

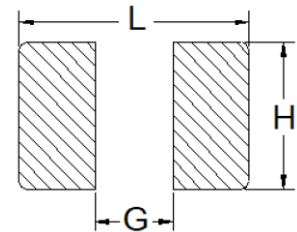
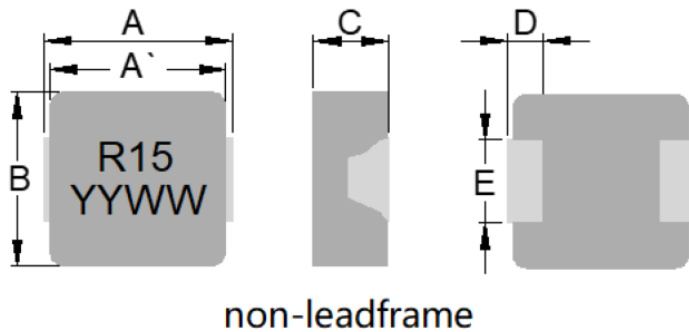
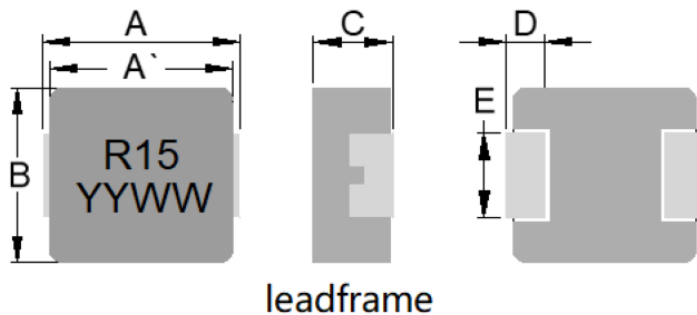
1. Part No. Expression

P I C Q 1 2 6 5 H P R 1 5 M F

(a) (b) (c) (d) (e) (f)

- | | |
|--------------------|---------------------|
| (a) Series Code | (d) Inductance Code |
| (b) Dimension Code | (e) Tolerance Code |
| (c) Material Code | (f) Special Code |

2. Configuration & Dimensions (Unit: mm)



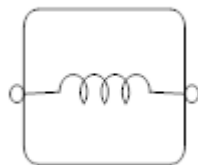
Recommended PCB Layout

- Note:
1. The above PCB layout reference only.
 2. Recommend solder paste thickness at 0.15 mm and above.
 3. Marking: Top= Inductance Code, Bottom=YYWW (Year/World week), Black

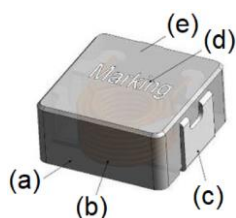
A	A'	B	C	D
13.5±0.5	12.5±0.3	12.5±0.3	6.2±0.3	2.3±0.3
E	L	G	H	-
4.7±0.3	14.2 Ref	8.0 Ref	5.0 Ref	-

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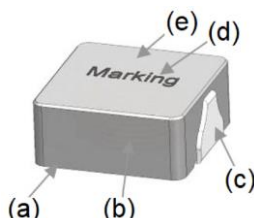
3. Schematic



4. Material List



lead frame



Non-leadframe

- (a) Core
- (b) Wire
- (c) Clip
- (d) Ink
- (e) Paint

5. General Specifications

- (a) Reliability test for this part meets AEC-Q200 standard.
- (b) Operating Temp.: - 55°C to + 125°C (including self-temperature rise)
- (c) Storage Temp.: - 55°C to + 125°C (on board)
- (d) All test data referenced to 25°C ambient.
- (e) Heat Rated Current (Irms) will cause the coil temperature rise approximately ΔT of 40°C.
- (f) Saturation Current (Isat) will cause inductance L0 to drop approximately 30%.
- (g) Rated DC Current: The lower value of Irms and Isat.
- (h) Part Temperature (Ambient + Temp. Rise): Should not exceed 125°C under worst case operating conditions.
- (i) Maximum Operating Voltage: 80V
- (j) Storage Condition (Component in its packaging)
 - i) Temperature: Less than 40°C
 - ii) Humidity: Less than 60% RH

