

# PRODUCT SPECIFICATION

SPEC. NO: T-0627-131C

DATE: Aug. 21, 2018

CUSTOMER'S PRODUCT NAME:

EMTEK PRODUCT NAME:

PIS2D18HP-Series

THIS SPECIFICATION IS:

- FULLY ACCEPTED
- DENIED
- ACCEPTED UNDER THE FOLLOWING CONDITIONS



SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

NAME(PRINT): \_\_\_\_\_

TITLE: \_\_\_\_\_

 **EMTEK CO., LTD.**

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## 1. Scope

This specification applies Ferrite Power Inductance PIS2D18HP-Series to be delivered to user.

## 2. Product Identification

PIS 2D18HP - 6R8 □ - T

(1) (2) (3) (4) (5)

(1) Product name

(2) Shapes and dimensions

(3) Inductance

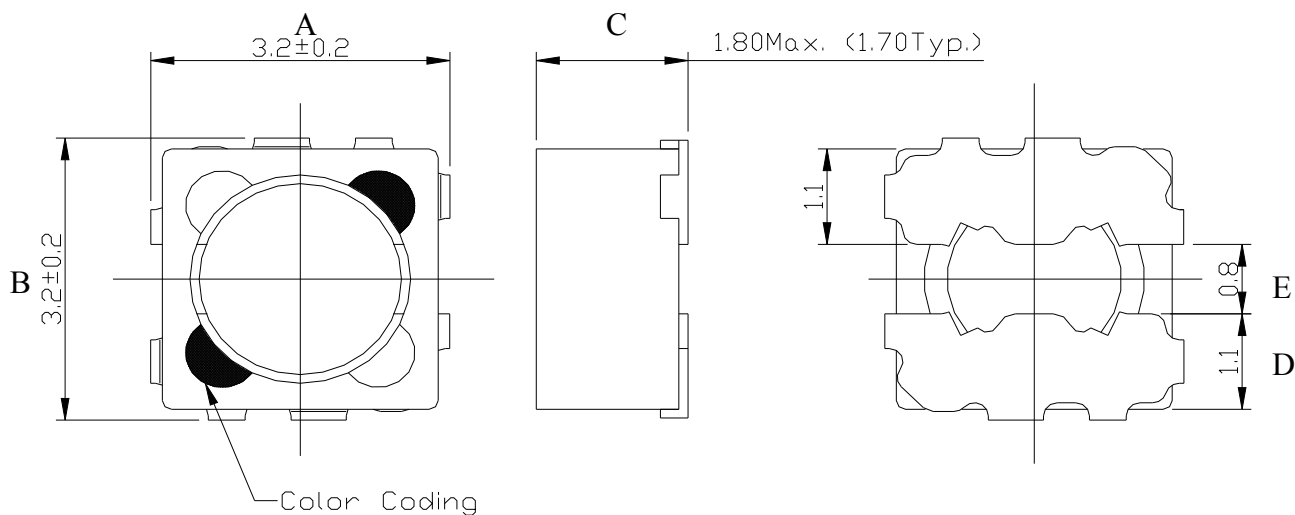
6R8 : 6.8 uH

(4) Tolerance

M=±20% , N=±30%

(5) Taping Type

## 3. Shapes and Dimensions



A:3.2±0.2 mm

B:3.2±0.2 mm

C:1.80 Max. (1.70Typ.)mm

D:1.10 mm

E:0.80 mm

Drawn by	Checked by	Approved by
Cindy Apr.14.2016	Zheny Apr.14.2016	Lu Apr.14.2016

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## 4. Electrical Characteristics

