SPECIFICATION

SPEC. No. TFA9NAA00213
DATE: Jan.21st,2016

To

XiangGao

CUSTOMER'S PRODUCT NAME	TDK'S PRODUCT NAME
	DPX202700DT-4069A1

RECEIPT CONFIRMATION

DATE: YEAR MONTH DAY

TDK Corporation
Sales

Electronic Components
Sales & Marketing Group

Engineering

Systems Acoustics Waves Business Group
RF Products Technology Dept.

APPROVED	Person in charge

APPROVED	CHECKED	Person in charge
H.Matsubara	*M.Tsutsumi*	*M.Matsushima*

Jan.21st,2016

TDK Corporation

Specification Change History

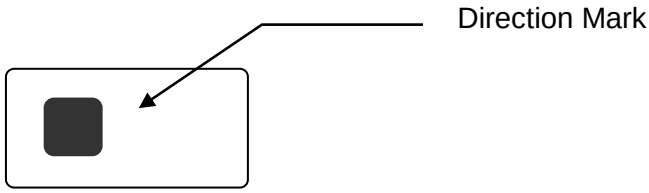
Customer's Product Name :

TDK Product Name : DPX202700DT-4069A1

Ver.	Date	Person in charge	Change Item
-	Jan.21st,2016	M.Matsushima	Initial issue

Diplexer (TDK Part Number: DPX202700DT-4069A1)
Specification

1. Marking



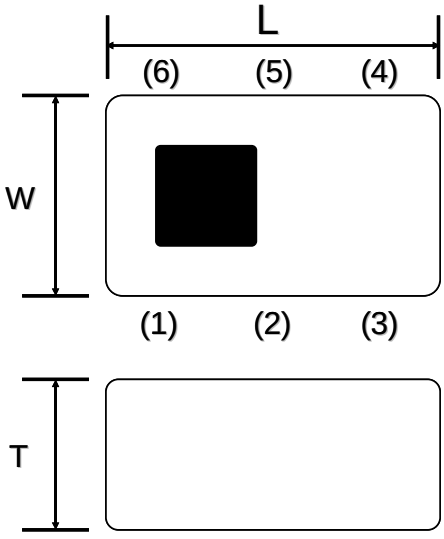
2. Mechanical Outline

2-1 Package

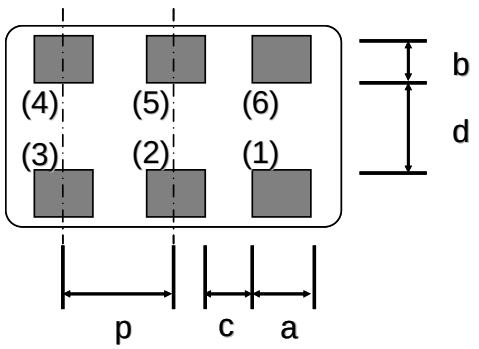
Package:	Surface mount package
Delivery medium:	Tape on reel
Soldering method:	IR-reflow
Size:	2.00 X 1.25 mm typ.
Height:	0.70 mm typ.

MECHANICAL DIMENSIONS

[Top View]



[Bottom View]



PIN Configuration

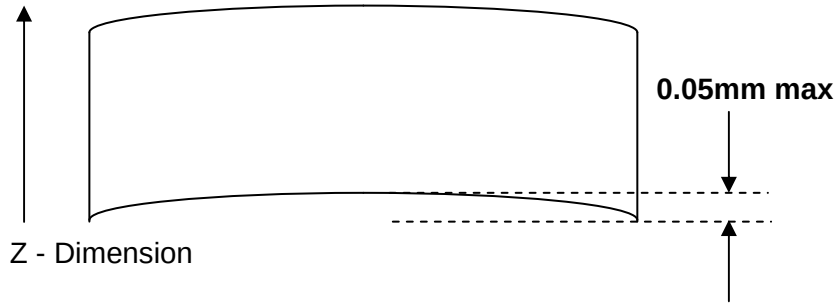
(1)	(2)	(3)	(4)	(5)	(6)
GND	Common	GND	High-Band	GND	Low-Band

Dimension (mm)

L	W	T	a	b	c	d	p
2.00 +/-0.1	1.25 +/-0.1	0.70 +/-0.1	0.35 +/-0.1	0.275 +/-0.1	0.30 +/-0.1	0.60 +/-0.1	0.65 +/-0.1

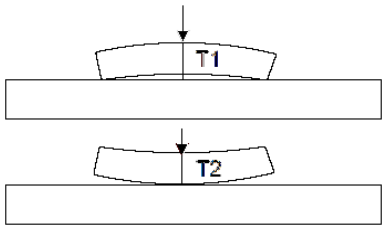
2-2 Coplanarity

0.05 mm max. difference in Z-direction as follows



Coplanarity measurement method

Coplanarity = T1-T2



Each terminal extends the full of the DPX202700DT-4069A1. Hence any coplanarity deviation between terminals is due to curvature in the substrate. TDK guarantees that the edge of each terminal is within 0.05 mm of the horizontal plane.

