SPECIFICATION

SPEC NO. TFA9NAA00580
DATE : Oct.23rd, 2017

To

XIAMEN XIANGGAO ELECTRONICS CO.,LTD

CUSTOMER'S PRODUCT NAME	TDK'S PRODUCT NAME
DPX255850DT-5145F1	DPX255850DT-5145F1

RECEIPT CONFIRMATION

DATE : YEAR MONTH DAY

TDK Corporation

Sales

Electronic Components Sales & Marketing Group

Engineering

Electronic Components Business Company
Communication Devices Business Group

APPROVED	PERSON IN CHARGE

APPROVED	CHECKED	PERSON IN CHARGE
N.Harada	A.Okada	H.Ashida

Specification Change History

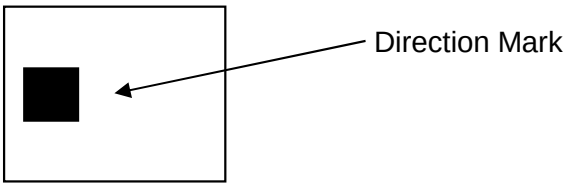
Customer's Product Name DPX255850DT-5145F1

TDK Product Name : DPX255850DT-5145F1

Ver.	Date	Person in charge	Change Item
-	Oct.23rd, 2017	H.Ashida	Initial issue (4.2)

Diplexer Specification
(TDK Part Number : DPX255850DT-5145F1)

1.Marking



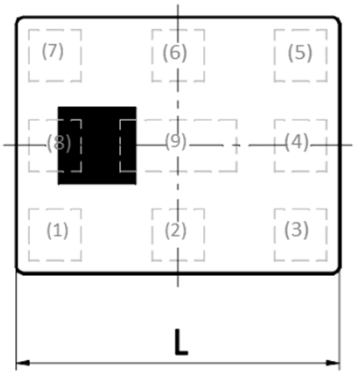
2.Mechanical Outline

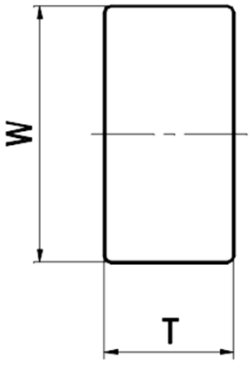
2-1 Package

Package:	Surface mount package
Delivery Medium:	Tape on reel
Soldering Method:	IR-reflow
Size:	2.50 x 2.00mm typ.
Height:	0.65 mm max.

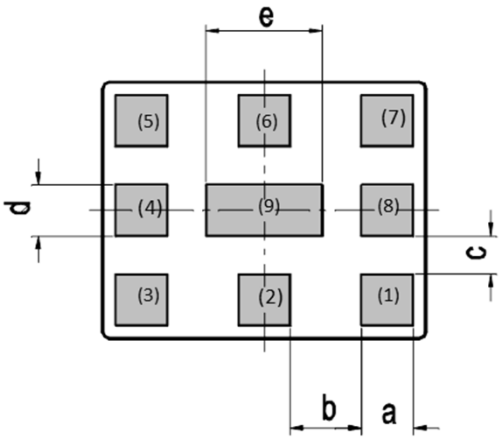
MECHANICAL DIMENSIONS

[Top View]





[Bottom View]



Dimensions (mm)

L	W	T	a	b	c	d	e
2.50 +/-0.15	2.00 +/-0.15	0.65 Max	0.40 +/-0.10	0.55 +/-0.10	0.30 +/-0.10	0.40 +/-0.10	0.90 +/-0.15

