

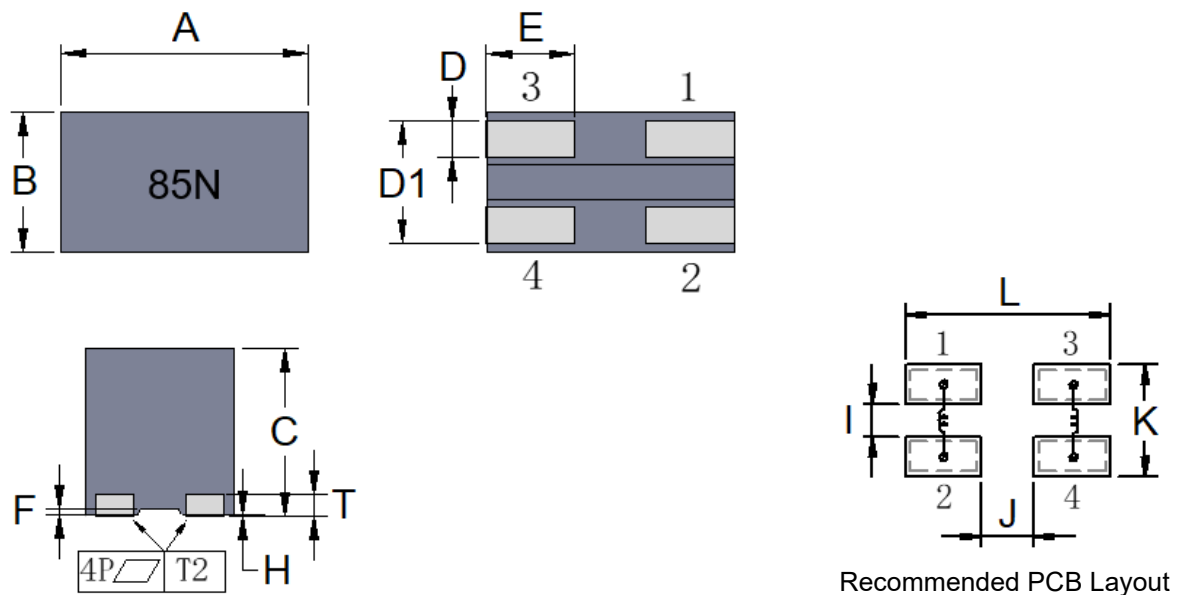
## 1. Part No. Expression

**P B P 8 0 5 0 6 0 P 4 8 5 N M**

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

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

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

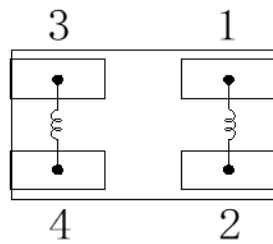


- Note:
1. The above PCB layout reference only.
  2. Recommend solder paste thickness at 0.15 mm and above.
  3. Marking: Inductance Code, Black

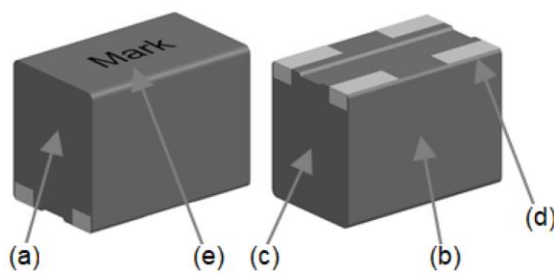
| A           | B           | C           | D           | D1          | E           | F           |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 7.800±0.200 | 4.800±0.100 | 5.800±0.200 | 1.200±0.200 | 4.100±0.200 | 2.650±0.200 | 0.300±0.100 |
| H           | T           | 4P □ T2     | L           | K           | I           | J           |
| 0.003~0.150 | 0.700±0.300 | < 0.100     | 8.200 Ref   | 4.500 Ref   | 1.300 Ref   | 2.100 Ref   |

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

### 3. Schematic



### 4. Material List



| NO  | Item     |
|-----|----------|
| (a) | Core     |
| (b) | Clip     |
| (c) | Paint    |
| (d) | Terminal |
| (e) | Ink      |

### 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) Heat Rated Current ( $I_{rms}$ ) will cause the coil temperature rise approximately  $\Delta T$  of 40°C.
- (e) Saturation Current ( $I_{sat}$ ) will cause inductance  $L_0$  to drop approximately 30%.
- (f) Rated DC Current: The lower value of  $I_{rms}$  and  $I_{sat}$ .
- (g) Part Temperature (Ambient + Temp. Rise): Should not exceed 125°C under worst case operating conditions.
- (h) Storage Condition (Component in its packaging)
  - i) Temperature: Less than 40°C
  - ii) Humidity: Less than 85% RH