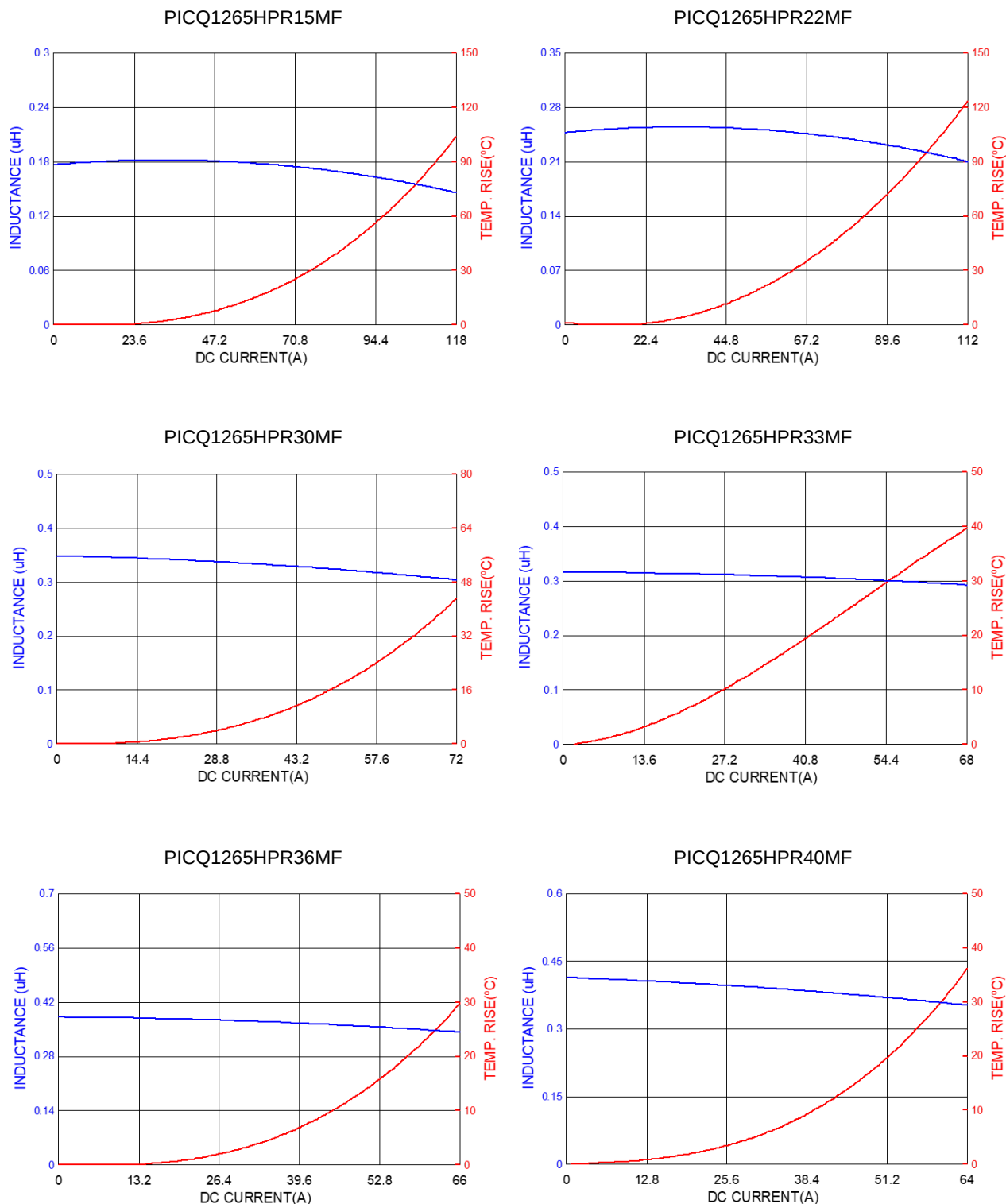
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6. Electrical Characteristics