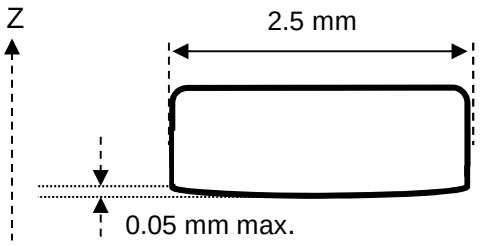
Terminal functions

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

(6)	GND
(7)	High-Band Port
(8)	GND
(9)	GND

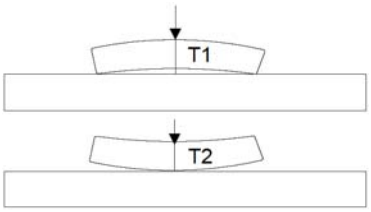
2-2 Coplanarity

0.05 mm max. difference in Z-direction as follows



Coplanarity measurement method

Coplanarity = T1-T2



Each terminal extends the full of the product. 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 % R.H. (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 12 months before opening Within 1 month after opening
Baking	: Unnecessary

3-3 Moisture sensitivity level

Equal to Level 1

4. Electrical Specification

Low-Band

Parameter	Frequency (MHz)			TDK Spec		
				Min.	Typ.	Max.
Insertion Loss (dB)	698	to	960	-	0.08	0.40
	1427	to	1511	-	0.15	0.45
	1710	to	2170	-	0.23	0.45
	2300	to	2496	-	0.32	0.60
	2496	to	2690	-	0.48	0.65
Insertion Loss (dB) (–40 to +85 °C)	698	to	960	-	-	0.45
	1427	to	1511	-	-	0.50
	1710	to	2170	-	-	0.50
	2300	to	2496	-	-	0.65
	2496	to	2690	-	-	0.75
VSWR	698	to	960	-	1.17	1.50
	1427	to	2690	-	1.25	1.65
Attenuation (dB)	3400	to	3800	23	28	-
	5150	to	5850	28	29	-

Ta = +25+/-5°C

High-Band

Parameter	Frequency (MHz)			TDK Spec		
				Min.	Typ.	Max.
Insertion Loss (dB)	3400	to	3600	-	0.62	0.80
	3600	to	3800	-	0.46	0.70
	5150	to	5850	-	0.40	0.60
Insertion Loss (dB) (–40 to +85 °C)	3400	to	3600	-	-	0.90
	3600	to	3800	-	-	0.80
	5150	to	5850	-	-	0.70
VSWR	3400	to	3800	-	1.25	1.70
	5150	to	5850	-	1.43	2.00
Attenuation (dB)	698	to	960	30	33	-
	1427	to	1511	27	32	-
	1710	to	2690	23	27	-
	10300	to	11700	15	31	-
	15450	to	17550	5	10	-

Ta = +25+/-5°C

Common

Parameter	Frequency (MHz)			TDK Spec		
				Min.	Typ.	Max.
VSWR	698	to	960	-	1.15	1.50
	1427	to	2690	-	1.24	1.65
	3400	to	3800	-	1.36	1.70
	5150	to	5850	-	1.40	2.00
Power Handling (W)				-	-	1
Characteristic Impedance (ohm)				50 (Nominal)		

Ta = +25+/-5°C

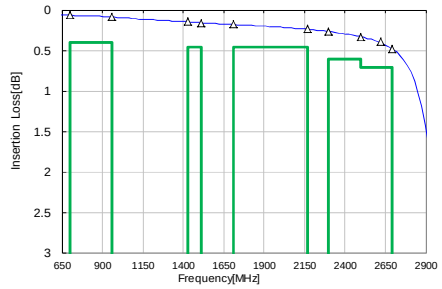
Low - High

Parameter	Frequency (MHz)			TDK Spec		
				Min.	Typ.	Max.
Isolation (dB)	698	to	960	30	33	-
	1427	to	1511	27	32	-
	1710	to	2690	23	27	-
	3400	to	3800	23	29	-
	5150	to	5850	28	31	-

