CONFIDENTIAL

No. CF402-01

September 1, 2022

Specification

DUAL Band Diplexer for WiFi 2G/5-7G

P/N: LFD152G45MUBF402

CONFIDENTIAL

No. CF402-01

Diplexer

Part Number : LFD152G45MUBF402

1. Maximam Ratings

	Ratings	Conditions
Operating Temperature	-40 ~ +85 °C	
Power Capacity	1W	50Ω Load

2. Electrical Characteristics (at -40 ~ +85 ℃)

■ Low Band

Item		Frequency (MHz)	SPEC		Unit
			Min.	Max.	
Insertion Loss	at +25℃	617.00 ~ 1610.00	-	0.45	dB
	at -40~+85℃		-	0.55	dB
	at +25℃	2400.00 ~ 2500.00	-	0.65	dB
	at -40~+85℃		-	0.75	dB
	at +25℃	2496.00 ~ 2690.00	-	0.80	dB
	at -40~+85℃		-	0.90	dB
VSWR		617.00 ~ 1610.00	-	1.93	-
		2400.00 ~ 2500.00	-	1.93	-
		2496.00 ~ 2690.00	-	1.93	-
Attenuation (Absolute value)		4800.00 ~ 5000.00	15.0	-	dB
		5150.00 ~ 7125.00	15.0	-	dB
		7200.00 ~ 7500.00	20.0	-	dB

■ High Band

Item		Frequency (MHz)	SPEC		Unit
			Min.	Max.	
Insertion Loss	at +25℃	5150.00 ~ 5950.00	-	0.95	dB
	at -40~+85℃		-	1.05	dB
	at +25℃	5950.00 ~ 6245.00	-	0.95	dB
	at -40~+85℃		-	1.10	dB
	at +25℃	6245.00 ~ 7125.00	-	0.95	dB
	at -40~+85℃		-	1.10	dB
VSWR		5150.00 ~ 5950.00	-	2.10	-
		5950.00 ~ 6245.00	-	2.10	-
		6245.00 ~ 7125.00	-	2.10	-
Attenuation (Absolute value)		500.00 ~ 2400.00	24.0	-	dB
		2400.00 ~ 2500.00	26.0	-	dB
		2500.00 ~ 2690.00	19.0	-	dB
		10300.00 ~ 11900.00	9.0	-	dB
		11900.00 ~ 12490.00	13.5	-	dB
		12490.00 ~ 14250.00	11.5	-	dB
		15510.00 ~ 21375.00	8.0	-	dB

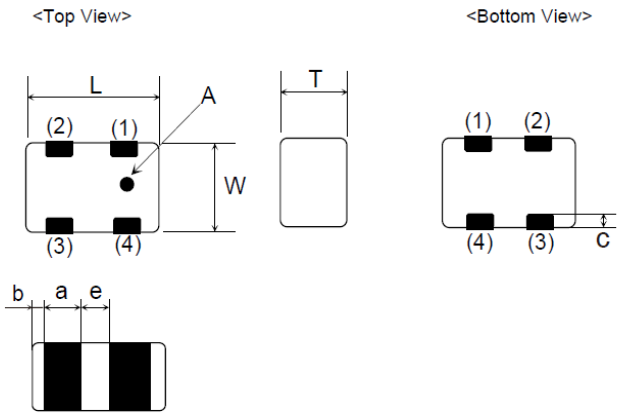
■ Common

Item	Frequency (MHz)	SPEC		Unit
		Min.	Max.	
VSWR	617.00 ~ 1610.00	-	1.93	-
	2400.00 ~ 2500.00	-	1.93	-
	2496.00 ~ 2690.00	-	1.93	-
	5150.00 ~ 5950.00	-	2.10	-
	5950.00 ~ 6245.00	-	2.21	-
	6245.00 ~ 7125.00	-	2.21	-

■ Isolation

Item	Frequency (MHz)	SPEC		Unit
		Min.	Max.	
Isolation LB-HB	617.00 ~ 2500.00	24.0	-	dB
	5150.00 ~ 5950.00	16.0	-	dB
	5950.00 ~ 6245.00	15.5	-	dB
	6245.00 ~ 7125.00	16.5	-	dB

3. Construction, Dimensions & Marking



(in mm)

