1. Scope

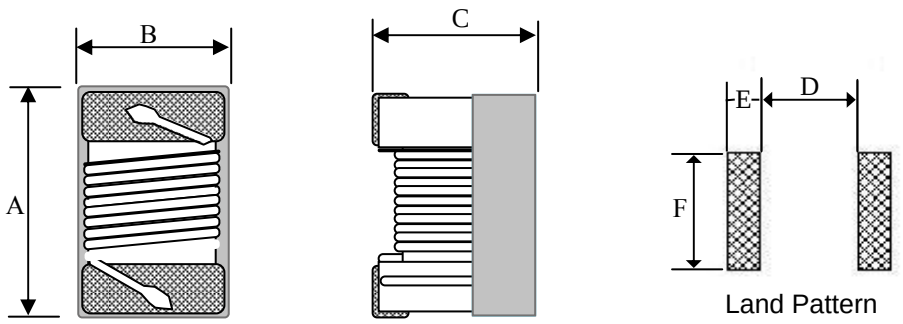
This specification applies wire wound power inductors MWPE0603D-220K-T to be delivered to user.

2. Product Identification

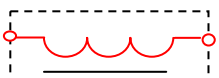
MWPE 0603 D - 220 □ - T

- T → Taping Type
- □ → Tolerance J=±5% K=±10% M=±20%
- 220 → Inductance 220 : 22uH
- D → Internal Code
- 0603 → Shapes and dimensions
- MWPE → Product name

3. Shapes and Dimensions



Equivalent circuit



No Polarity

A	max.	: 1.80	mm
B	max.	: 1.25	mm
C	max.	: 1.20	mm
D	ref.	: 0.64	mm
E	ref.	: 0.64	mm
F	ref.	: 1.02	mm

4. Test Instruments

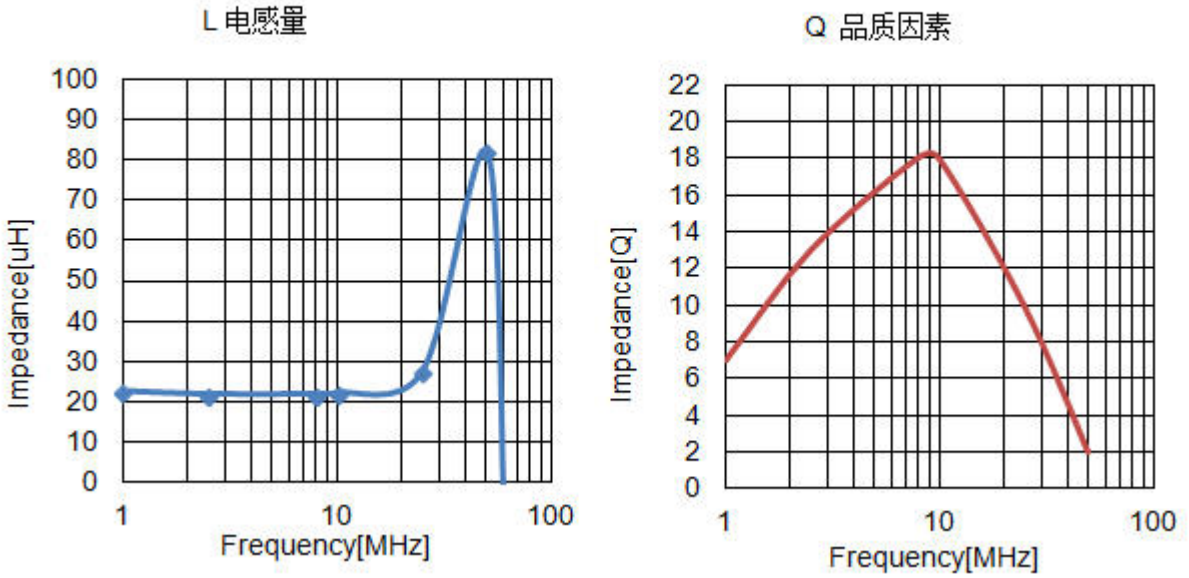
ITEM	SPEC. RANGE	TEST FREQ.	TEST INSTRUMENTS
L (μH)	22±10%	2.5 MHz	HP4286A
Q(品质系数)	10 MIN	2.5 MHz	
DCR (Ω)	12 MAX		502BC
Irms (mA)	100 MAX		VR116+VR7210
SRF (MHz)	10 MIN		E5071C ENA

a. Storage temp.: -40℃ ~ +85℃,R.H.: 30% ~ 70%,Operating temp.: -40℃ ~ +85℃

b. Moisture sensitivity level (MSL) 2 (1 year floor life at ＜30℃/85% relative humidity).