Ta = +25+/-5°C

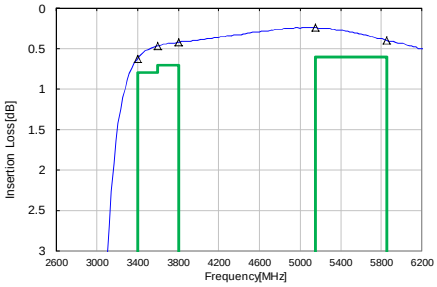
5. Typical electrical characteristics

Low-Band Port Insertion Loss **S21**



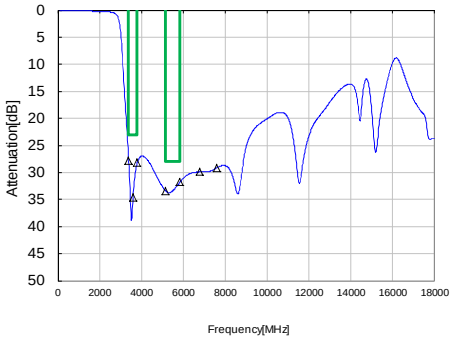
698	MHz	0.06 dB
960	MHz	0.08 dB
1427	MHz	0.14 dB
1511	MHz	0.15 dB
1710	MHz	0.17 dB
2170	MHz	0.23 dB
2300	MHz	0.26 dB
2496	MHz	0.32 dB
2620	MHz	0.39 dB
2690	MHz	0.48 dB

High-Band Port Insertion Loss **S31**



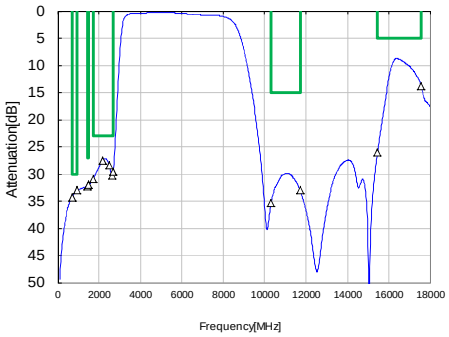
3400	MHz	0.62 dB
3600	MHz	0.46 dB
3800	MHz	0.42 dB
5150	MHz	0.24 dB
5850	MHz	0.40 dB

Low-Band Port Attenuation **S21**



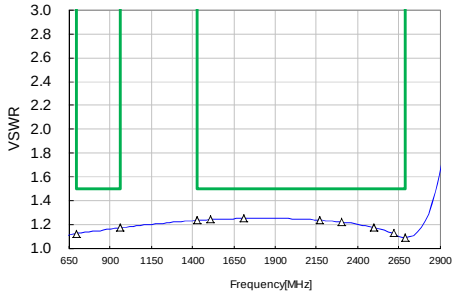
3400	MHz	27.9 dB
3600	MHz	34.6 dB
3800	MHz	28.2 dB
5150	MHz	33.4 dB
5850	MHz	31.8 dB
6800	MHz	29.9 dB
7600	MHz	29.2 dB

High-Band Port Attenuation **S31**



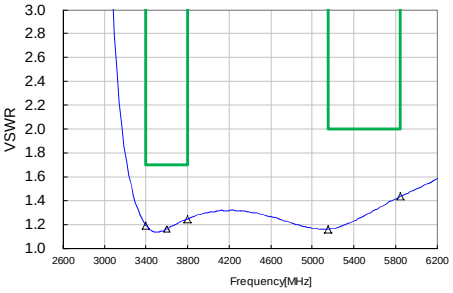
698	MHz	34.3 dB
960	MHz	33.0 dB
1427	MHz	32.2 dB
1511	MHz	32.0 dB
1710	MHz	31.0 dB
2170	MHz	27.6 dB
2496	MHz	28.4 dB
2620	MHz	30.2 dB
2690	MHz	29.6 dB
10300	MHz	35.3 dB
11700	MHz	33.0 dB
15450	MHz	26.0 dB
17550	MHz	13.8 dB

Low-Band Port VSWR **S22**



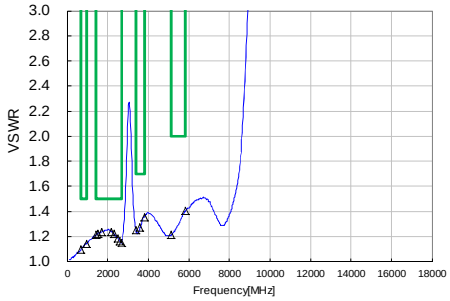
698	MHz	1.12 dB
960	MHz	1.17 dB
1427	MHz	1.24 dB
1511	MHz	1.24 dB
1710	MHz	1.25 dB
2170	MHz	1.24 dB
2300	MHz	1.22 dB
2496	MHz	1.18 dB
2620	MHz	1.13 dB
2690	MHz	1.09 dB