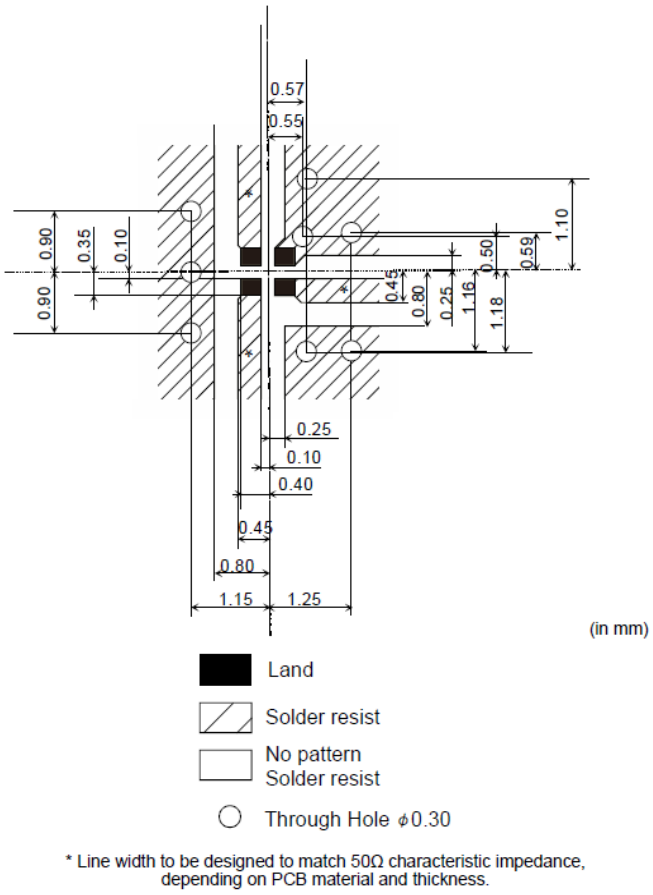
Mark	Meaning
A	Directional Input Mark

Mark	Dimension	Mark	Dimension
L	1.000+0.050/-0.075	b	0.10+/-0.10
W	0.50+/-0.05	c	0.12+/-0.07
T	0.40 max.	e	0.20+/-0.10
a	0.30+/-0.10		

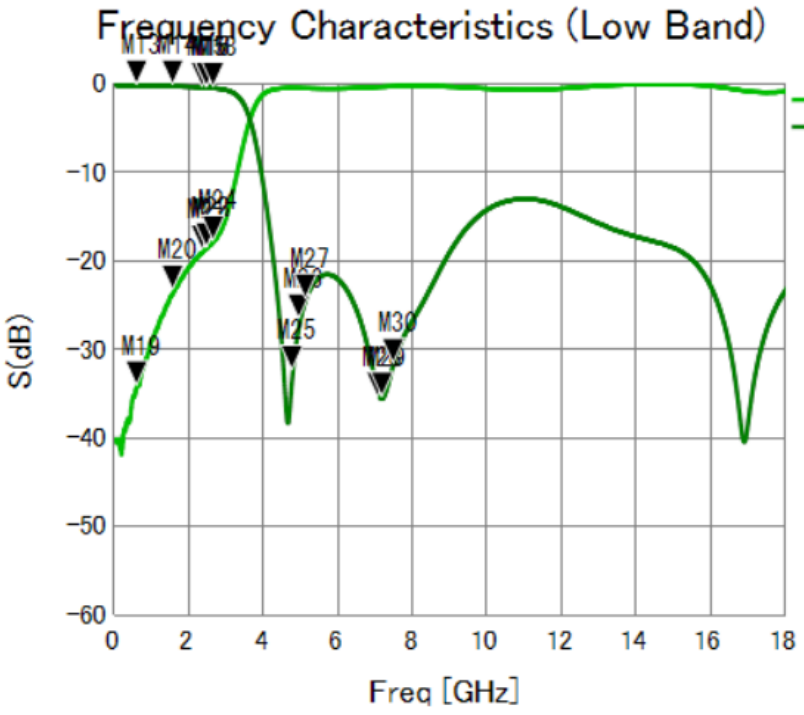
TERMINAL CONFIGURATION

Terminal No.	Terminal Name	Terminal No.	Terminal Name
(1)	GND	(3)	P1(2.4G)
(2)	P3(COM)	(4)	P2(5G)

4. Land Pattern



* Line width to be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.