Customer Part Number	Our Product Part Number	Inductance (uH)/KHz	Inductance Tolerance	Rdc Typ (Ω)	Idc Typ (mA)		Irms Typ (mA) T ↑ 25°C	Color Coding
					L ↓ 10%	L ↓ 35%		
	PIS2D18HP-1R0□-T	1.0/1	M	0.045	2600	3000	2000	Black
			N					
	PIS2D18HP-1R5□-T	1.5/1	M	0.070	2100	2400	1900	Orange
			N					
	PIS2D18HP-1R8□-T	1.8/1	M	0.078	2000	2300	1760	Brown
			N					
	PIS2D18HP-2R2□-T	2.2/1	M	0.090	1800	2140	1440	Red
			N					
	PIS2D18HP-2R7□-T	2.7/1	M	0.103	1700	1900	1350	Black
			N					
	PIS2D18HP-3R3□-T	3.3/1	M	0.103	1500	1800	1100	Orange
			N					
	PIS2D18HP-3R9□-T	3.9/1	M	0.135	1500	1780	1050	Yellow
			N					
	PIS2D18HP-4R7□-T	4.7/1	M	0.152	1400	1600	1000	Black
			N					
	PIS2D18HP-5R6□-T	5.6/1	M	0.198	1200	1400	1000	Blue
			N					
	PIS2D18HP-6R8□-T	6.8/1	M	0.223	1200	1400	950	Brown
			N					
	PIS2D18HP-100□-T	10.0/1	M	0.360	920	1020	780	Red
			N					
	PIS2D18HP-120□-T	12.0/1	M	0.410	840	980	680	Orange
			N					
	PIS2D18HP-150□-T	15.0/1	M	0.622	800	900	620	Yellow
			N					
	PIS2D18HP-220□-T	22.0/1	M	0.750	640	740	450	Black
			N					
	PIS2D18HP-270□-T	27.0/1	M	1.100	520	600	440	Blue
			N					
	PIS2D18HP-330□-T	33.0/1	M	1.125	470	520	420	Brown
			N					
	PIS2D18HP-470□-T	47.0/1	M	1.820	390	430	400	Red
			N					

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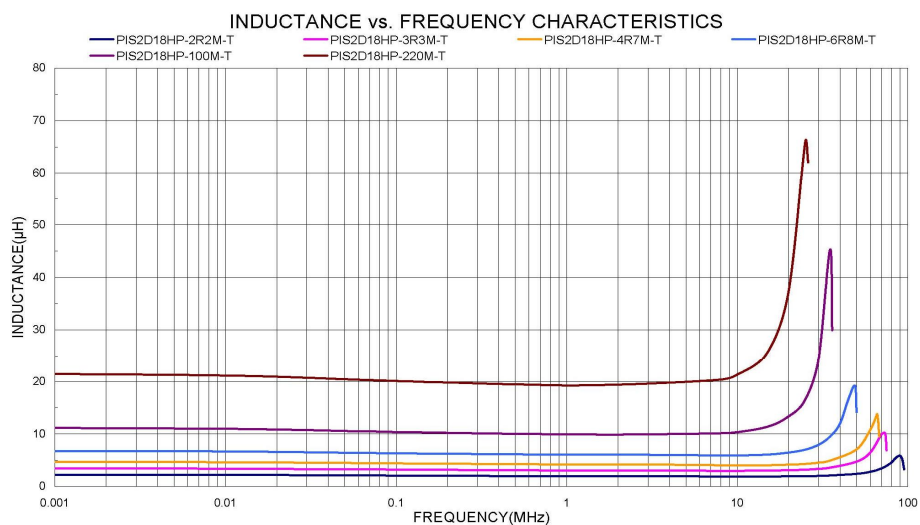
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## 4. Electrical Characteristics

Customer Part Number	Our Product Part Number	Inductance (uH)/KHz	Inductance Tolerance	Rdc Typ (Ω)	Idc Typ (mA)		Irms Typ (mA) T ↑ 25°C	Color Coding
					L ↓ 10%	L ↓ 35%		
	PIS2D18HP-680□-T	68.0/1	M	2.650	350	390	340	Orange
			N					
	PIS2D18HP-101□-T	100.0/1	M	3.200	300	330	300	Black
			N					
	PIS2D18HP-221□-T	220.0/1	M	10.450	180	200	180	Yellow
			N					
	PIS2D18HP-331□-T	330.0/1	M	13	130	150	120	Green
			N					