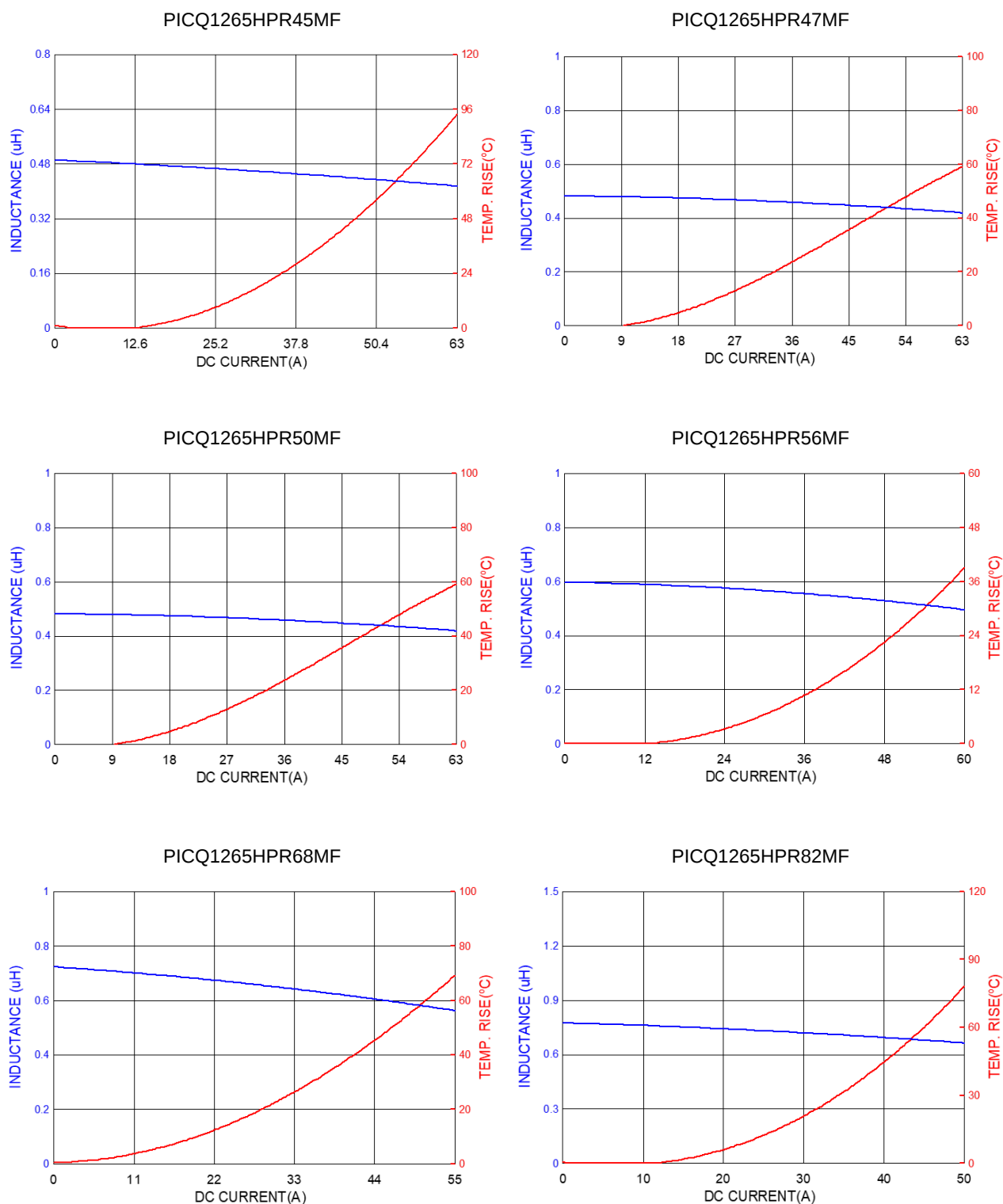
Part Number	Inductance (μ H) @0A $\pm 20\%$	Test Frequency	Irms (A) Typ	Isat (A) Typ	DCR (m Ω)		Type
					Typ	Max	
PICQ1265HPR15MF	0.15	1.0V/100KHz	55.0	118	0.49	0.60	Non-Leadframe
PICQ1265HPR22MF	0.22	1.0V/100KHz	53.0	112	0.47	0.60	Non-Leadframe
PICQ1265HPR30MF	0.30	1.0V/100KHz	48.0	72.0	0.6	0.72	Non-Leadframe
PICQ1265HPR33MF	0.33	1.0V/100KHz	46.0	68.0	0.65	0.8	Non-Leadframe
PICQ1265HPR36MF	0.36	1.0V/100KHz	45.0	66.0	0.7	0.9	Non-Leadframe
PICQ1265HPR40MF	0.40	1.0V/100KHz	44.0	64.0	0.7	1.0	Non-Leadframe
PICQ1265HPR45MF	0.45	1.0V/100KHz	42.0	63.0	0.9	1.2	Non-Leadframe
PICQ1265HPR47MF	0.47	1.0V/100KHz	41.0	63.0	0.9	1.2	Non-Leadframe
PICQ1265HPR50MF	0.50	1.0V/100KHz	40.0	60.0	0.92	1.25	Non-Leadframe
PICQ1265HPR56MF	0.56	1.0V/100KHz	37.0	58.0	1.05	1.2	Non-Leadframe
PICQ1265HPR68MF	0.68	1.0V/100KHz	35.0	55.0	1.25	1.5	Non-Leadframe
PICQ1265HPR82MF	0.82	1.0V/100KHz	33.0	50.0	1.5	1.9	Non-Leadframe
PICQ1265HP1R0MF	1.00	1.0V/100KHz	30.0	48.0	1.7	2.3	Non-Leadframe
PICQ1265HP1R5MF	1.50	1.0V/100KHz	27.0	45.0	2.5	3.0	Non-Leadframe
PICQ1265HP1R8MF	1.80	1.0V/100KHz	24.0	40.0	3.6	4.0	Leadframe
PICQ1265HP2R2MF	2.20	1.0V/100KHz	22.0	37.0	3.8	4.2	Leadframe
PICQ1265HP3R3MF	3.30	1.0V/100KHz	18.0	30.0	5.7	6.8	Leadframe
PICQ1265HP4R7MF	4.70	1.0V/100KHz	13.5	28.0	7.0	8.4	Leadframe
PICQ1265HP5R6MF	5.60	1.0V/100KHz	12.5	23.0	8.5	10.0	Leadframe
PICQ1265HP6R8MF	6.80	1.0V/100KHz	11.5	18.0	9.5	11.5	Leadframe
PICQ1265HP7R0MF	7.00	1.0V/100KHz	11.2	17.7	10.0	12.3	Leadframe
PICQ1265HP8R2MF	8.20	1.0V/100KHz	10.5	16.0	12.0	15.5	Leadframe
PICQ1265HP100MF	10.0	1.0V/100KHz	10.0	15.5	13.2	16.5	Leadframe
PICQ1265HP120MF	12.0	1.0V/100KHz	9.5	14.0	16.0	20.0	Leadframe
PICQ1265HP130MF	13.0	1.0V/100KHz	9.0	13.0	21.0	24.0	Leadframe
PICQ1265HP150MF	15.0	1.0V/100KHz	9.0	13	23.2	28.0	Leadframe
PICQ1265HP220MF	22.0	1.0V/100KHz	9.0	12.0	32.5	37.0	Leadframe
PICQ1265HP330MF	33.0	1.0V/100KHz	8.0	11.0	48.0	58.0	Leadframe
PICQ1265HP470MF	47.0	1.0V/100KHz	6.5	9.5	76.0	90.0	Leadframe