Insertion Loss

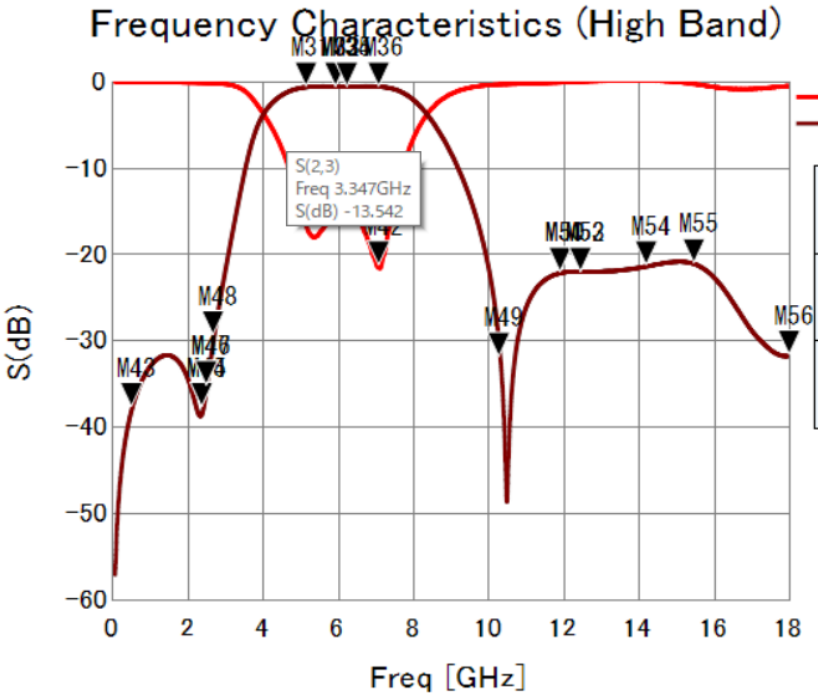
M13 : S(1,3) Freq 617.000M Hz S(dB) −0.168	M14 : S(1,3) Freq 1.610G Hz S(dB) −0.234
M15 : S(1,3) Freq 2.400G Hz S(dB) −0.361	M16 : S(1,3) Freq 2.500G Hz S(dB) −0.387
M17 : S(1,3) Freq 2.496G Hz S(dB) −0.385	M18 : S(1,3) Freq 2.690G Hz S(dB) −0.449

Attenuation

M25 : S(1,3) Freq 4.800G Hz S(dB) −32.416	M26 : S(1,3) Freq 5.000G Hz S(dB) −26.609
M27 : S(1,3) Freq 5.150G Hz S(dB) −24.303	M28 : S(1,3) Freq 7.125G Hz S(dB) −35.331
M29 : S(1,3) Freq 7.200G Hz S(dB) −35.538	M30 : S(1,3) Freq 7.500G Hz S(dB) −31.637

Return Loss

M19 : S(1,1) Freq 617.000M Hz S(dB) −34.133	M20 : S(1,1) Freq 1.610G Hz S(dB) −23.379
M21 : S(1,1) Freq 2.400G Hz S(dB) −18.847	M22 : S(1,1) Freq 2.500G Hz S(dB) −18.534
M23 : S(1,1) Freq 2.496G Hz S(dB) −18.557	M24 : S(1,1) Freq 2.690G Hz S(dB) −17.681



Insertion Loss

M31 : S(2,3) Freq 5.150G Hz S(dB) −0.626	M32 : S(2,3) Freq 5.950G Hz S(dB) −0.567
M33 : S(2,3) Freq 5.950G Hz S(dB) −0.567	M34 : S(2,3) Freq 6.245G Hz S(dB) −0.566
M35 : S(2,3) Freq 6.245G Hz S(dB) −0.566	M36 : S(2,3) Freq 7.125G Hz S(dB) −0.594