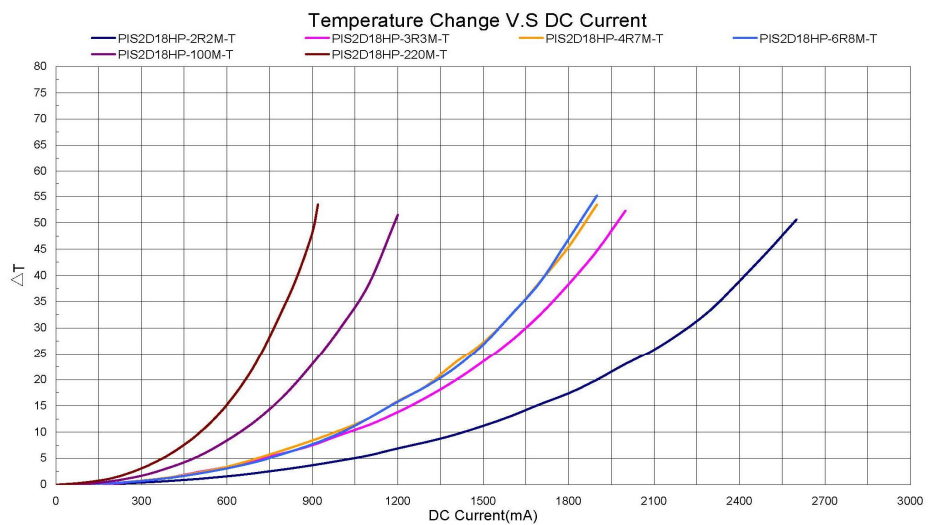
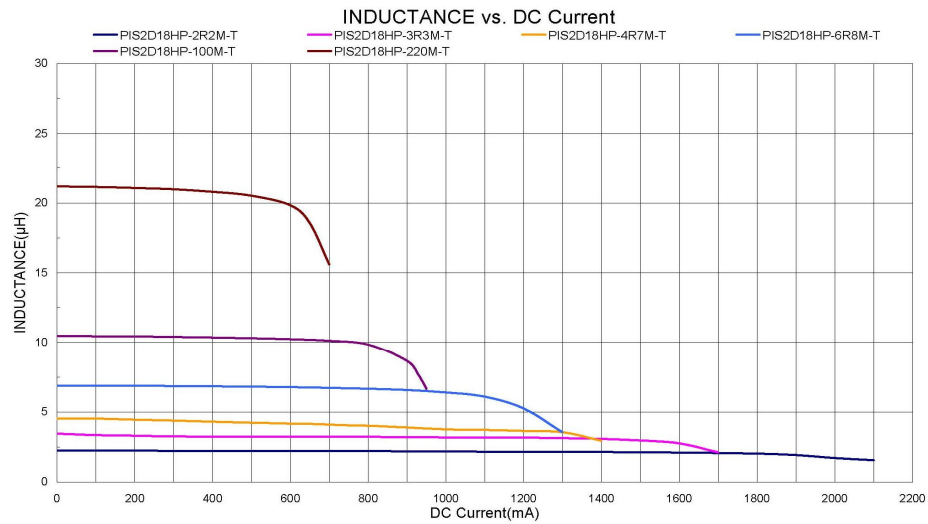
- When ordering, please specify tolerance and packaging codes. Ex: PIS2D18HP-3R3M-T  
Tolerance : M=20% , N = 30%  
Packaging : Clear tape and reel { standard }.
- L, Idc : Agilent/HP 4284A Precision LCR Meter , 1KHz with 1V.
- Rdc : Chroma Milliohmmeter 16502, or equivalent. (Typ: ±30% tolerance)
- Idc for Inductance drop 10% or 35% from its value without current.
- Irms for a 25°C rise above 25°C ambient.
- Operating temperature range from -25°C to 105°C.



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## 5. Material list

Item	Material
Core	Ferrite core
Wire	Copper wire
Epoxy	Epoxy
Base	Copper
Terminal	Cu / Ni / Sn

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## 6. Reliability Test

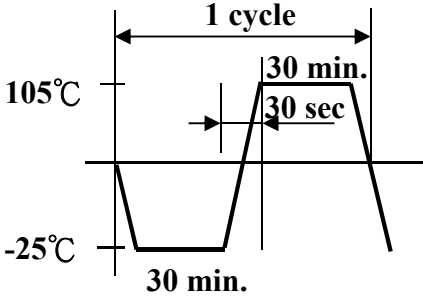
Item	Specifications	Test conditions
Solderability	The metalized area must have 90% minimum solder coverage.	Dip pads in flux and dip in solder pot( 96.5 Sn/3.5 Ag solder) at 255°C ±5°C.
Resistance to soldering heat	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be reflowed onto a PC board using 96.5 Sn/3.5 Ag solder paste. Solder process shall be at a maximum temperature of 260°C. For 96.5 Sn/3.5 Ag solder paste:>217°C for 90 seconds
High temperature resistance	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature 105±2°C for 50±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Static Humidity	Inductors must not have a shorted or openwinding.	Inductors shall be subjected to temperature 85±2°C and 90 to 95%RH. for ten 24-hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Component adhesion (push test)	Inductors shall be subjected to 0.5Kg	Inductors shall be reflow soldered (255°C ±5°C for 10 seconds) to a tinned copper substrate. A force gauge shall be applied to the side of the component. The device must withstand the stated force without a failure of the termination.