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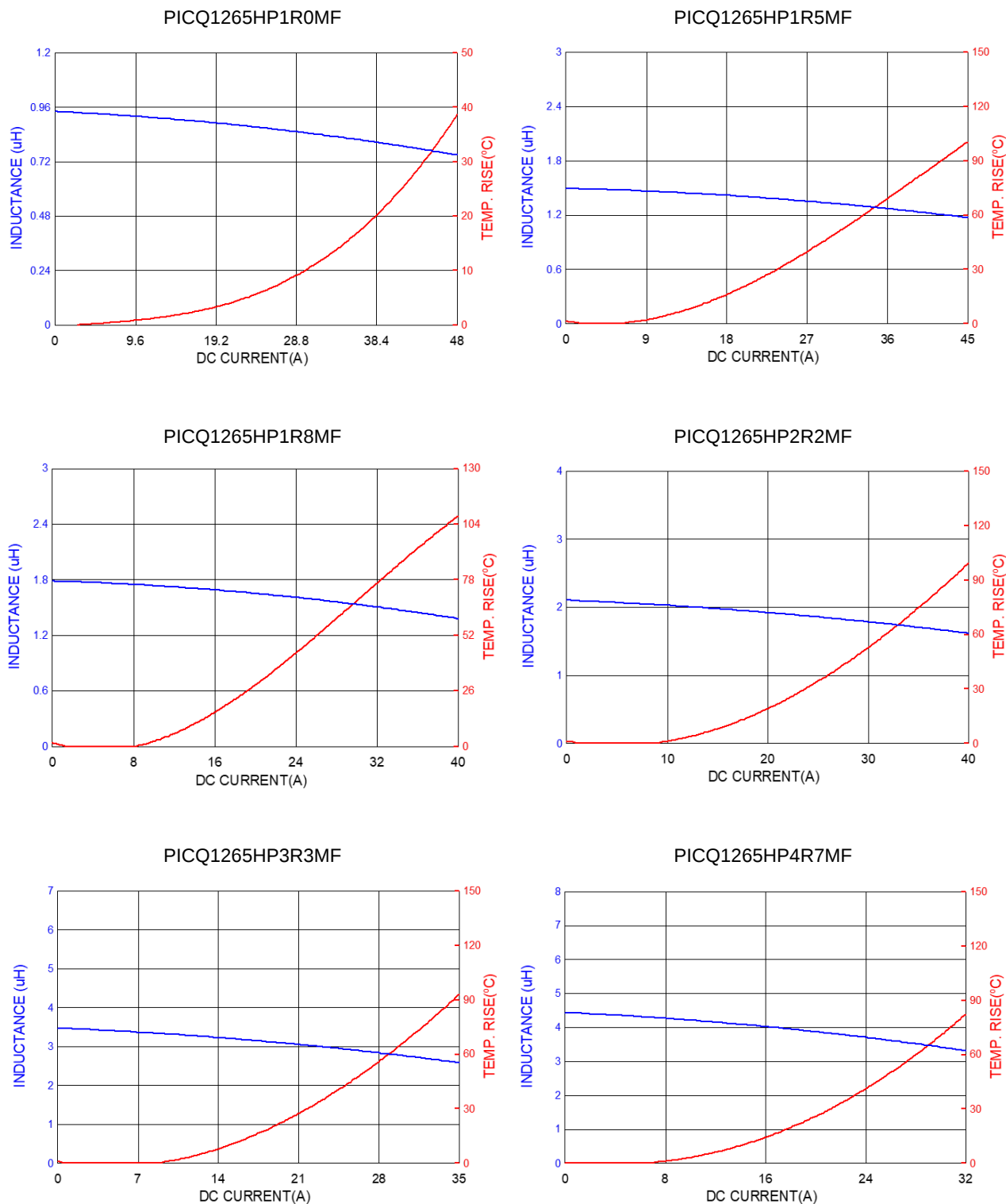
7. Characteristics Curve