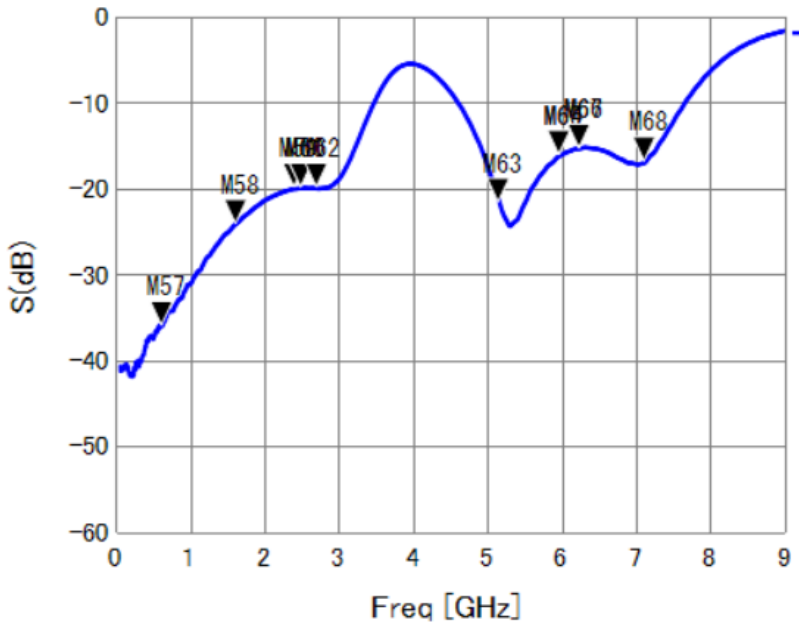
Attenuation

M43 : S(2,3) Freq 500.000M Hz S(dB) −37.784	M44 : S(2,3) Freq 2.400G Hz S(dB) −37.796
M45 : S(2,3) Freq 2.400G Hz S(dB) −37.796	M46 : S(2,3) Freq 2.500G Hz S(dB) −35.098
M47 : S(2,3) Freq 2.500G Hz S(dB) −35.098	M48 : S(2,3) Freq 2.690G Hz S(dB) −29.282
M49 : S(2,3) Freq 10.300G Hz S(dB) −31.873	M50 : S(2,3) Freq 11.900G Hz S(dB) −22.110
M51 : S(2,3) Freq 11.900G Hz S(dB) −22.110	M52 : S(2,3) Freq 12.490G Hz S(dB) −21.935
M53 : S(2,3) Freq 12.490G Hz S(dB) −21.935	M54 : S(2,3) Freq 14.250G Hz S(dB) −21.305
M55 : S(2,3) Freq 15.510G Hz S(dB) −21.143	M56 : S(2,3) Freq 18.000G Hz S(dB) −31.649

Return Loss

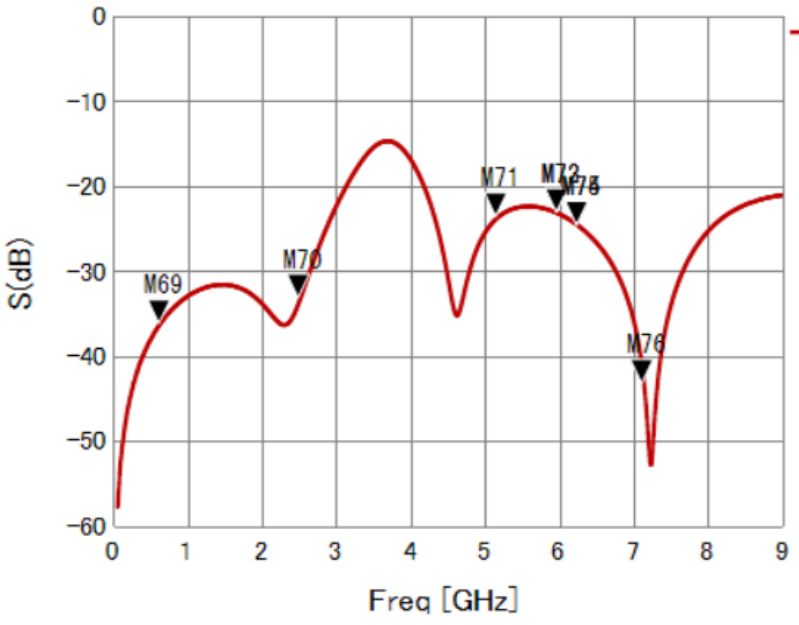
M37 : S(2,2) Freq 5.150G Hz S(dB) −16.796	M38 : S(2,2) Freq 5.950G Hz S(dB) −15.192
M39 : S(2,2) Freq 5.950G Hz S(dB) −15.192	M40 : S(2,2) Freq 6.245G Hz S(dB) −14.937
M41 : S(2,2) Freq 6.245G Hz S(dB) −14.937	M42 : S(2,2) Freq 7.125G Hz S(dB) −21.333

Return Loss – Common



M57 : S(3,3) Freq 617.000M Hz S(dB) −35.873	M58 : S(3,3) Freq 1.610G Hz S(dB) −23.967
M59 : S(3,3) Freq 2.400G Hz S(dB) −19.910	M60 : S(3,3) Freq 2.500G Hz S(dB) −19.812
M61 : S(3,3) Freq 2.496G Hz S(dB) −19.825	M62 : S(3,3) Freq 2.690G Hz S(dB) −19.854
M63 : S(3,3) Freq 5.150G Hz S(dB) −21.477	M64 : S(3,3) Freq 5.950G Hz S(dB) −16.099
M65 : S(3,3) Freq 5.950G Hz S(dB) −16.099	M66 : S(3,3) Freq 6.245G Hz S(dB) −15.202
M67 : S(3,3) Freq 6.245G Hz S(dB) −15.202	M68 : S(3,3) Freq 7.125G Hz S(dB) −16.661