3. Environment (Temperature & Humidity)

3-1 Operating & Storage condition

Storage temperature range	: -40 ~ +85 ^{o}C
Operating temperature range	: -40 ~ +85 ^{o}C
Humidity	: 0 ~ 90 % RH (Max. wet bulb temperature 38 ^{o}C)

3-2 Storage condition before soldering

Temperature	: +5 ~ +30 ^{o}C
Humidity	: 20 ~ 70 % RH
Term of storage	: Within 6 months
Baking	: Unnecessary

4. Electrical Specification (Ta= +25 +/- 5 ℃)

Low-Band

Parameter	Freq. (MHz)	Spec.	Typ.	Unit
Insertion Loss	570-960	0.75	0.52	dB
Attenuation	1427-2700	20	26	dB
VSWR	570-960	2.0	1.2	
Isolation	570-960	20	22	dB

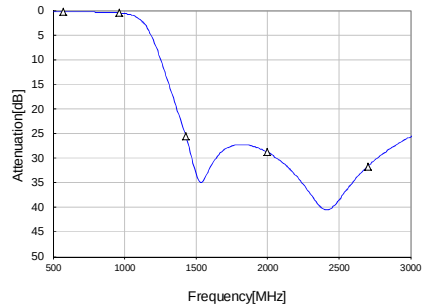
High-Band

Parameter	Freq. (MHz)	Spec.	Typ.	Unit
Insertion Loss	1427-2700	0.85	0.71	dB
Attenuation	570-960	20	22	dB
VSWR	1427-2700	2.0	1.4	
Isolation	1427-2700	20	25	dB

We recommend to terminate for all port with 50ohm at all times.