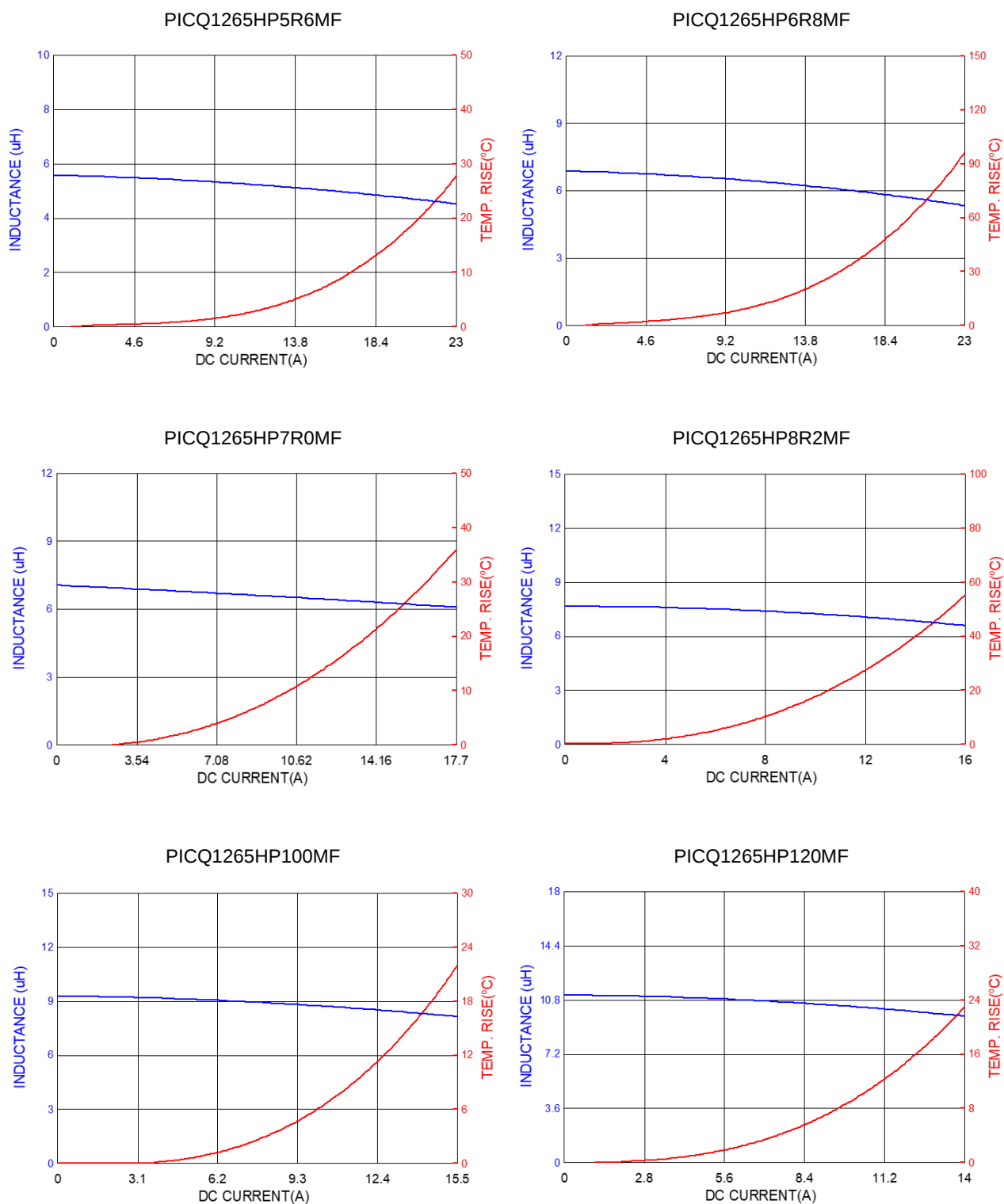
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