



Jun. 2021 Ver.3.0N
TDK Corporation

Multilayer Diplexer

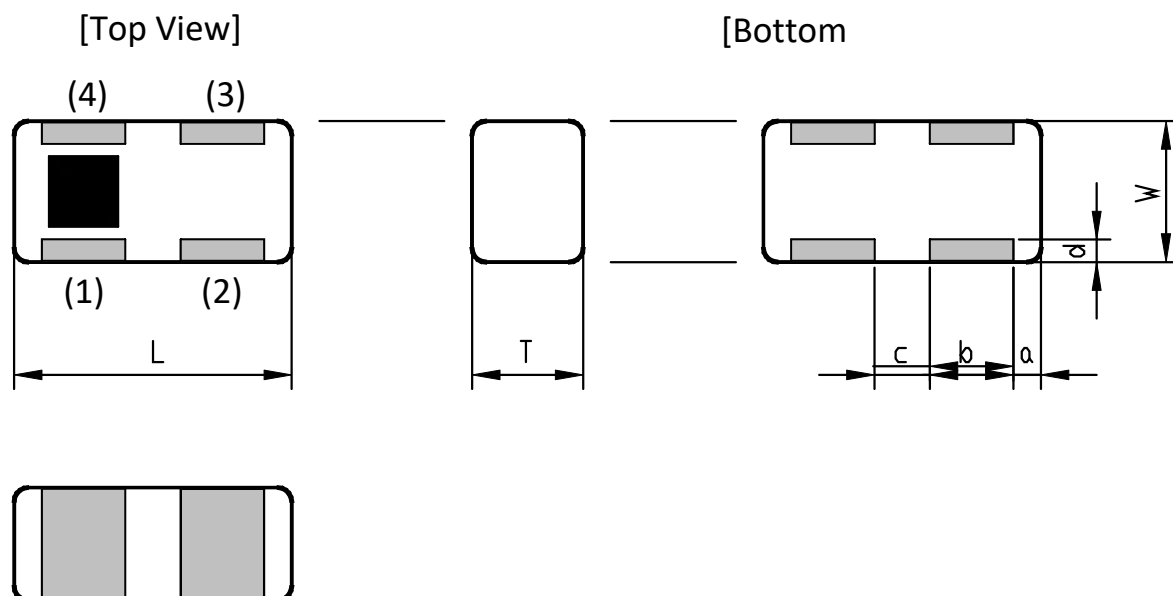
For 2.4GHz W-LAN & Bluetooth / 5-7GHz W-LAN

DPX Series 1.0x0.5mm [EIA 0402] TYPE

P/N: **DPX107150DT-6030A2**

DPX107150DT-6030A2

■ SHAPES AND DIMENSIONS



Dimensions (mm)

L	W	T	a	b	c	d
1.00	0.50	0.40	0.10	0.30	0.20	0.12
+/-0.05	+/-0.05	Max	+/-0.10	+/-0.10	+/-0.10	+/-0.07

Terminal functions

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

■ TERMINATION FINISH

Material
Sn plate

DPX107150DT-6030A2

ELECTRICAL CHARACTERISTICS

(Measurement)

Low-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	617 to 960	-	0.10	0.30
	1164 to 2400	-	0.28	0.40
	2400 to 2500	-	0.31	0.45
	2500 to 2690	-	0.38	0.50
Insertion Loss (dB) (-40 to +90 °C)	617 to 960	-	-	0.40
	1164 to 2400	-	-	0.52
	2400 to 2500	-	-	0.56
	2500 to 2690	-	-	0.62
VSWR (Common Port)	617 to 2690	-	1.27	1.92
VSWR (Low-Band Port)	617 to 2690	-	1.21	1.92
Attenuation (dB)	4800 to 7125	23	25	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

High-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	5150 to 7125	-	0.41	0.60
	7125 to 7150	-	0.41	0.60
Insertion Loss (dB) (-40 to +90 °C)	5150 to 7125	-	-	0.88
	7125 to 7150	-	-	0.88
VSWR (Common Port)	5150 to 7125	-	1.28	1.92
	7125 to 7150	-	1.20	1.92
VSWR (High-Band Port)	5150 to 7125	-	1.27	1.92
	7125 to 7150	-	1.13	1.92
Attenuation (dB)	617 to 960	25	29	-
	1164 to 2400	25	27	-
	2400 to 2500	30	39	-
	2500 to 2690	25	31	-
	10300 to 21375	10	14	-
	21375 to 21450	10	19	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

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ELECTRICAL CHARACTERISTICS

(Measurement)

Isolation

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Isolation (dB)	2400 to 2500	25	36	-
	5150 to 7125	23	26	-
	7125 to 7150	23	52	-