5.Typical electrical characteristics

Low band-Port **S21**



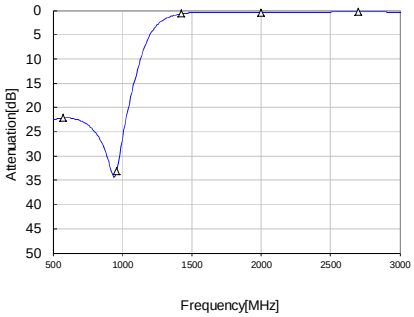
Insertion Loss

570	MHz	0.23 dB
960	MHz	0.52 dB

Attenuation

1427	MHz	25.51 dB
2000	MHz	28.82 dB
2700	MHz	31.68 dB

High band-Port **S31**

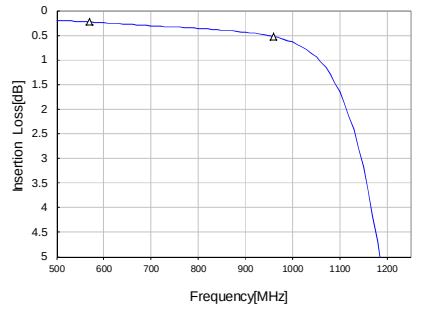


1427	MHz	0.71 dB
2000	MHz	0.47 dB
2700	MHz	0.30 dB

Attenuation

570	MHz	22.19 dB
960	MHz	33.05 dB

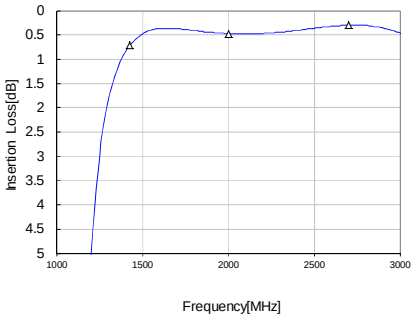
Low band-Port **S21**



Insertion Loss

570	MHz	0.23 dB
960	MHz	0.52 dB

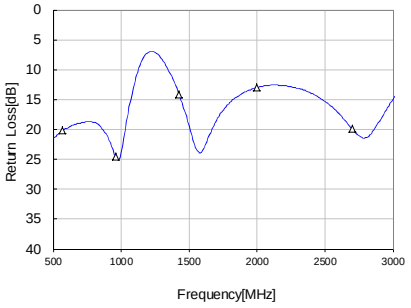
High band-Port **S31**



Insertion Loss

1427	MHz	0.71 dB
2000	MHz	0.47 dB
2700	MHz	0.30 dB

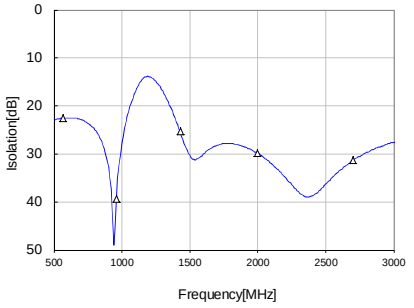
Common Port Return Loss **S11**



570	MHz	20.16 dB
960	MHz	24.58 dB

1427	MHz	14.16 dB
2000	MHz	12.97 dB
2700	MHz	19.93 dB

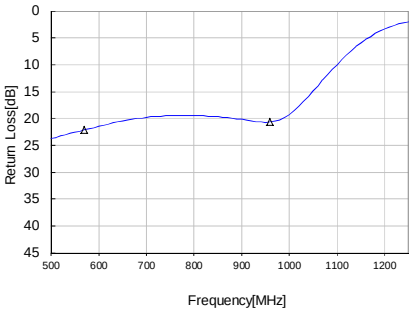
Isolation **S23**



570	MHz	22.5 dB
960	MHz	39.3 dB

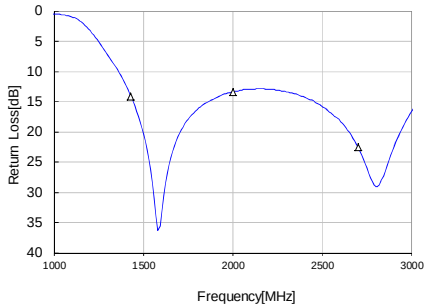
1427.9	MHz	25.3 dB
2000	MHz	29.9 dB
2700	MHz	31.4 dB