High-Band Port VSWR **S33**



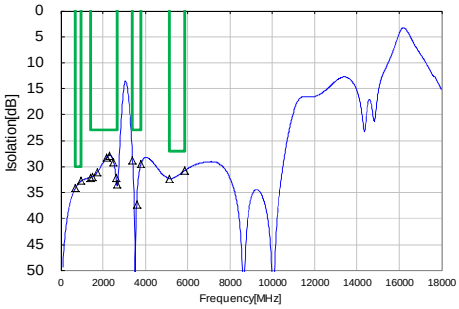
3400	MHz	1.19 dB
3600	MHz	1.16 dB
3800	MHz	1.25 dB
5150	MHz	1.16 dB
5850	MHz	1.43 dB

Common Port VSWR **S11**



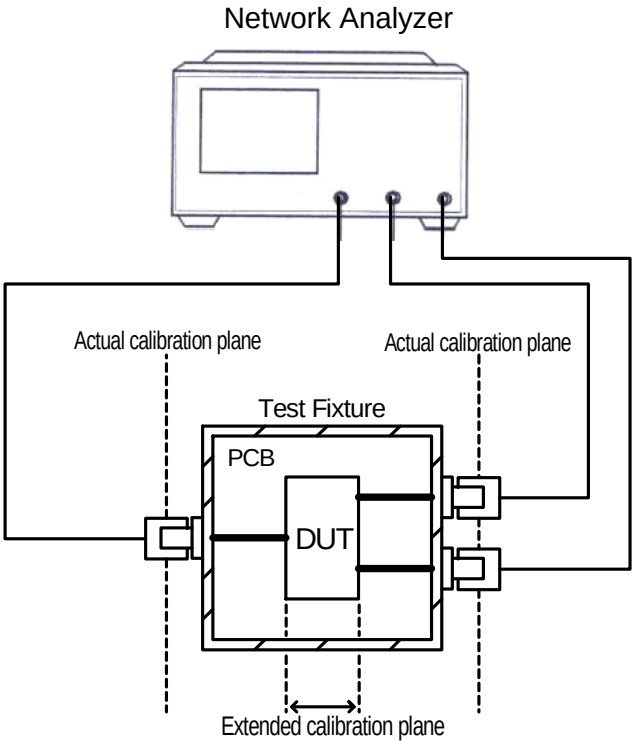
698	MHz	1.10 dB
960	MHz	1.15 dB
1427	MHz	1.21 dB
1511	MHz	1.22 dB
1710	MHz	1.24 dB
2170	MHz	1.24 dB
2300	MHz	1.22 dB
2496	MHz	1.19 dB
2620	MHz	1.16 dB
2690	MHz	1.15 dB
3400	MHz	1.25 dB
3600	MHz	1.27 dB
3800	MHz	1.36 dB
5150	MHz	1.21 dB
5850	MHz	1.40 dB

Isolation (Low - High) **S23**



698	MHz	34.1 dB
960	MHz	32.8 dB
1427	MHz	32.1 dB
1511	MHz	31.9 dB
1710	MHz	31.2 dB
2170	MHz	28.2 dB
2300	MHz	27.8 dB
2496	MHz	29.1 dB
2620	MHz	32.2 dB
2690	MHz	33.3 dB
3400	MHz	28.8 dB
3600	MHz	37.4 dB
3800	MHz	29.6 dB
5150	MHz	32.3 dB
5850	MHz	30.8 dB