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Item	Specifications	Test conditions
Low temperature resistance	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature $-25\pm 2^{\circ}\text{C}$ for $48\pm 12$ hours. Measure the test items after leaving the inductors at room temperature and humidity for 1 to 2 hours.
Resistance to solvent	There must be no case deformation, change in dimensions, or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.
Thermal shock	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to 10 cycles to the the following temperature cycle: <div style="text-align: center;">  </div> Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.

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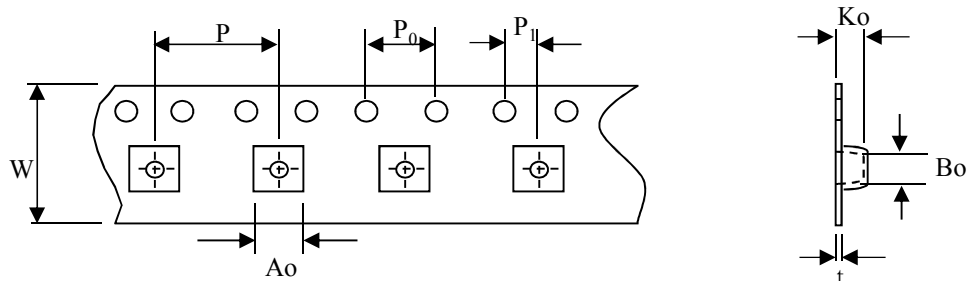
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## 7. Packaging

The packaging must be done not to receive any damage during transporting and storing.

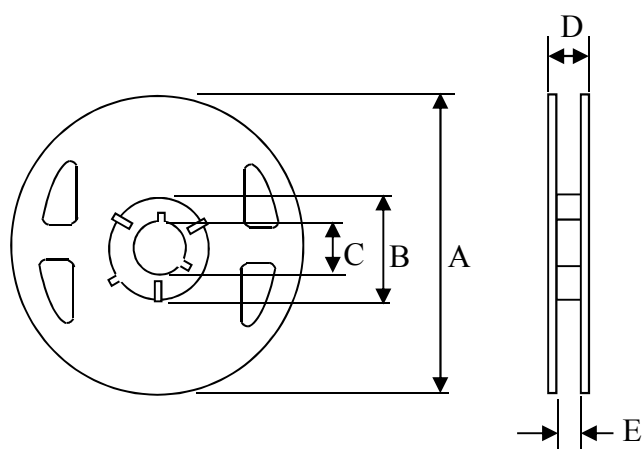
### 7-1 Tape dimensions



( Dimensions in mm; Tolerance :  $\pm 0.1$  )

Symbol	W	P	P <sub>0</sub>	P <sub>1</sub>	A <sub>0</sub>	Bo	Ko	t
Dimension	12	8	4	2	3.5	3.5	1.9	0.25

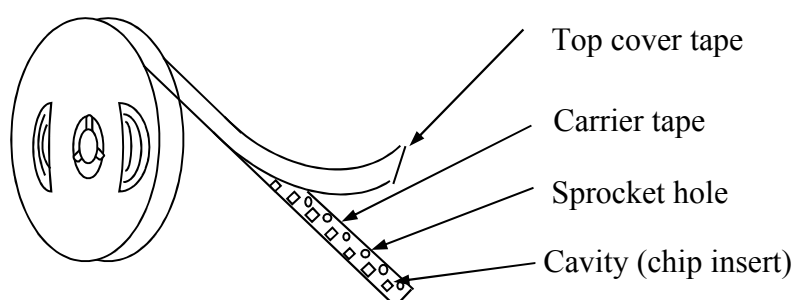
### 7-2 Reel dimensions



( Dimensions in mm )

Symbol	T
A	180
B	60
C	13
D	16
E	13.2

### 7-3 Tapping figure





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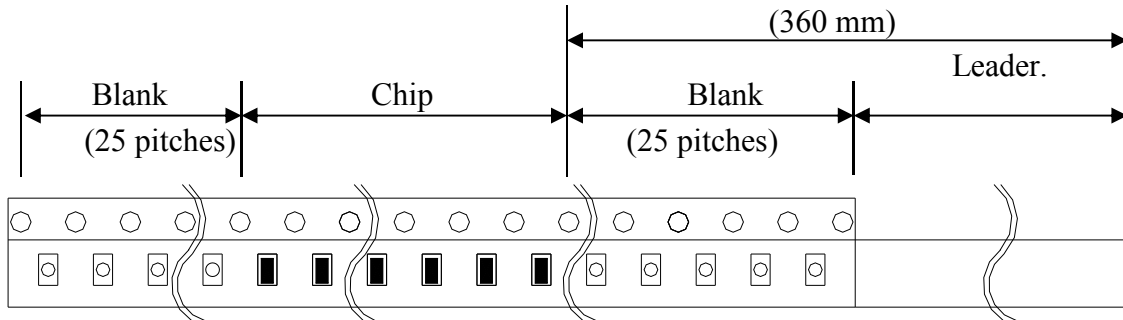
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## 7-4 Packaging Form

There shall not continuation more than two vacancies of the product.