Low band-Port Return Loss **S22**



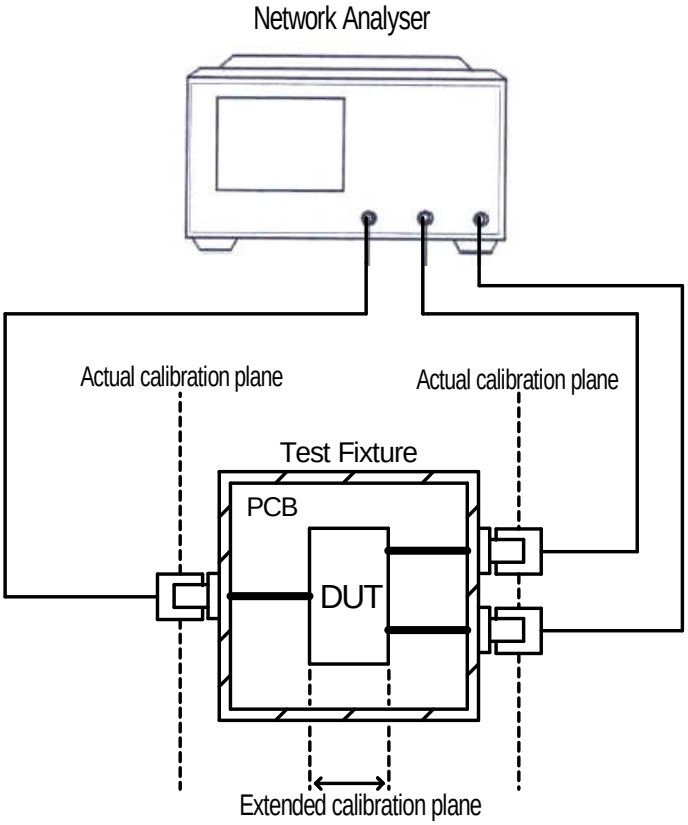
570	MHz	22.12 dB
960	MHz	20.67 dB

High band-Port Return Loss **S33**



1427	MHz	14.11 dB
2000	MHz	13.37 dB
2700	MHz	22.61 dB

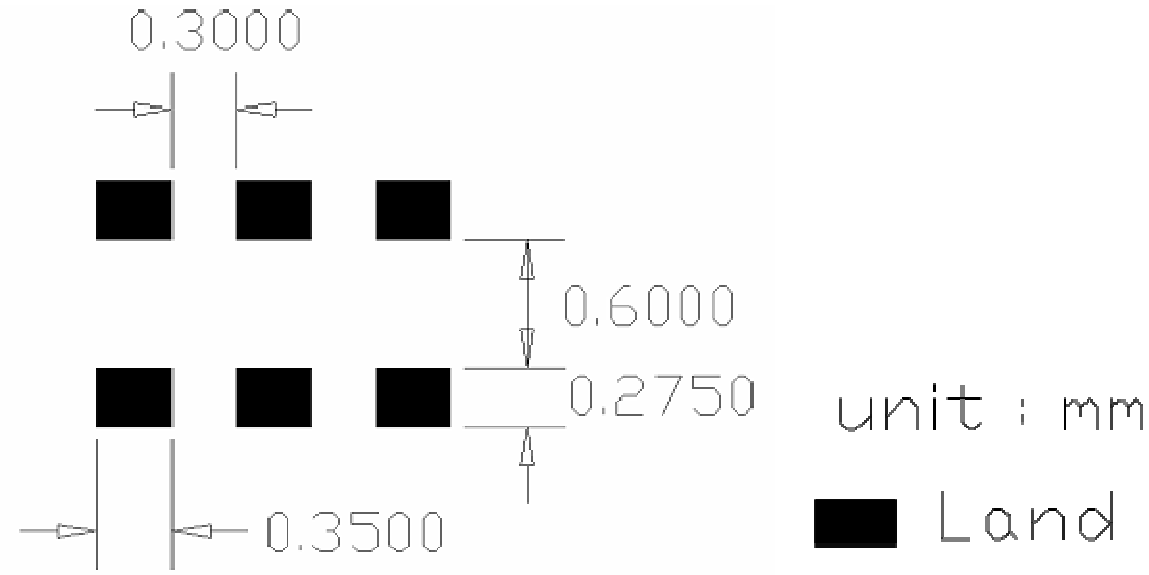
6. Test Circuit



Note 1: The Port Extension function on the Network Analyser is used to extend the calibration plane to the DUT terminals.

Note 2: Loss in the PCB traces is compensated for by measurement data taken on a PCB Thru' line.

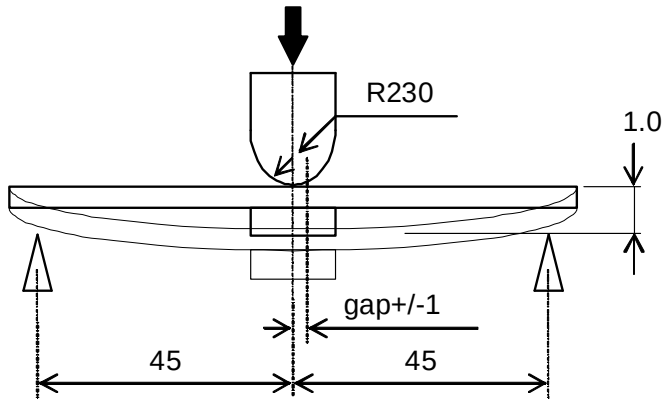
7. Evaluation PCB Pattern

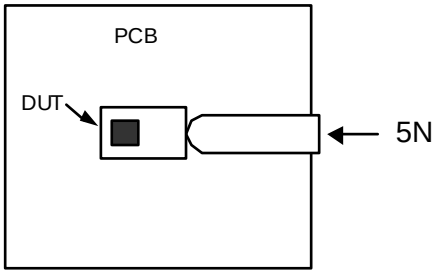


8. Environmental and quality proposal

This product satisfies the electrical specification after the following tests.
(When measured after two hours in normal conditions):