c. Failures in time(FIT)/Mean Time Between Failures(MTBF) 38 per billion hours/26,315,789 hours,calculated per Telcordia SR-332.

5. Electrical Characteristics

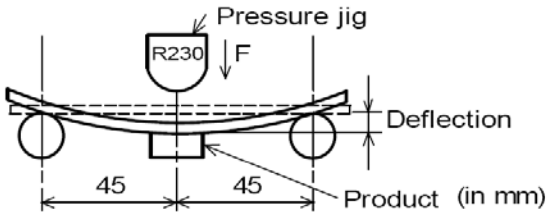


6. Test Data For Samples

TEST ITEM	L	Q(品质系数)	DCR	A	B	C
	(μH)	(min)	(Ω)	(mm)	(mm)	(mm)
CON.	2.5MHz	2.5MHz	At 25℃	1.8MAX	1.25MAX	1.2MAX
SPEC.	22±10%	10 MIN	12 MAX			
1	22.12	14.0	9.00	1.71	1.16	1.11
2	21.88	16.0	9.02	1.69	1.15	1.10
3	21.95	15.0	9.00	1.69	1.17	1.12
4	21.97	14.0	9.00	1.70	1.17	1.10
5	22.11	14.0	9.01	1.69	1.15	1.12
6	22.13	16.0	9.02	1.71	1.16	1.10
7	21.97	15.0	9.00	1.69	1.17	1.11
8	21.97	14.0	9.00	1.71	1.17	1.12
9	22.10	16.0	9.02	1.69	1.15	1.11
10	21.87	15.0	9.01	1.72	1.17	1.10
X	22.01	14.90	9.01	1.70	1.16	1.11

7. Reliability Test

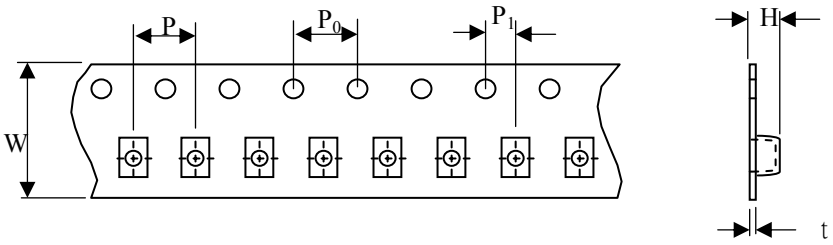
TEST ITEM	SPECIFICATION	TEST CONDITION
Rating current	According to product specifications	Current sources:33010D
Inductance	According to product specifications	Test Frequency:0.252~250MHz Test Equipment:HP4291A ,HP4286A ,HP4287A HP4284A Test Fixture:16193Aor16334A
Q	According to product specifications	Test Frequency:0.252~1500MHz Test Equipment:HP4291A,HP4286A,HP4287A, Test Fixture:16193A or 16334A
RDC	According to product specifications	Test Equipment:HP4263B
SRF	According to product specifications	Test Equipment:HP4291A Test Fixture:16193A
Solderability	The metalized area must have more then 90%of solder cove-rage	Soldering Temp:230±5℃ Dipping time:5±1S
Resistance to soldering heat	No evidence of mechanical damage, The mealized arer must have more then 75% of solder coverage . Inductance change less than ±5% Q ch-ange less than ±10% .	Soldering Temp:260±5℃ Dipping time:10±1S
Thermal Shock	No evidence of mechanical damage,Inductance change less than±5%, Q change less than±10%	A cycle contain: Step 1: -40℃,30Min Step 2: 85℃, 30Min Cycle Times:10