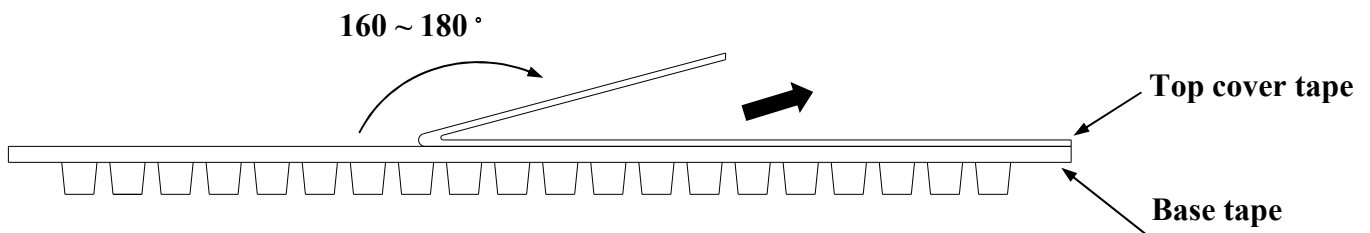
## 7-5 Cover Tape Peel Strength

The force for tearing off cover tape is 0.1~0.6(N) in the arrow direction at the following conditions:

Temperature : 5 ~ 35°C

Humidity : 45 ~ 85%

Atmospheric pressure : 860 ~ 1060 hpa



## 7-6 Packing Quantity

φ180 mm reel type : 1,000 pcs./reel

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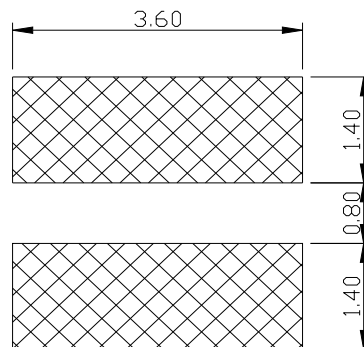
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## 8. Recommended Soldering Conditions (Please use this product by reflow soldering)

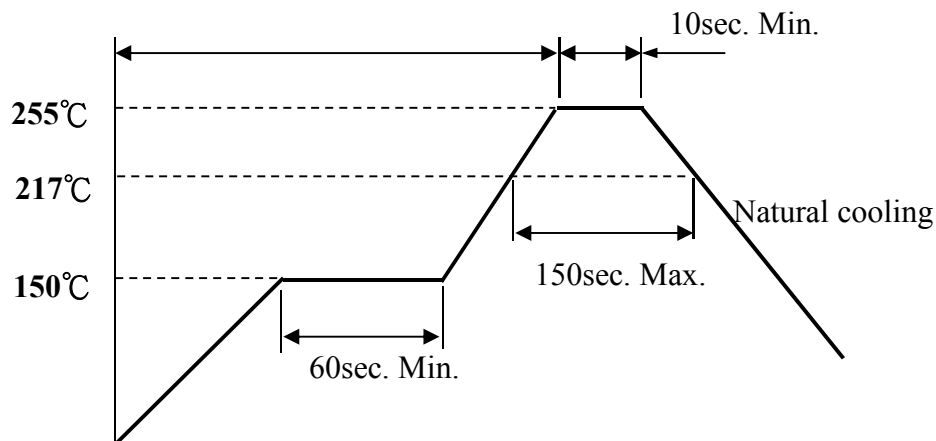
### 8-1 Recommended Footprint



Unit: mm

### 8-2 Recommended Reflow Pattern

Reflow : until two times



### 8-3 Iron Soldering

Use a solder iron of less than 30W when soldering, do not allow the soldering iron tip directly touch the Ceramic body outside of terminal electrode.

5 seconds max. at 260°C.

## 9. Attention in Case of Using

In case of using product, please avoid following matters:

Splashing water or salt water

Dew condenses

Toxic gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)

Vibrations or shocks which exceed the specified condition

Please be careful for the stress to this product by board flexure or something after the mounting.

## 10. Others

10-1 Operating temperature range : Ferrite Series : -25~+105°C

10-2 Storage condition : Temperature 20°~25°C, Relative Humidity 40%~60%

10-3 Recommended wire wound inductors should be used within 6 months from the time of delivery.