Temperature characteristics:	All data initially taken at +25℃, then repeated at -40℃ and again at +85℃.
Heat proof:	+85 ℃+/-2 ℃ for 1000 hours
Cold proof:	-40 ℃ +/-2 ℃ or 500 hours
Moisture proof:	+60 ℃ +/-2 ℃, 90 ~95% R.H. for 1000 hours
Heat shock:	-40 ~ +85 ℃ for 350 cycles each cycle being 30 min
Vibration:	10-500Hz vibration frequency (10G Max.) with 1.52mmp-p amplitude for two hours in x,y,z directions
Mechanical shock:	1.Acceleration 1000m/s2 2.Direction X, Y, Z ,X',Y',Z',axes 3.Time 6ms duration and 3 times in each direction
Solderability	The dipped surface of the terminal shall be at least 75% covered with solder after dipped in solder bath of 245 ^{o}C+/-3 ℃ for 3+/-0.5 sec. Remark solder: Sn-3.0Ag-0.5Cu Remark flux: Rosin 25%, Alcohol 75%
Solder heat shock:	It shall be possible to hot air reflow the components twice with a temperature profile shown below.
Drop shock:	Dropped onto steel plate or concrete from 100cm height three times .
Bending test:	Solder specimen components on the test printed circuit board(L:100 x w:40 x t:0.8mm) in appended recommended PCB pattern Apply the load in direction of the arrow until bending reaches 1mm for 5+/-1 sec.

<table>
<tr>
<td></td>
<td> 

Unit:mm</td>
</tr>
<tr>
<td>Board adhesion
(Push test):</td>
<td>Solder specimen components on the test printed circuit board(L:100 x w:40 x t:0.8mm) in appended recommended PCB pattern Apply the load in direction of the arrow until 5N for 5 +/-1 sec .
 
</td>
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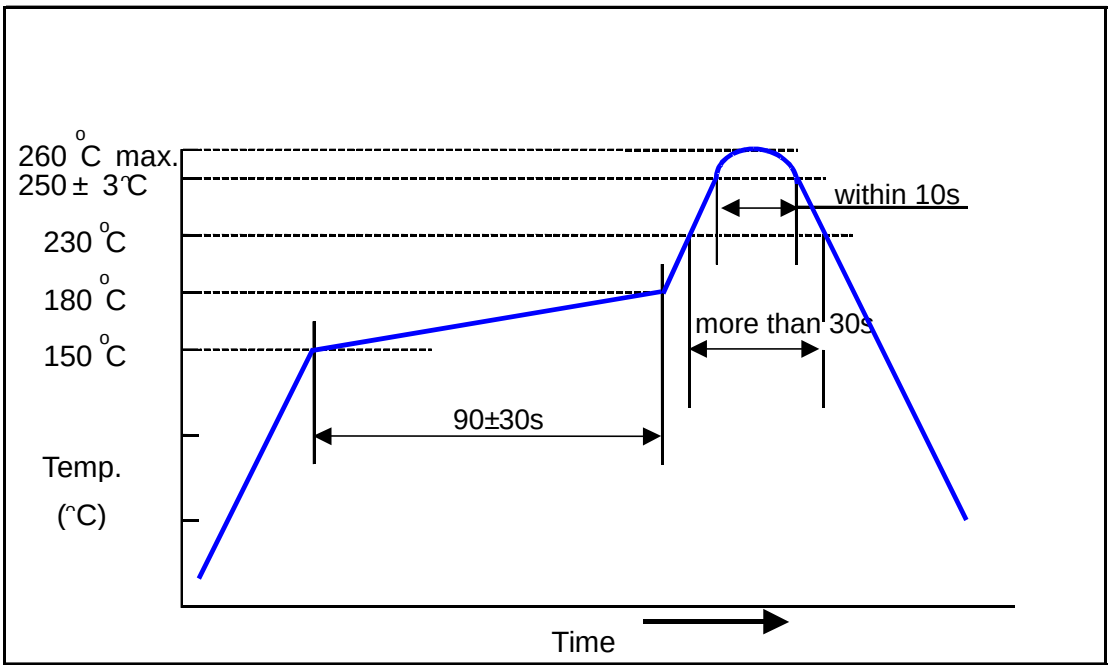
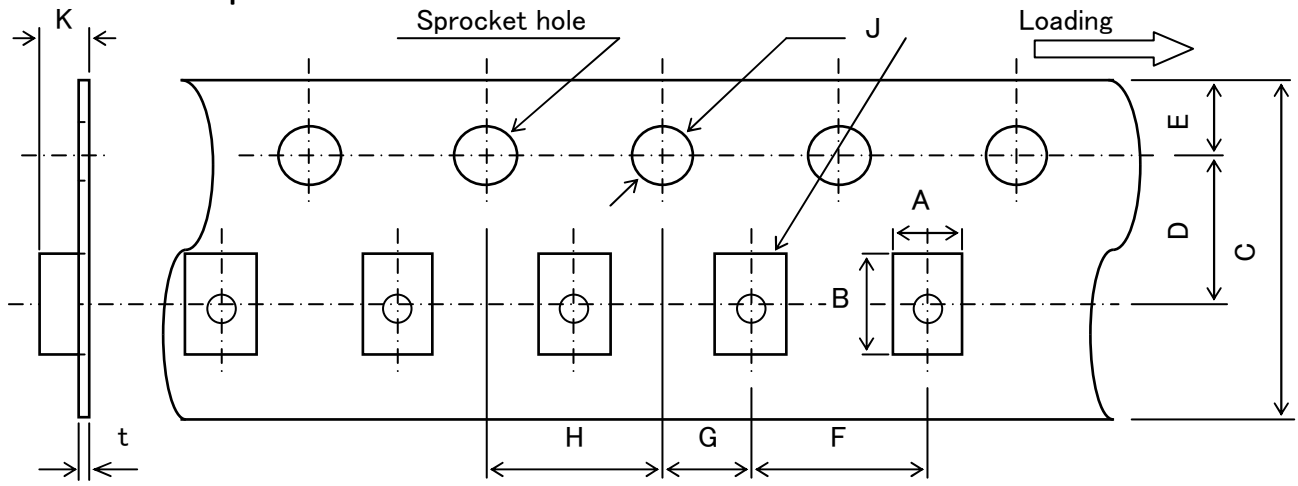
9. Recommended reflowing temperature profile