TEST ITEM	SPECIFICATION	TEST CONDITION
High Temperature Storage	No evidence of mechanical damage, Inductance change less than±5%, Q change less than±10%	Test Temperature:125±2℃ (Ceramic core)85±2℃ (Ferrite core) Test Time:96±2Hours
Low Temperature Storage	No evidence of mechanical damage, Inductance change less than±5%, Q change less than±10%	Test Temperature:-40±2℃ Test Time:96±2Hours
Moisture Resistance	No evidence of mechanical damage, Inductance change less than±5%, Q change less than±10%	Test Temperature:50±2℃ Test Time:100Hours relative humidity:90~95%
Vibration	No evidence of mechanical damage, Inductance change less than±5%, Q change less than±10%	Amplitude:1.5mm X Y、Z each direction for 1Hour and 45min Frequency range:10~55~10Hz(min)
Component Adhesion	No evidence of mechanical damage， No evidence of peel off or broken，keep coutinuity of Winding	Force:2Kg Test Time:5±1sec
Resistance to bend	No evidence of mechanical damage	Camber:20mm Test Board:Glass-Epoxy board Thickness:8mm 
Life	No evidence of mechanical damage, Inductance change less than±5%,Q change less than±10%	Test Temperature:85±2℃ Test Time:1000Hours with rating current

8. Packaging

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

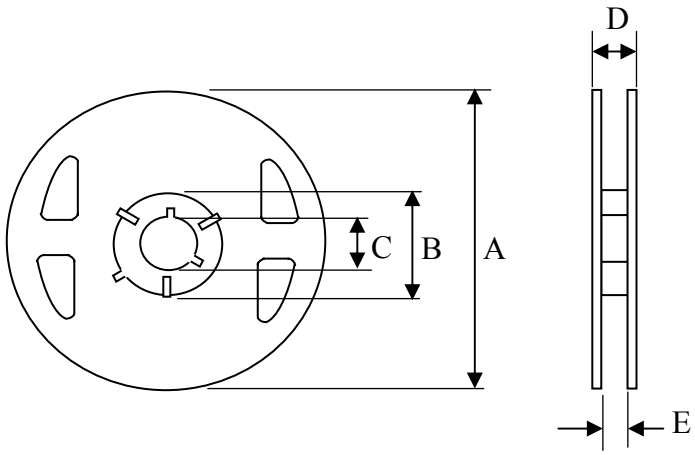
8-1 Tape dimensions



(Dimensions in mm)

Symbol	W	P	P_0	P_1	H	t
Dimension	8	2	4	2	2.0	0.23

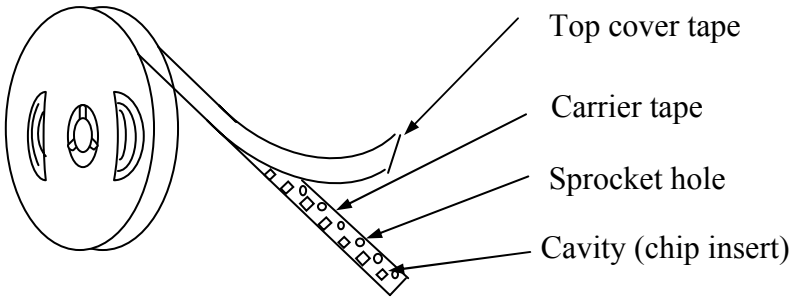
8-2 Reel dimensions



(Dimensions in mm)