Isolation LB-HB

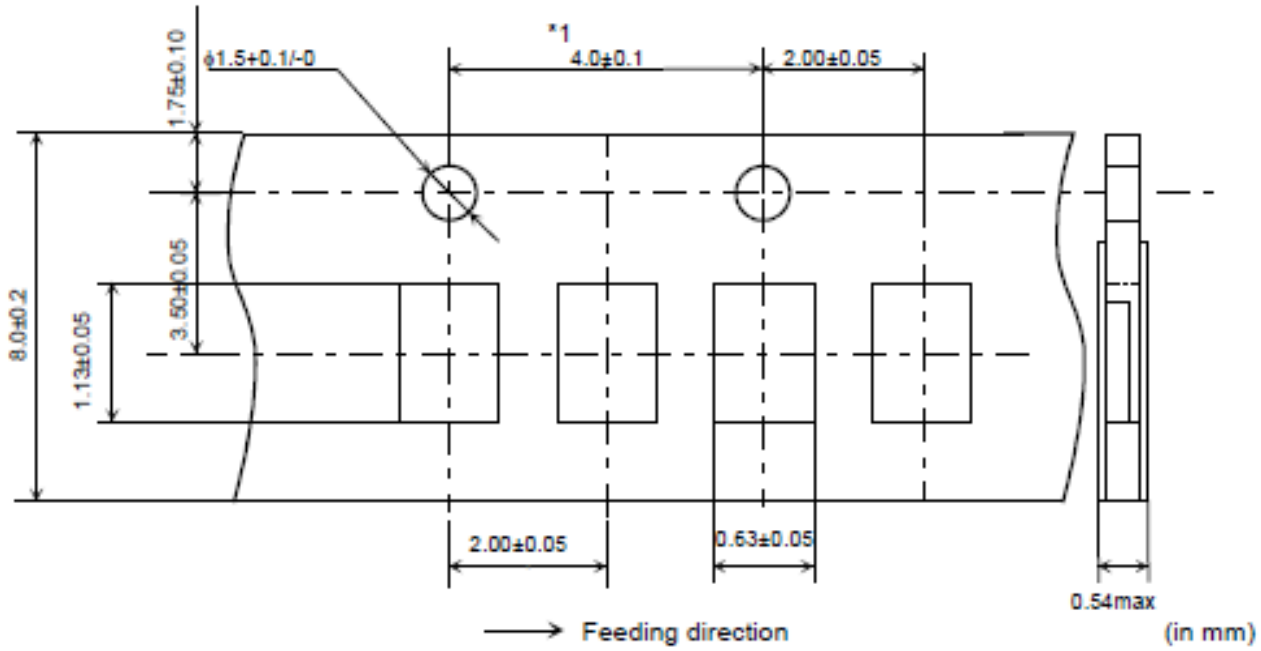


M69 : S(2,1) Freq 617.000M Hz S(dB) −36.169	M70 : S(2,1) Freq 2.500G Hz S(dB) −33.233
M71 : S(2,1) Freq 5.150G Hz S(dB) −23.637	M72 : S(2,1) Freq 5.950G Hz S(dB) −23.029
M73 : S(2,1) Freq 5.950G Hz S(dB) −23.029	M74 : S(2,1) Freq 6.245G Hz S(dB) −24.557
M75 : S(2,1) Freq 6.245G Hz S(dB) −24.557	M76 : S(2,1) Freq 7.125G Hz S(dB) −43.186

