

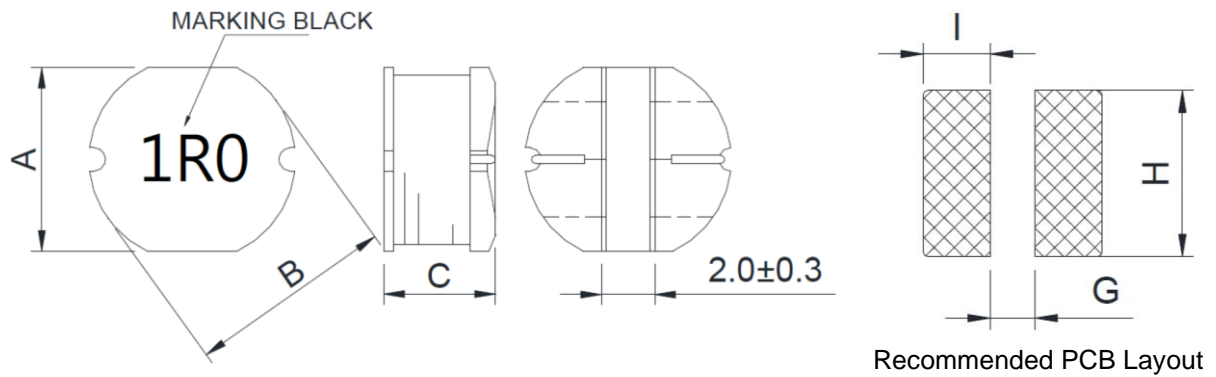
## 1. Part No. Expression

**PDC05041R0MZ F**

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

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

## 2. Configuration & Dimensions (Unit: mm)

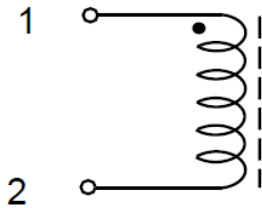


- Note: 1. The above PCB layout reference only.  
 2. Marking: Inductance Code

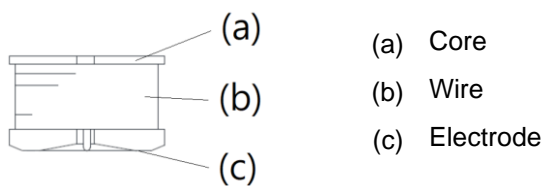
A	B	C	G	H	I
5.20±0.30	5.80±0.30	4.50±0.35	1.70 Ref	5.50 Ref	2.15 Ref

NOTE: Specifications subject to change without notice. Please check our website for latest information.

## 3. Schematic



## 4. Material List



## 5. General Specifications

- (a) Operating Temp.: -40°C to +125°C (including self-temperature rise)
- (b) Storage Temp.: -40°C to +125°C (on board)
- (c) All test data referenced to 25°C ambient.
- (d) IDC will cause the coil temperature rise approximately  $\Delta T$  of 40°C Max, and inductance  $L_0$  to drop approximately 10%.
- (e) Rated Current: The lower value of  $I_{sat}$  and  $I_{rms}$ .
- (f) Storage Condition (Component in its packaging)
  - i) Temperature: 25°C $\pm$ 5°C
  - ii) Humidity: 35~70% RH

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## 6. Electrical Characteristics