6. Test Circuit

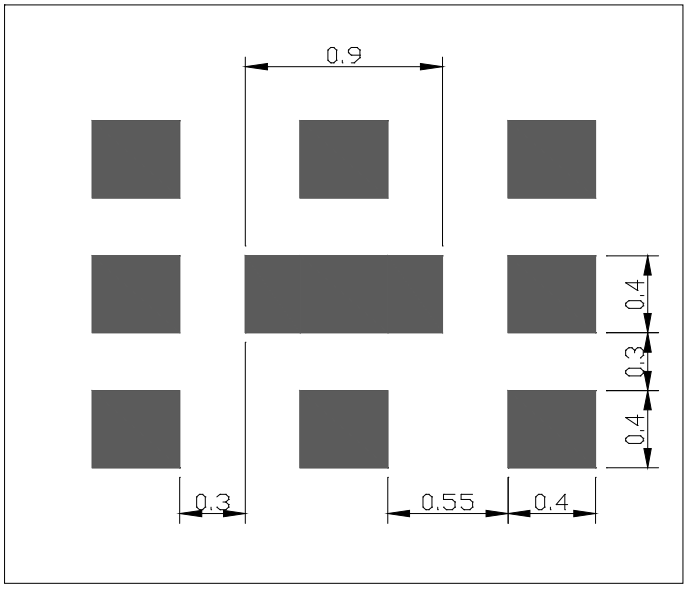


Note 1: The Port Extension function on the Network Analyzer is used to extend the calibration plane to the DUT terminals.

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

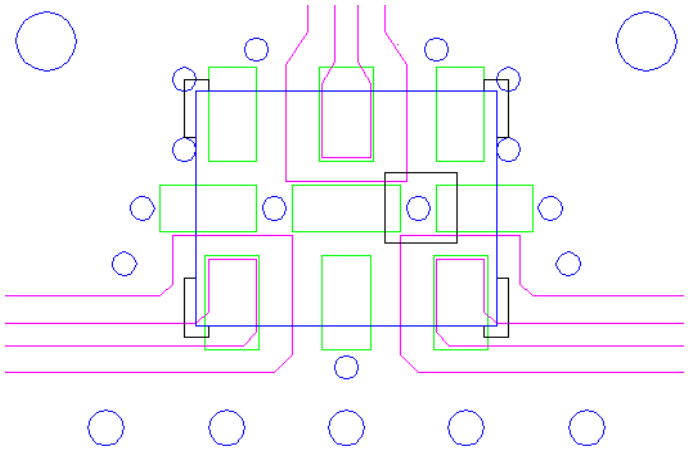
7. Evaluation PCB and Land Pattern

Land Pattern



(Unit:mm)

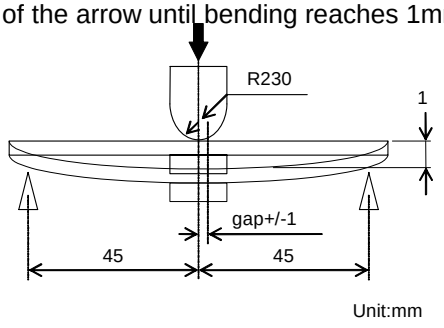
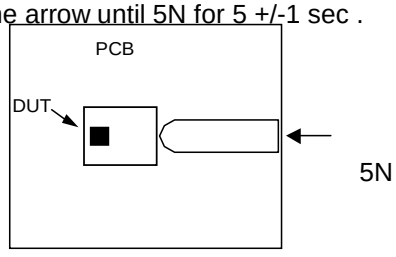
Evaluation Board