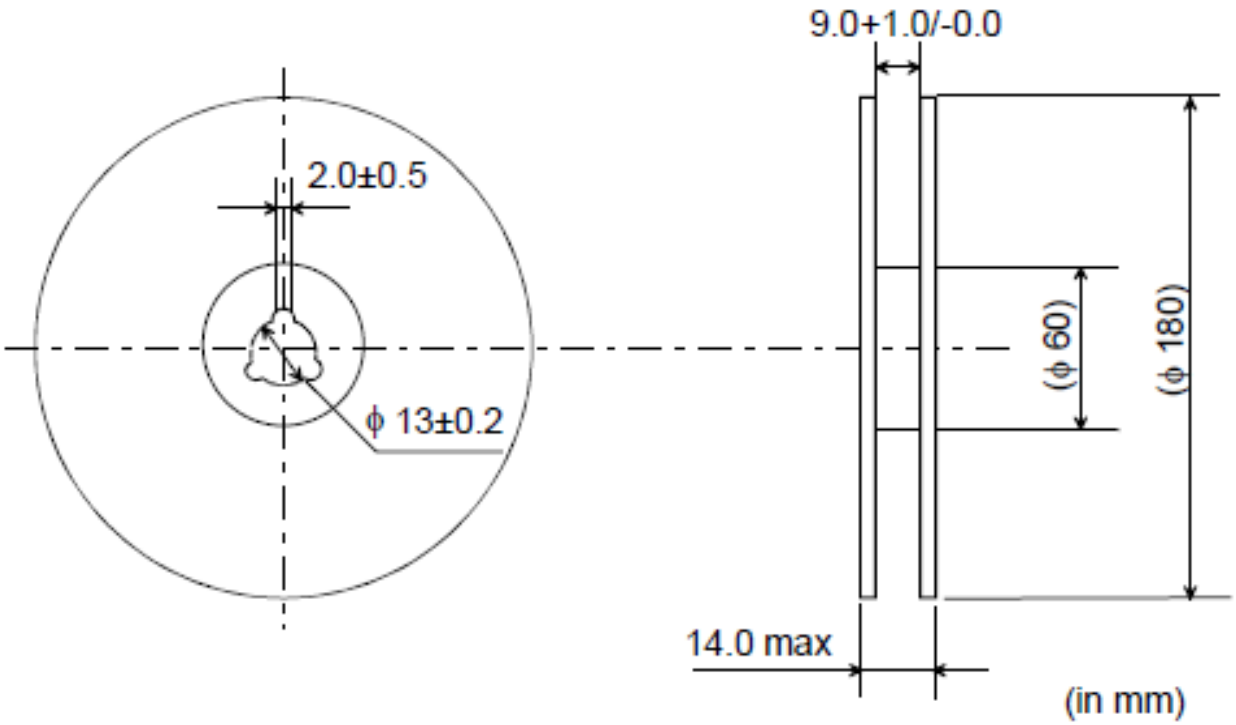
5.Tape and Reel Packing

(1) Dimensions of Tape (Paper tape)

＊Cumulative tolerance of max. ± 0.3 every 10 pitches.



(2) Dimensions of Reel



(3) Taping Diagrams

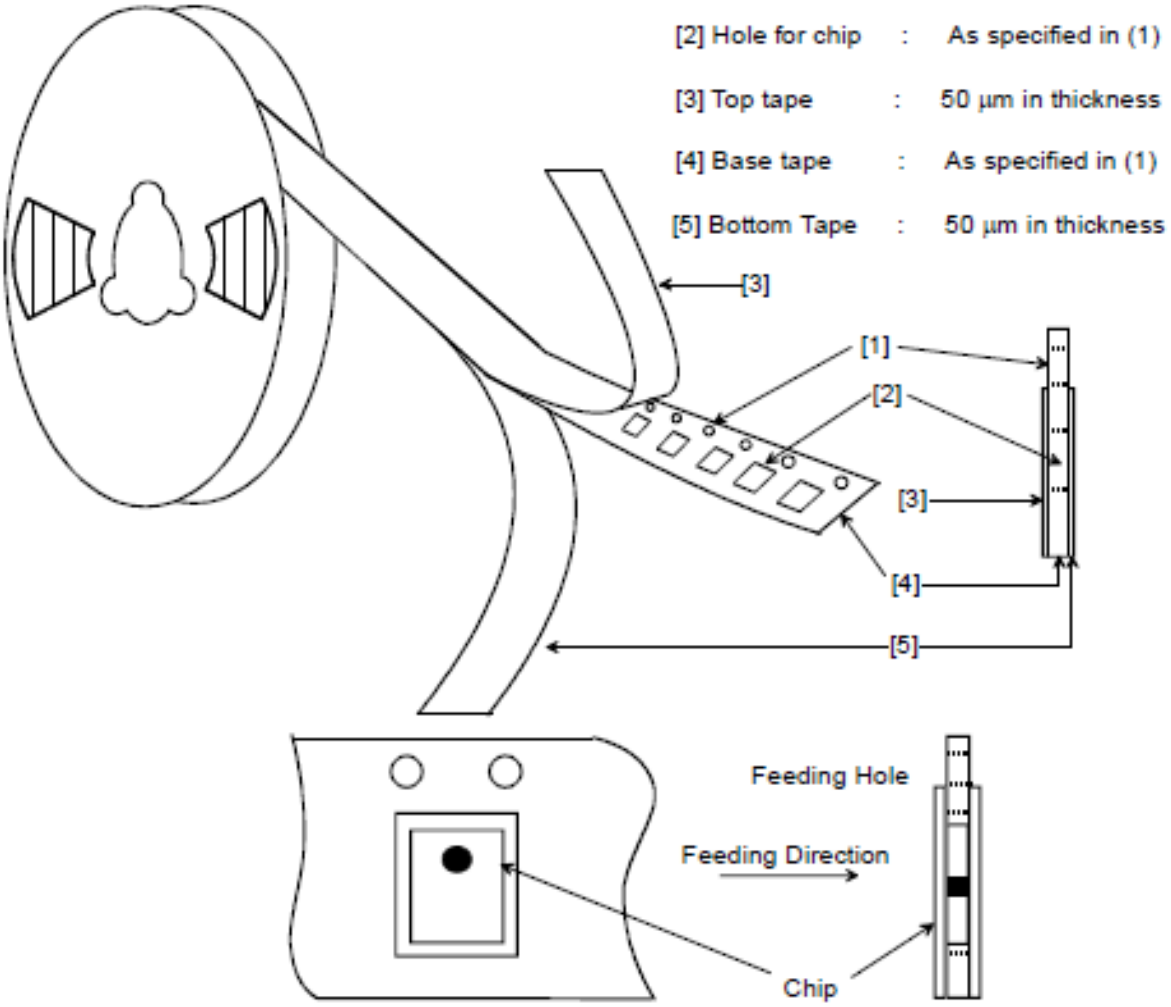
[1] Feeding Hole : As specified in (1)

