

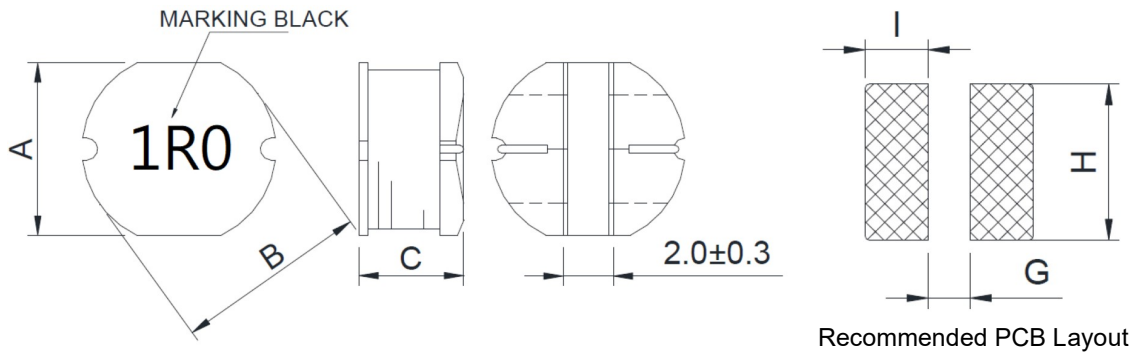
1. Part No. Expression

PDC05041R0MZ E

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

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

2. Configuration & Dimensions (Unit: mm)

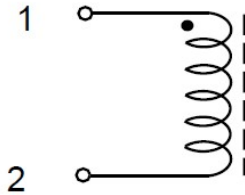


- Note: 1. The above PCB layout reference only.
 2. Marking: Inductance Code

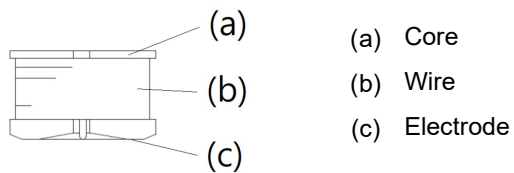
A	B	C	G	H	I
5.20±0.30	5.80±0.30	4.50±0.35	1.70 Ref	5.50 Ref	2.15 Ref

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 ΔT 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
PDC0504330MZF	33.0±10%	1V/2.52MHz	0.230	0.88	0.70
PDC0504390MZF	39.0±10%	1V/2.52MHz	0.320	0.80	0.65
PDC0504470MZF	47.0±10%	1V/2.52MHz	0.370	0.72	0.60
PDC0504560MZF	56.0±10%	1V/2.52MHz	0.420	0.68	0.55
PDC0504680MZF	68.0±10%	1V/2.52MHz	0.460	0.61	0.50
PDC0504820MZF	82.0±10%	1V/2.52MHz	0.600	0.58	0.47
PDC0504101MZF	100.0±10%	1V/1kHz	0.700	0.52	0.42
PDC0504121MZF	120.0±10%	1V/1kHz	0.930	0.48	0.40
PDC0504151MZF	150.0±10%	1V/1kHz	1.100	0.40	0.32
PDC0504181MZF	180.0±10%	1V/1kHz	1.380	0.38	0.30
PDC0504221MZF	220.0±10%	1V/1kHz	1.570	0.35	0.28
PDC0504102MZF	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

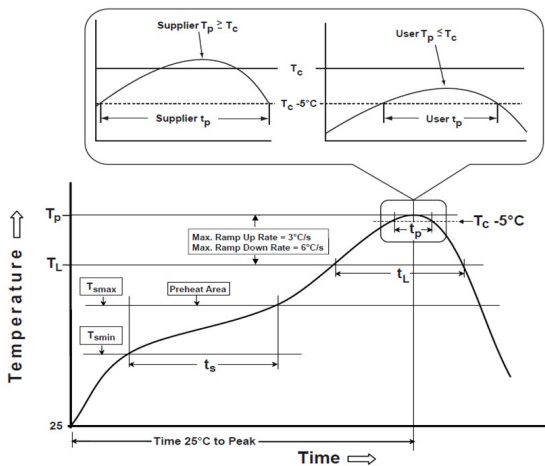
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

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).

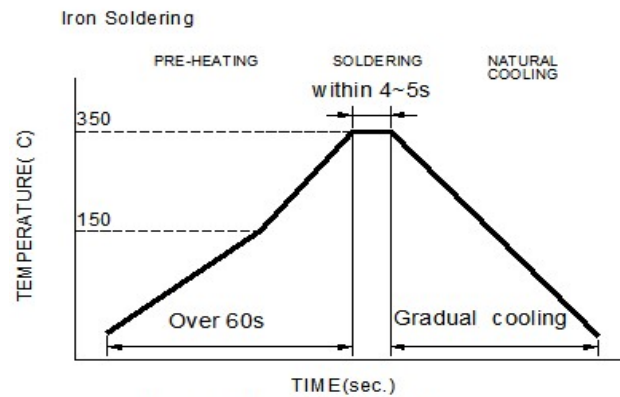
Note:

- (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



Iron Soldering times: 1 times max.

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)

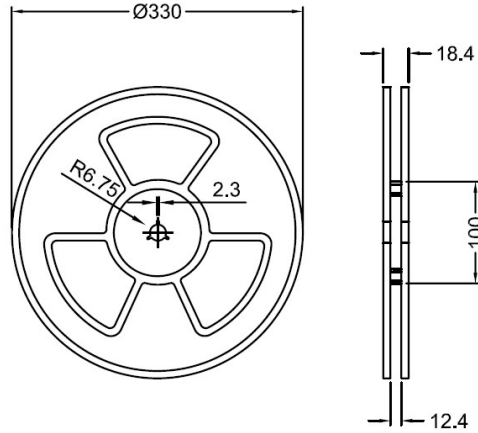
	Package Thickness	Volume mm^3 <350	Volume mm^3 350-2000	Volume mm^3 >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	$\geq 2.5\text{mm}$	250°C	245°C	245°C

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

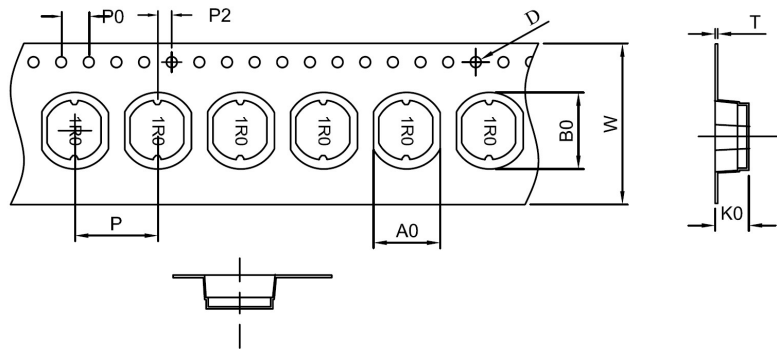
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8. Packaging Information

8-1. Reel Dimension (Unit: mm)



8-2. Tape Dimension (Unit: mm)



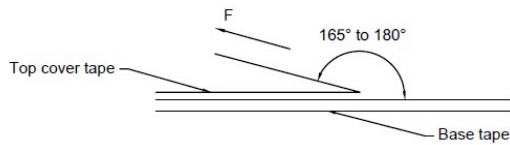
W	A0	B0	K0	P
12.0+0.3/-0.1	5.5±0.1	6.0±0.1	4.7±0.1	8.0±0.1
D	P0	P2	T	-
1.5+0.1/-0.0	4.0±0.1	2.0±0.1	0.4 Ref	-

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8-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	3,000
Inner Box	15,000
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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