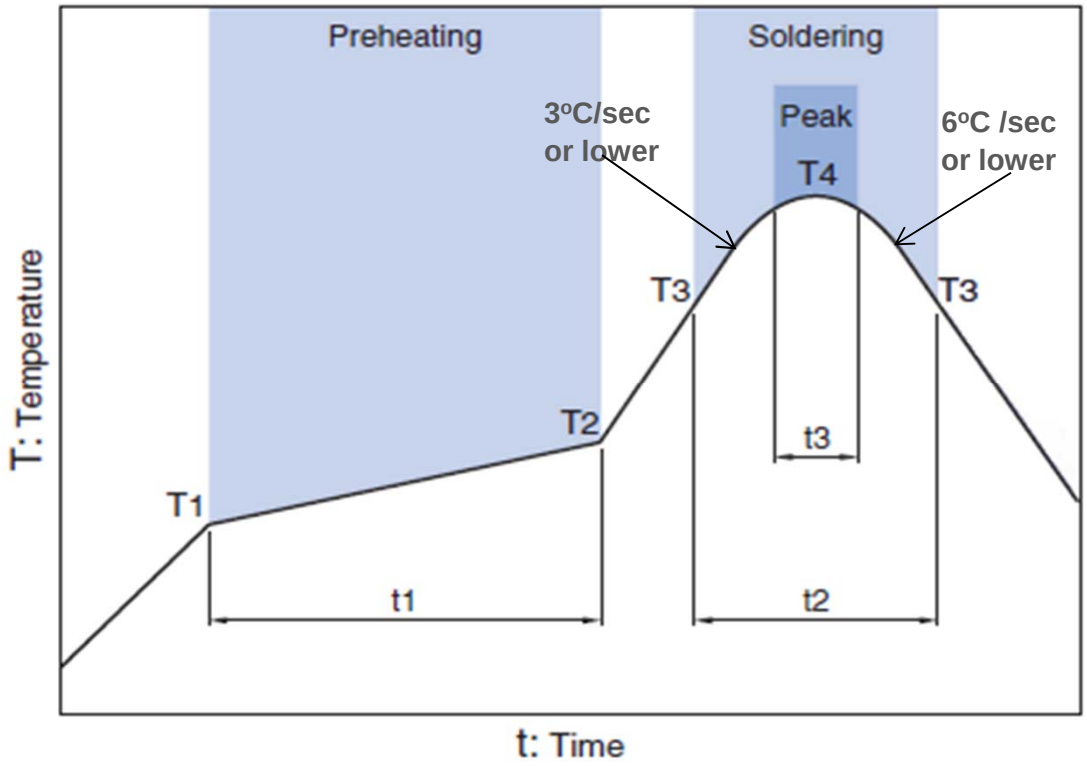
Material, Layer	Thickness
Top Resist	Resist
Copper Surface Pattern	0.035mm
FR-4	0.10mm
Copper Inner GND	0.018mm
FR-4	0.30mm
Copper Bottom GND	0.035mm

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°C, then repeated at -40°C and again at +85°C.
Heat proof:	+85 °C+/-2 °C for 1000 hours
Cold proof:	-40 °C +/-2 °C or 500 hours
Moisture proof:	+60 °C +/-2 °C, 90~95% R.H. for 1000 hours
Heat shock:	-40 ~ +85 °C 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 °C 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 three times 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. 
Board adhesion (Push 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 5N for 5 +/-1 sec . 

9. Recommended reflowing temperature profile



Preheating			Soldering			
			Critical zone (T3 to T4)		Peak	
Temp.		Time	Temp.	Time	Temp.	Time
T1	T2	t1	T3	t2	T4	t3 *
150°C	200°C	60 to 120sec	217°C	60 to 120sec	240 to 260°C	30 sec Max

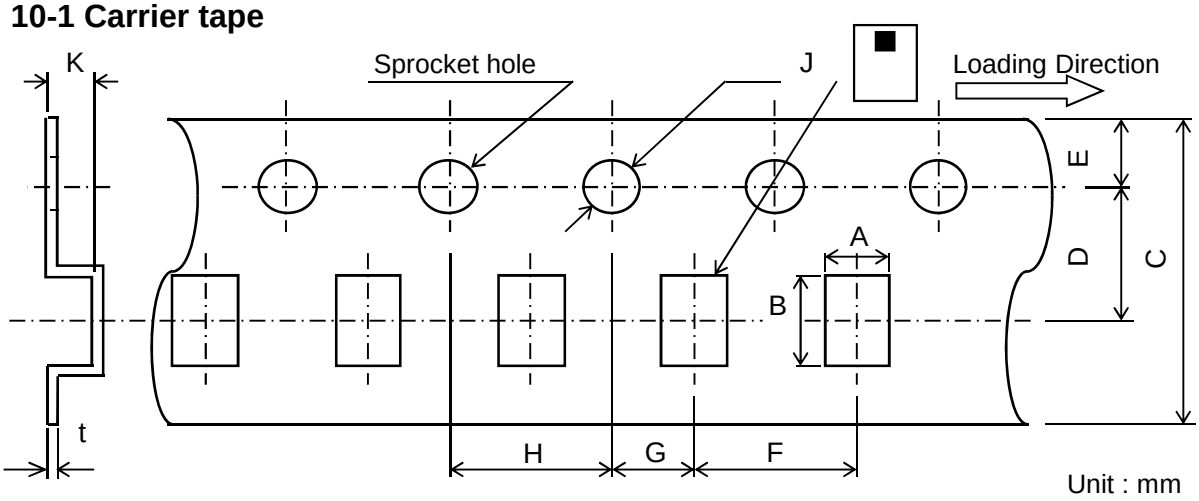
* t3 : Time within 5°C of actual peak temperature.