[2] Hole for chip : As specified in (1)

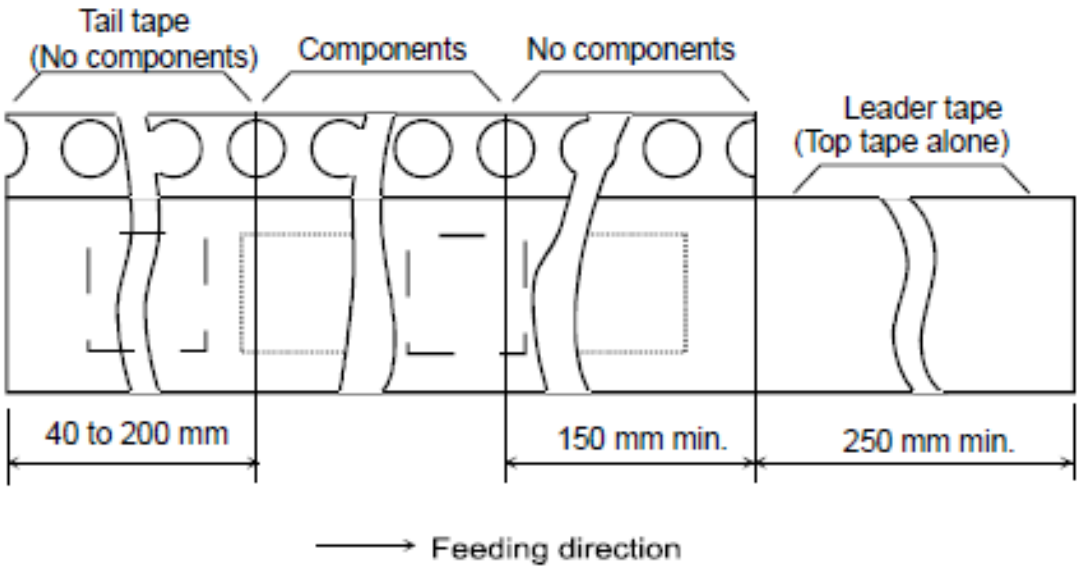
[3] Top tape : 50 μm in thickness

[4] Base tape : As specified in (1)

[5] Bottom Tape : 50 μm in thickness



(4) Leader and Tail tape



(5) The tape for chips are wound clockwise, the feeding holes to the right side as the tape is pulled toward the user.

(6) The top tape and bottom tape shall not protrude the edges of the tape, and shall not cover sprocket holes.

(7) The top tape and base tape are not adhered at no components area for 250 mm min.

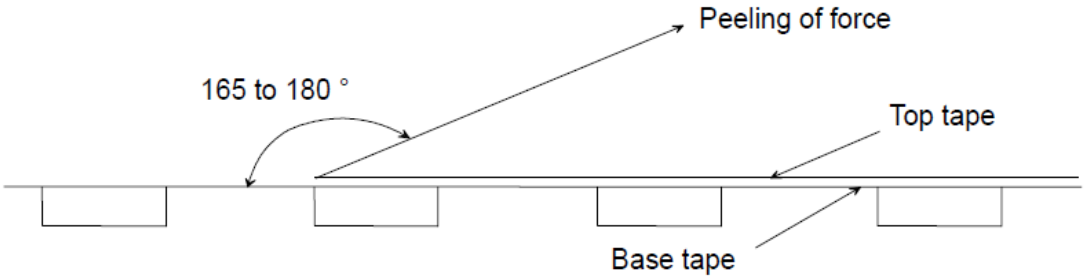
(8) Tear off strength against pulling of top tape and bottom tape : 5N min.