Part Number	Inductance (µH) @0A	Test Frequency	DCR (Ω) Max	IDC (A)	
				Typ	Max
PDC05041R0MZF	1.0±20%	1V/7.96MHz	0.015	5.90	4.75
PDC05041R2MZF	1.2±20%	1V/7.96MHz	0.020	5.20	4.20
PDC05041R5MZF	1.5±20%	1V/7.96MHz	0.025	4.70	3.80
PDC05041R8MZF	1.8±20%	1V/7.96MHz	0.030	4.00	3.20
PDC05042R2MZF	2.2±20%	1V/7.96MHz	0.035	3.80	3.10
PDC05042R7MZF	2.7±20%	1V/7.96MHz	0.040	3.40	2.75
PDC05043R3MZF	3.3±20%	1V/7.96MHz	0.045	3.30	2.65
PDC05043R9MZF	3.9±20%	1V/7.96MHz	0.050	2.90	2.35
PDC05044R7MZF	4.7±20%	1V/7.96MHz	0.060	2.80	2.50
PDC05045R6MZF	5.6±20%	1V/7.96MHz	0.070	2.40	1.95
PDC05046R8MZF	6.8±20%	1V/7.96MHz	0.080	2.10	1.70
PDC05048R2MZF	8.2±20%	1V/7.96MHz	0.090	2.00	1.60
PDC0504100MZF	10.0±20%	1V/2.52MHz	0.100	1.44	1.15
PDC0504120MZF	12.0±20%	1V/2.52MHz	0.120	1.40	1.12
PDC0504150MZF	15.0±20%	1V/2.52MHz	0.140	1.30	1.05
PDC0504180MZF	18.0±20%	1V/2.52MHz	0.150	1.23	1.00
PDC0504220MZF	22.0±20%	1V/2.52MHz	0.180	1.11	0.90
PDC0504270MZF	27.0±20%	1V/2.52MHz	0.200	0.97	0.78
PDC0504330KZF	33.0±10%	1V/2.52MHz	0.230	0.88	0.70
PDC0504390KZF	39.0±10%	1V/2.52MHz	0.320	0.80	0.65
PDC0504470KZF	47.0±10%	1V/2.52MHz	0.370	0.72	0.60
PDC0504560KZF	56.0±10%	1V/2.52MHz	0.420	0.68	0.55
PDC0504680KZF	68.0±10%	1V/2.52MHz	0.460	0.61	0.50
PDC0504820KZF	82.0±10%	1V/2.52MHz	0.600	0.58	0.47
PDC0504101KZF	100.0±10%	1V/1kHz	0.700	0.52	0.42
PDC0504121KZF	120.0±10%	1V/1kHz	0.930	0.48	0.40
PDC0504151KZF	150.0±10%	1V/1kHz	1.100	0.40	0.32
PDC0504181KZF	180.0±10%	1V/1kHz	1.380	0.38	0.30
PDC0504221KZF	220.0±10%	1V/1kHz	1.570	0.35	0.28
PDC0504102KZF	1000.0±10%	1V/1kHz	6.000	0.15	0.12

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### 7. 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.

#### 7-1. IR Soldering Reflow

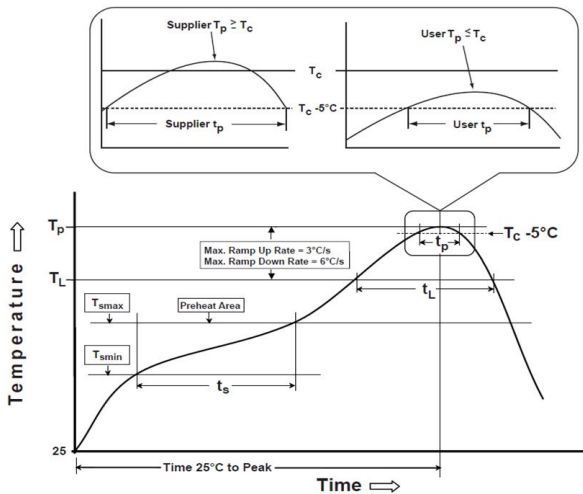
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