The maximum number of reflow is 3.

Note: Lead free solder is recommended.
Recommended solder is Sn-3.0Ag-0.5Cu. (M705 by Senju Metal Industry)

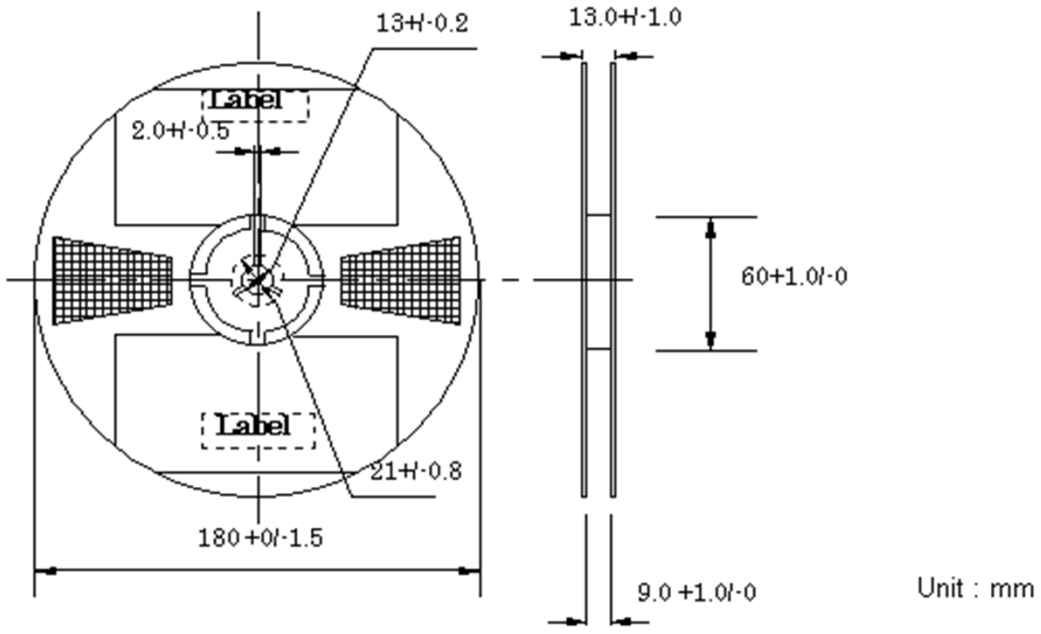
10. Packing

10-1 Carrier tape



A	B	C	D	E	F	G	H	J	K	t
2.2 +/-0.05	2.7 +/-0.05	8.0 +0.3/-0.1	3.5 +/-0.05	1.75 +/-0.1	4.0 +/-0.1	2.0 +/-0.05	4.0 +/-0.1	1.5 +0.1/-0	0.85 Max	0.25 +/-0.05

10-2. Reel Dimensions



10-3. Standard Reel Packaging quantities

2000pcs./reel

11. Other

11-1 Notice

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 designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.

11-2 Product Origin

1. TDK Akita Corporation, Akita, Japan

2. TDK Dalian Corporation, Dalian ,China

X-ON Electronics

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