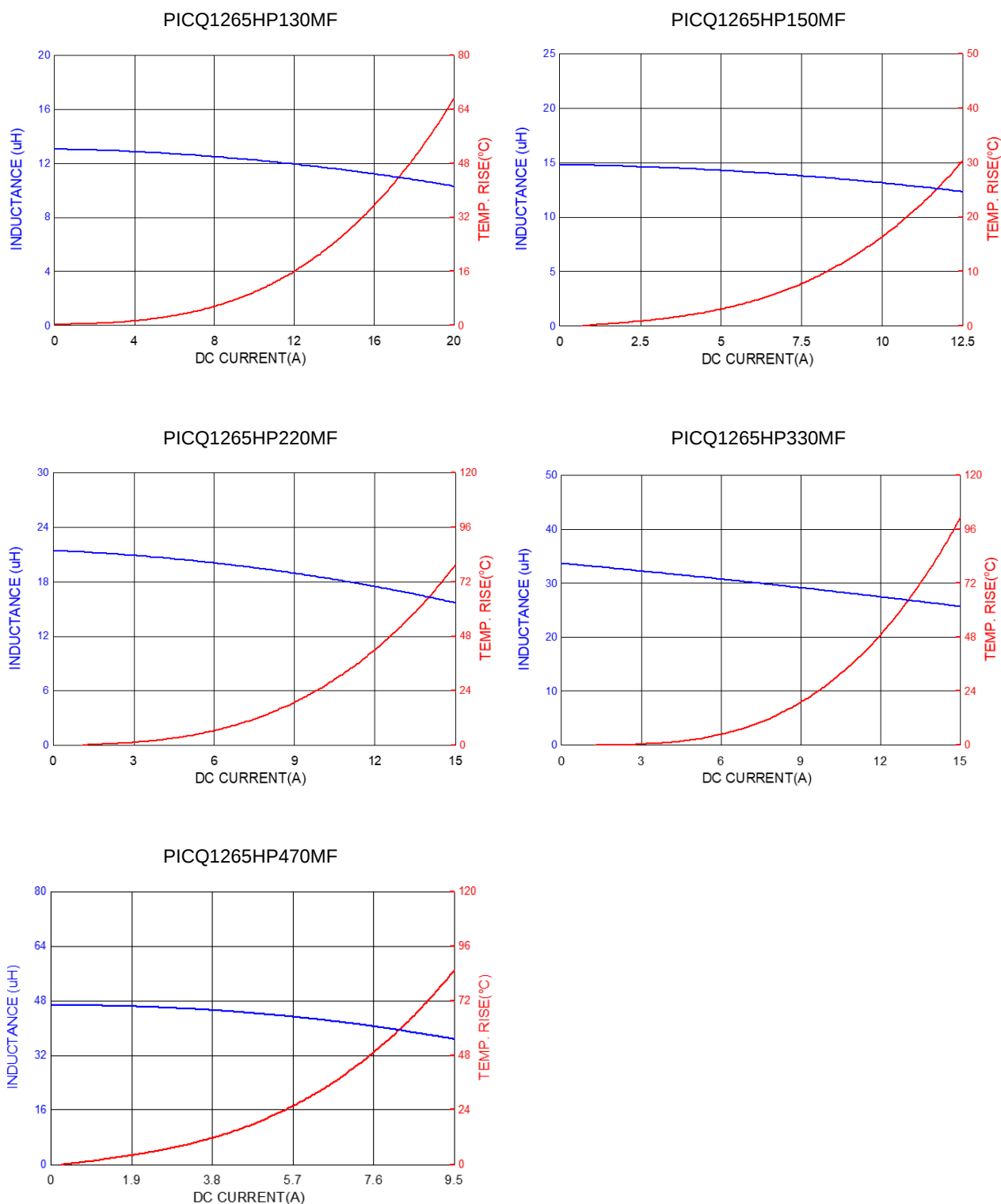
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8. Soldering Specification