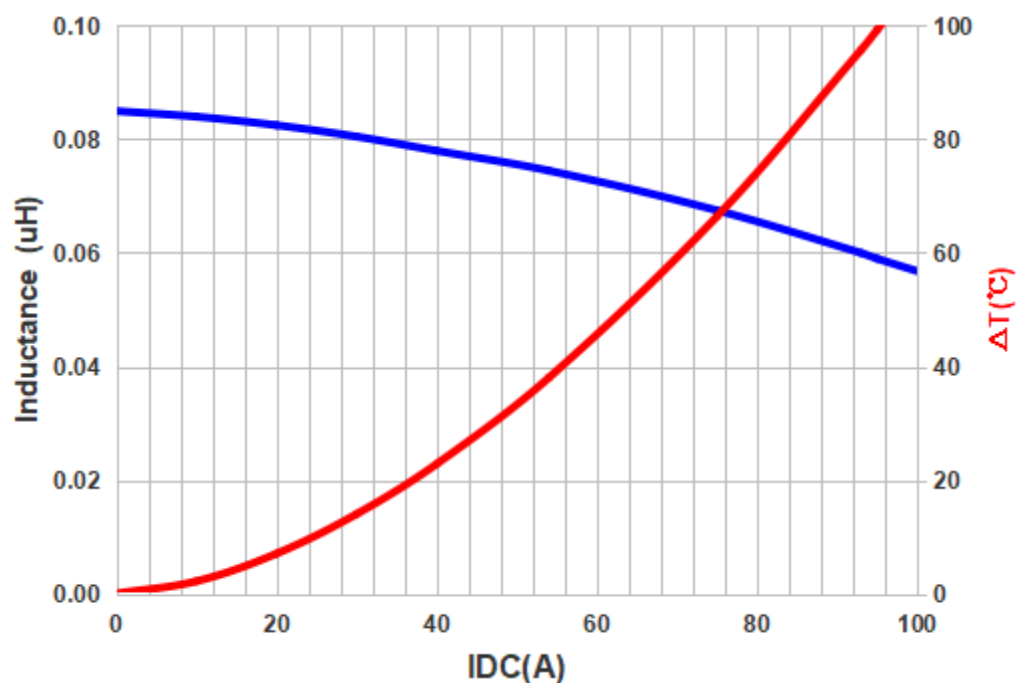
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## 6. Electrical Characteristics

| Part Number     | Electrode pin position | Inductance ( $\mu\text{H}$ ) @0A<br>$\pm 20\%$ | I <sub>rms</sub> (A) |      | I <sub>sat</sub> (A) |      | DCR (m $\Omega$ ) |      |
|-----------------|------------------------|------------------------------------------------|----------------------|------|----------------------|------|-------------------|------|
|                 |                        |                                                | Typ                  | Max  | Typ                  | Max  | Typ               | Max  |
| PBP805060P485NM | P1-2 , P3-4            | 0.085                                          | 54.0                 | 50.0 | 93.0                 | 80.0 | 0.28              | 0.33 |

Test frequency: 1.0V/100KHz

## 7. Characteristics Curve



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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

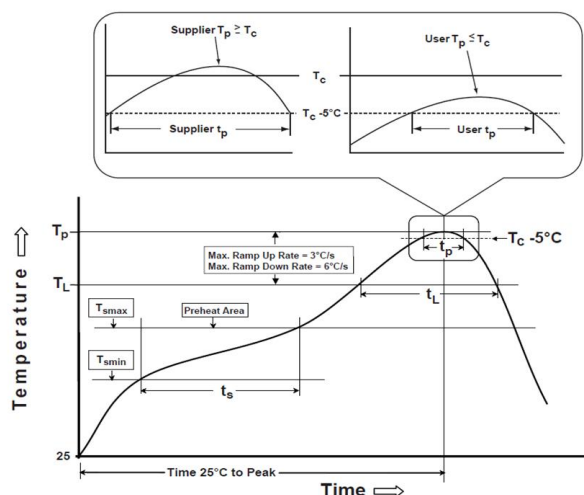
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

### 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).

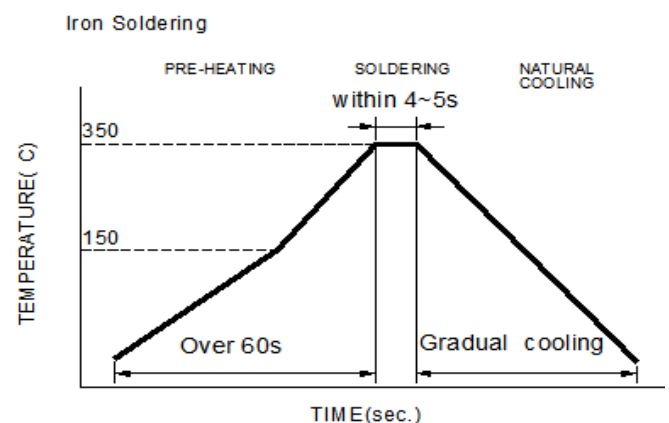
Note:

- 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<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 ( $T_c$ )

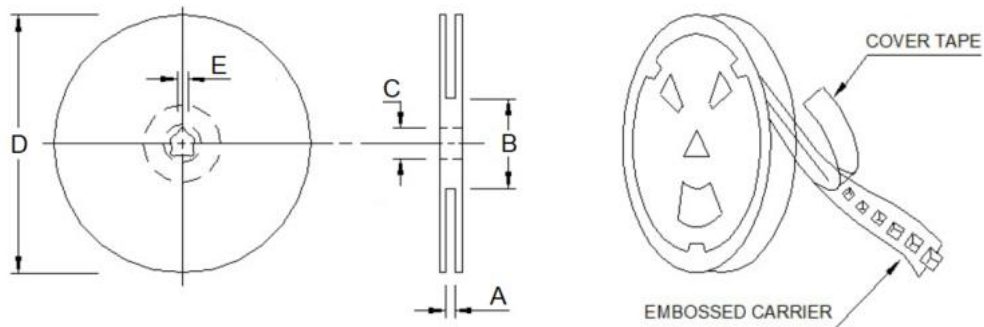
|                  | Package Thickness | Volume mm <sup>3</sup> <350 | Volume mm <sup>3</sup> 350-2000 | Volume mm <sup>3</sup> >2000 |
|------------------|-------------------|-----------------------------|---------------------------------|------------------------------|
| PB-Free Assembly | <1.6mm            | 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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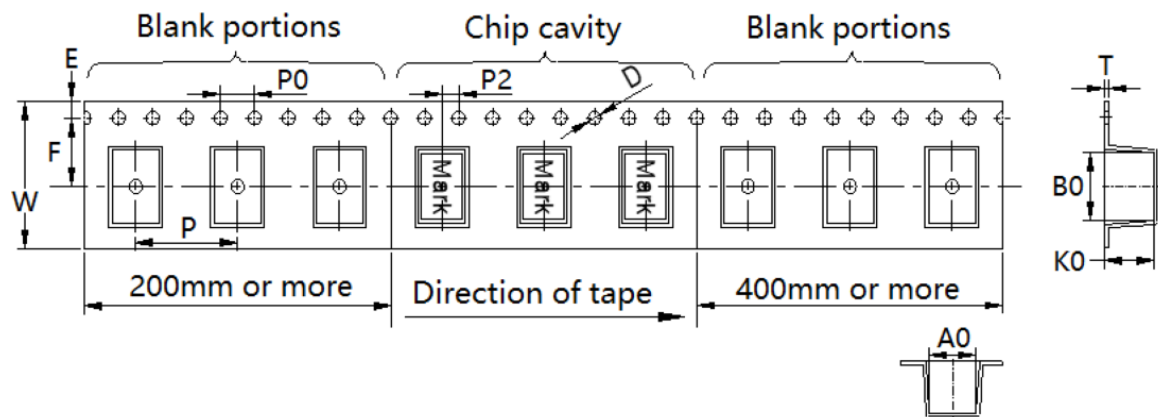
## 9. Packaging Information

### 9-1. Reel Dimension (Unit: mm)



| Type     | A             | B         | C             | D     | E       |
|----------|---------------|-----------|---------------|-------|---------|
| 13"x16mm | 16.4+2.0/-0.0 | 100.0±2.0 | 13.0+0.5/-0.2 | 330.0 | 2.0±0.5 |

### 9-2. Tape Dimension (Unit: mm)

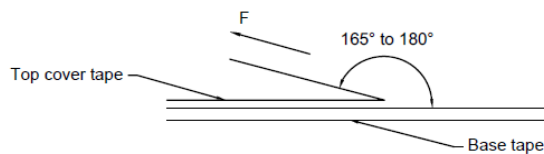


| B0         | A0        | K0        | P          | P0        | P2        |
|------------|-----------|-----------|------------|-----------|-----------|
| 8.60 Ref   | 5.60 Ref  | 6.30 Ref  | 12.00±0.10 | 4.00±0.10 | 2.00±0.10 |
| W          | F         | E         | T          | D         | -         |
| 16.00±0.30 | 7.50±0.10 | 1.75±0.10 | 0.50±0.05  | 1.50±0.10 | -         |

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**9-3. Packaging Quantity (Unit: Pcs)**

|            |     |
|------------|-----|
| Chip/ Reel | 600 |
|------------|-----|

**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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