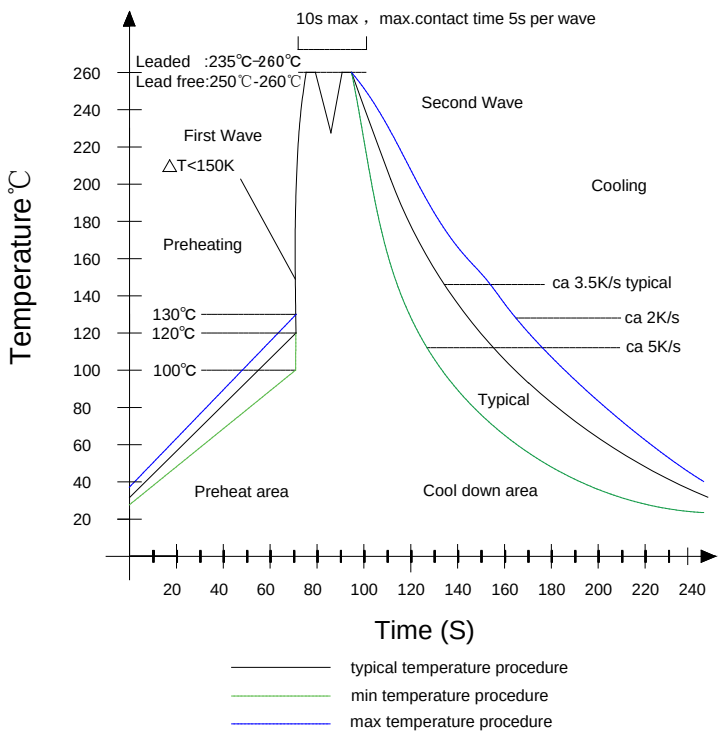
Wave Soldering Chart

Stage	Precaution	Recommended temperature profile
Wave soldering	Temperature profile can be referenced after confirming of adhesion , temperature of resistance to soldering heat , component size , soldering etc. sufficient . **Note:** Refer to the EN 61760-1:2020. You can adjust the temperature and time parameters to get a more suitable installation.	

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