Mildly activated rosin fluxes are preferred. Our terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

8-1. IR Soldering Reflow

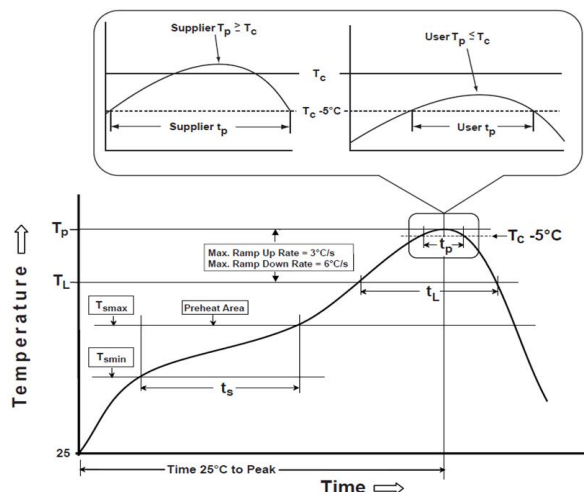
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

8-2. Iron Reflow

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended (Figure 2).

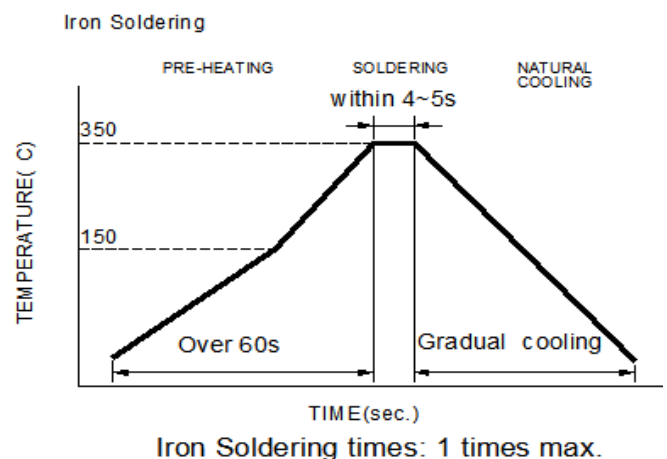
Note:

- Preheat circuit and products to 150°C.
- 355°C tip temperature (Max.)
- Never contact the ceramic with the iron tip
- 1.0mm tip diameter (Max.)
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- Limit soldering time to 4~5 sec.



Reflow times: 3 times Max

Figure 1: IR Soldering Reflow



Soldering iron method: 350±5°C Max

Figure 2: Iron soldering temperature profiles

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Table (1.1) Reflow Profiles

Profile Type:	Pb-Free Assembly
Preheat	
-Temperature Min (T_{smin})	150°C
-Temperature Max (T_{smax})	200°C
-Time (t_s) from (T_{smin} to T_{smax})	60-120seconds
Ramp-up rate (T_L to T_p)	3°C /second max.
Liquids temperature (T_L)	217°C
Time (t_L) maintained above T_L	60-150 seconds
Classification temperature (T_c)	See Table (1.2)
Time (t_p) at $T_c - 5^\circ\text{C}$ (T_p should be equal to or less than T_c .)	* < 30 seconds
Ramp-down rate (T_p to T_L)	6°C /second max.
Time 25°C to peak temperature	8 minutes max.

T_p: maximum peak package body temperature, **T_c**: the classification temperature.

For user (customer) **T_p** should be equal to or less than **T_c**.