#### 7-2. 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).

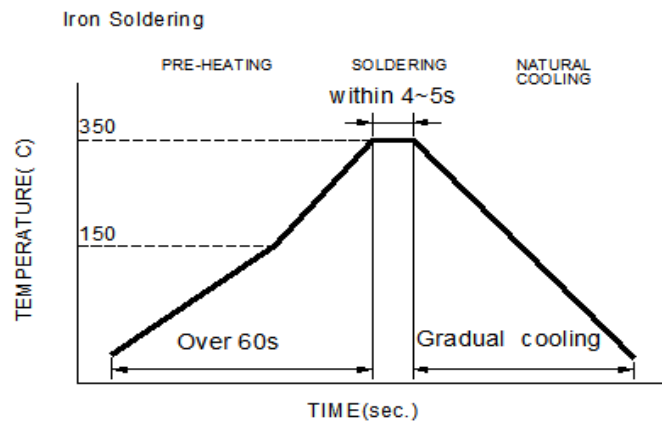
Note:

- (a) Preheat circuit and products to 150°C.
- (b) 355°C tip temperature (Max.)
- (c) Never contact the ceramic with the iron tip
- (d) 1.0mm tip diameter (Max.)
- (e) Use a 20 watt soldering iron with tip diameter of 1.0mm
- (f) 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<sub>p</sub>**: maximum peak package body temperature, **T<sub>c</sub>**: the classification temperature.

For user (customer) **T<sub>p</sub>** should be equal to or less than **T<sub>c</sub>**.

\*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 ( $T_c$ )**

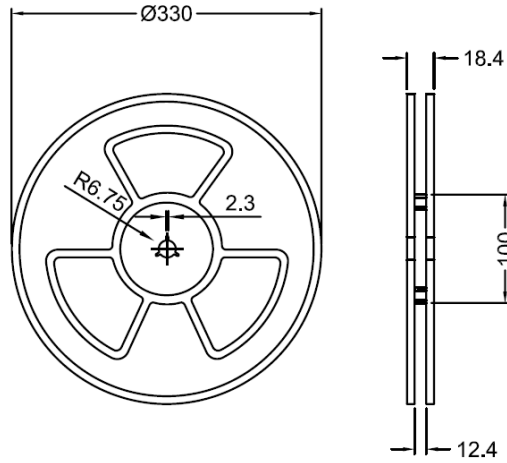
	Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350-2000	Volume mm <sup>3</sup> >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

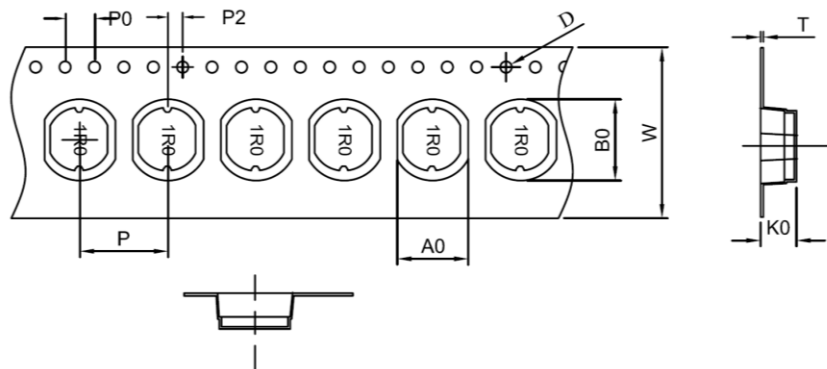
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8. Packaging Information

8-1. Reel Dimension (Unit: mm)



8-2. Tape Dimension (Unit: mm)



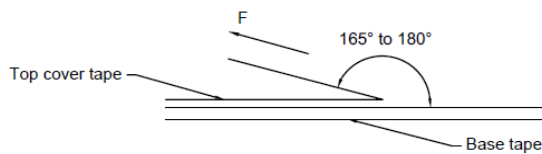
W	A0	B0	K0	P
12.0+0.3/-0.1	5.5±0.1	6.0±0.1	4.7±0.1	8.0±0.1
D	P0	P2	T	-
1.5+0.1/-0.0	4.0±0.1	2.0±0.1	0.4 Ref	-

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### 8-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	1,500
Inner Box	3,000
Outer Box	15,000

### 8-4. 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 6 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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