Pb free solder



10. Packing

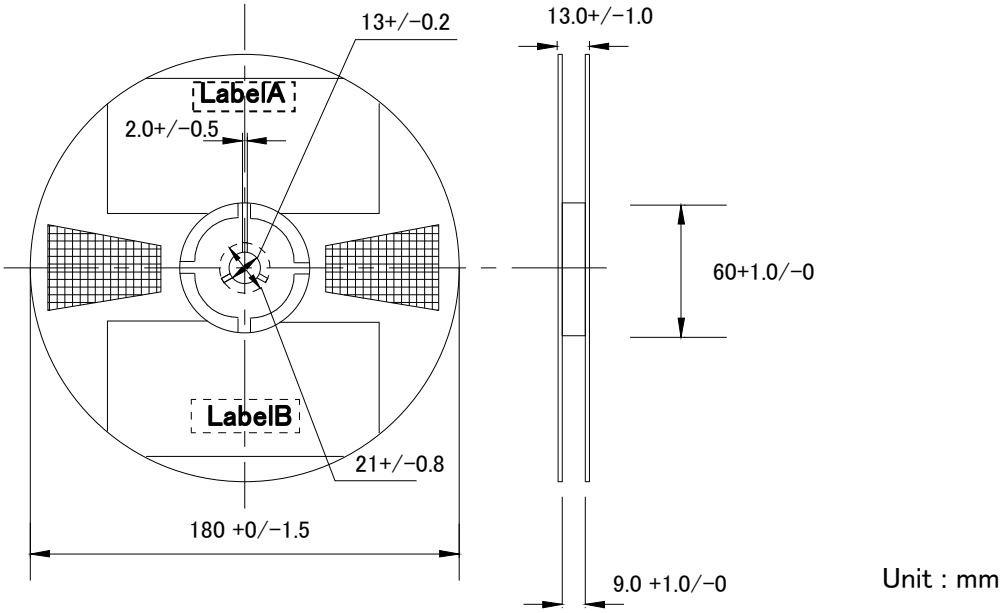
10-1. Carrier Tape



Unit : mm

A	B	C	D	E	F	G	H	J	K	t
1.45	2.25	8.0	3.5	1.75	4.0	2.0	4.0	1.55	1.05	0.25
+/−0.1	+/−0.1	+/−0.2	+/−0.05	+/−0.1	+/−0.1	+/−0.05	+/−0.1	+/−0.05	MAX	+/−0.05

10-2. Reel Dimensions



Unit : mm

10-3. Standard Reel Packaging quantities

2000pcs./reel

11. Other

The products listed on this specification sheet are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property. Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this specification sheet.

Aerospace/Aviation equipment
Transportation equipment (cars, electric trains, ships, etc.)
Medical equipment
Power-generation control equipment
Atomic energy-related equipment
Seabed equipment
Transportation control equipment
Public information-processing equipment
Military equipment
Electric heating apparatus, burning equipment
Disaster prevention/crime prevention equipment
Safety equipment
Other applications that are not considered general-purpose applications

When using this product in general-purpose applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc., to ensure higher safety.