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

Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

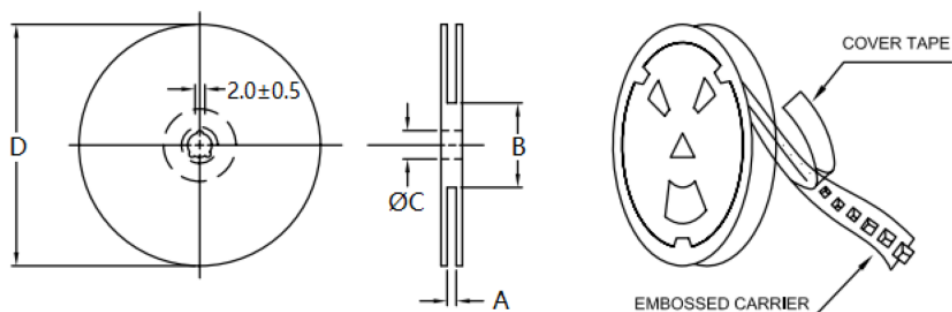
	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

Reflow is referred to standard IPC/JEDEC J-STD-020E.

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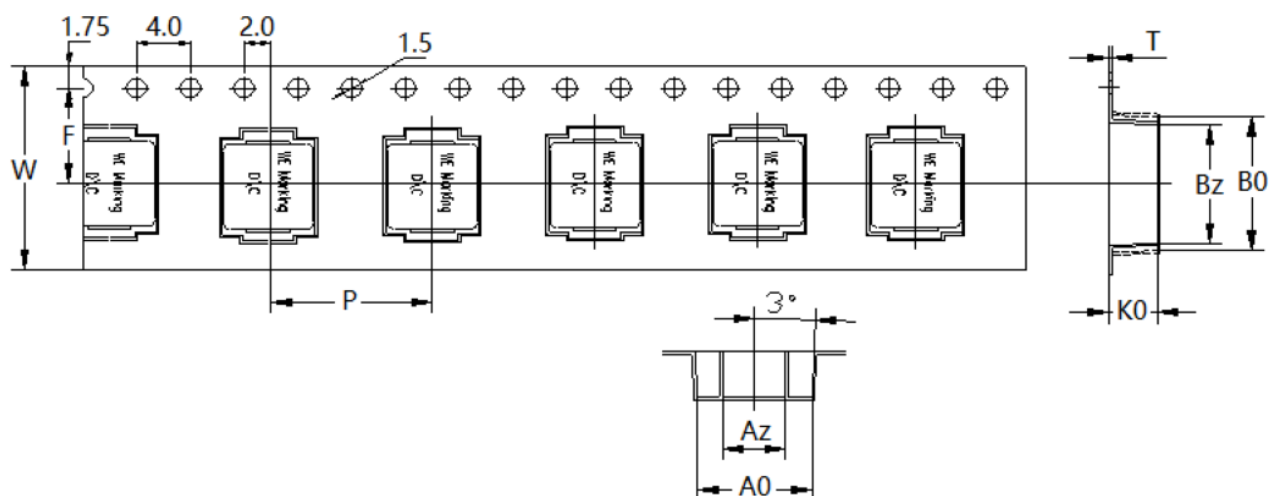
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
13"x24mm	24.4+2.0/-0.0	100.0±2.0	13.0+0.5/-0.2	330.0

9-2. Tape Dimension (Unit: mm)



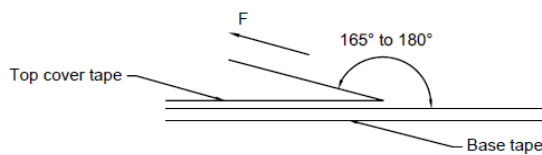
B0	Bz	A0	Az	K0
14.10±0.10	13.00±0.10	12.90±0.10	7.00±0.10	7.00±0.10
P	W	F	T	-
16.00±0.10	24.00±0.30	11.50±0.10	0.35±0.05	-

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9-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	500
Inner box	1,000
Carton	4,000

9-4. Tearing Off Force



The force for tearing off cover tape is according to the follow table, 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±10

Tape Size	8 mm	12 to 56 mm	72 mm or Wider
Tearing Off Force (grams)	10~100	10~130	10~150

Application Notice

1. Storage Conditions

To maintain the solderability of terminal electrodes:

- (a) Recommended products should be used within 12 months from the time of delivery.
- (b) The packaging material should be kept where no chlorine or sulfur exists in the air.

2. Transportation

- (a) Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- (b) Vacuum pick up is strongly recommended for individual components.
- (c) Bulk handling should ensure that abrasion and mechanical shock are minimized.

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