(9) Packaging unit : 10000 pcs. / reel

(10) Material : Base tape .....Paper
Reel .....Plastic

(11) Peeling of force : in the direction of peeling as shown below.
Peeling speed : 300mm/min ±10mm/min

Tape width	Peeling of force (max)
8mm	1.0N
12-56mm	1.3N
72-200mm	1.5N



CONFIDENTIAL

No. CF402-01

CAUTION

PLEASE READ THIS NOTICE BEFORE USING OUR PRODUCTS.

Please make sure that your product has been evaluated and confirmed from the aspect of the fitness for the specifications of our product when our product is mounted to your product.
All the items and parameters in this product specification/datasheet/catalog have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment specified in this specification. You are requested not to use our product deviating from the condition and the environment specified in this specification.
Please note that the only warranty that we provide regarding the products is its conformance to the specifications provided herein. Accordingly, we shall not be responsible for any defects in products or equipment incorporating such products, which are caused under the conditions other than those specified in this specification.

WE HEREBY DISCLAIMS ALL OTHER WARRANTIES REGARDING THE PRODUCTS, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, THAT THEY ARE DEFECT-FREE, OR AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS.

The product shall not be used in any application listed below which requires especially high reliability for the prevention of such defect as may directly cause damage to the third party's life, body or property. You acknowledge and agree that, if you use our products in such applications, we will not be responsible for any failure to meet such requirements.
Furthermore, YOU AGREE TO INDEMNIFY AND DEFEND US AND OUR AFFILIATES AGAINST ALL CLAIMS, DAMAGES, COSTS, AND EXPENSES THAT MAY BE INCURRED, INCLUDING WITHOUT LIMITATION, ATTORNEY FEES AND COSTS, DUE TO THE USE OF OUR PRODUCTS IN SUCH APPLICATIONS.
- Aircraft equipment.
- Aerospace equipment
- Undersea equipment.
- Power plant control equipment
- Medical equipment.
- Transportation equipment (vehicles, trains, ships, elevator, etc.).
- Traffic signal equipment.
- Disaster prevention / crime prevention equipment.
- Burning / explosion control equipment
- Application of similar complexity and/ or reliability requirements to the applications listed in the above.

We expressly prohibit you from analyzing, breaking, Reverse-Engineering, remodeling altering, and reproducing our product. Our product cannot be used for the product which is prohibited from being manufactured, used, and sold by the regulations and laws in the world.

We do not warrant or represent that any license, either express or implied, is granted under any our patent right, copyright, mask work right, or our other intellectual property right relating to any combination, machine, or process in which our products or services are used. Information provided by us regarding third-party products or services does not constitute a license from us to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from us under our patents or other intellectual property.

Please do not use our products, our technical information and other data provided by us for the purpose of developing of mass-destruction weapons and the purpose of military use.
Moreover, you must comply with "foreign exchange and foreign trade law", the "U.S. export administration regulations", etc.

Please note that we may discontinue the manufacture of our products, due to reasons such as end of supply of materials and/or components from our suppliers.

Customer acknowledges that Murata will, if requested by you, conduct a failure analysis for defect or alleged defect of Products only at the level required for consumer grade Products, and thus such analysis may not always be available or be in accordance with your request (for example, in cases where the defect was caused by components in Products supplied to Murata from a third party).

By signing on specification sheet or approval sheet, you acknowledge that you are the legal representative for your company and that you understand and accept the validity of the contents herein.
When you are not able to return the signed version of specification sheet or approval sheet within 90 days from receiving date of specification sheet or approval sheet, it shall be deemed to be your consent on the content of specification sheet or approval sheet.

Customer acknowledges that engineering samples may deviate from specifications and may contain defects due to their development status.
We reject any liability or product warranty for engineering samples.
In particular we disclaim liability for damages caused by
・the use of the engineering sample other than for evaluation purposes, particularly the installation or integration in the product to be sold by you,
・deviation or lapse in function of engineering sample,
・improper use of engineering samples.
We disclaims any liability for consequential and incidental damages.

If you can't agree the above contents, you should inquire our sales.