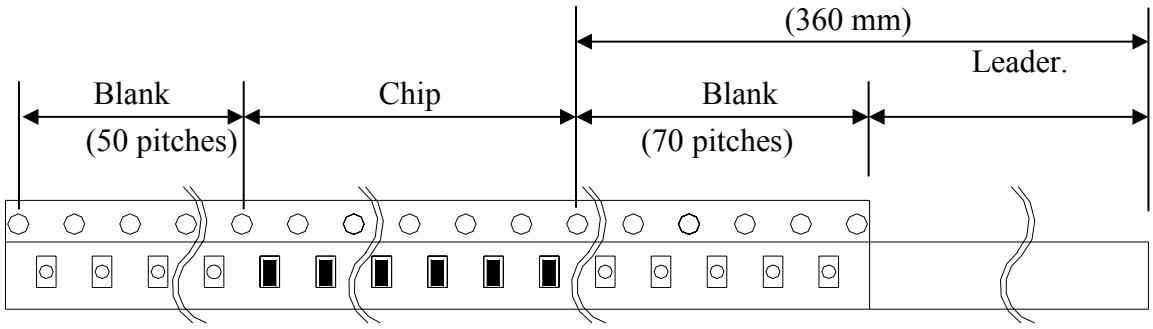
Symbol	T
A	178
B	60
C	13
D	14.4
E	10

8-3 Tapping figure



8-4 Packaging Form

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



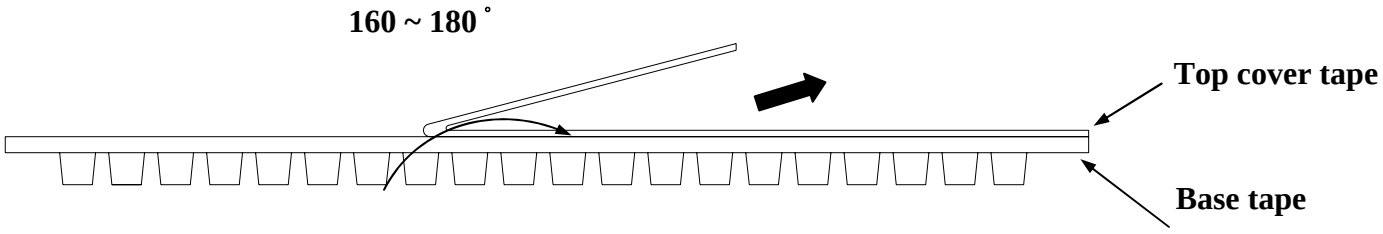
8-5 Cover Tape Peel Strength

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

Temperature : 5 ~ 35℃

Humidity : 45 ~ 85%

Atmospheric pressure : 860 ~ 1060 hpa

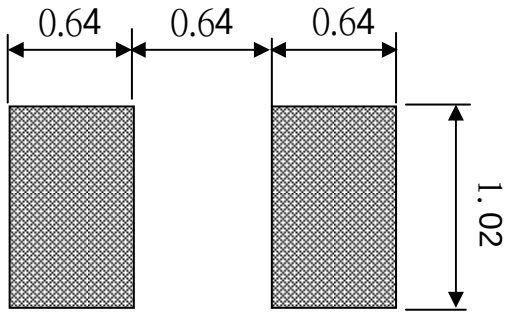


8-6 Packing Quantity

φ180 mm reel type : 2,000 pcs./reel

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

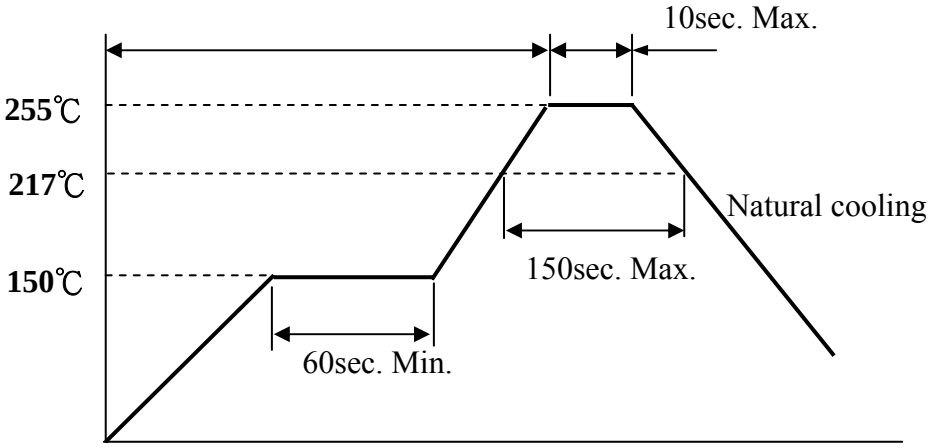
9-1 Recommended Footprint



Unit: mm

9-2 Recommended Reflow Pattern

Reflow at 260℃/3 Cycles



9-3 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.

4 seconds max. at 260℃.

10. 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.

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