Ta = +25+/-5°C

MAXIMUM RATINGS

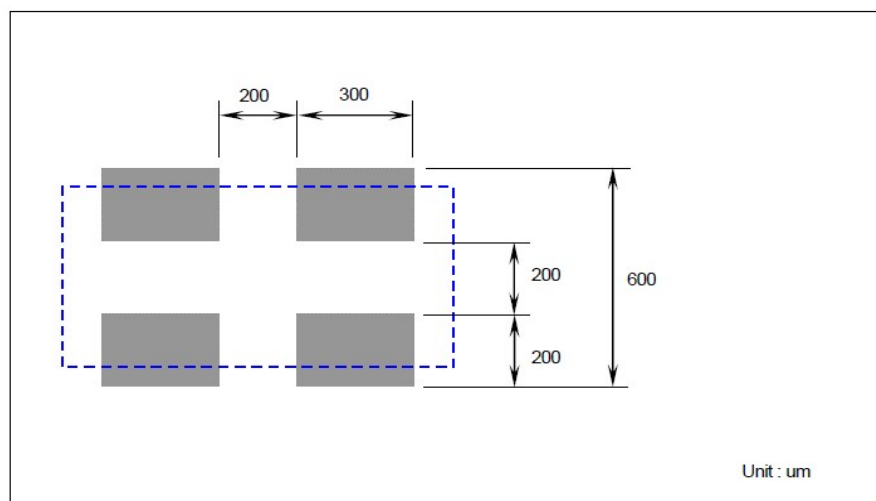
Parameter			TDK Spec	Conditions
Operating temperature (°C)			-40 to +90 °C	
Storage temperature (°C)			-40 to +90 °C	
Power Handling (W) *1	Frequency (MHz)			
	Low-Band	617 to 2690	1	CW
	High-Band	5150 to 7150	1	CW
Human Body Model : HBM @Each Port (V)			+/-500	100pF / 1500ohm
Machine Model : MM @Each Port (V)			+/-150	200pF / 0ohm
Charged Device Model : CDM @Each Port (V)			+/-1000	Humidity : 60%RH max

*1 : Refer to 3GPP TS 38.101-1 V15.2.0

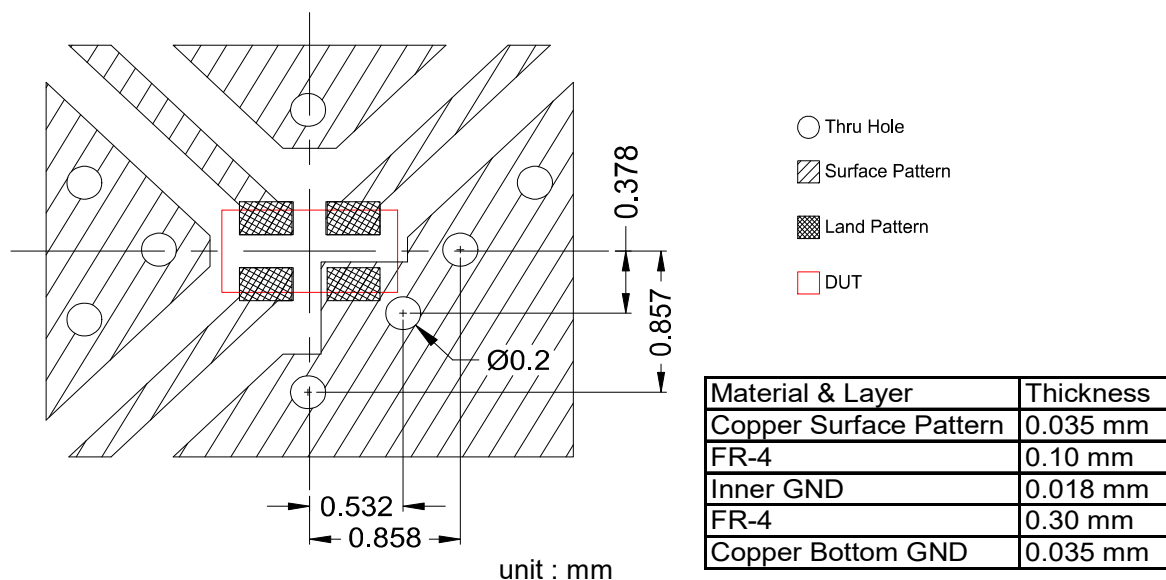
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RECOMMENDED LAND PATTERN



EVALUATION BOARD



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

** The position of the through hole which have possibility of influence to the performance are indicated by dimension line.

ENVIRONMENT INFORMATION

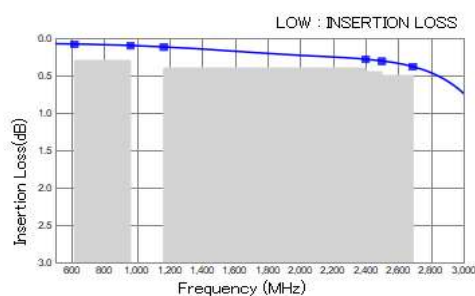
RoHS Statement
RoHS Compliance

All specifications are subject to change without notice.
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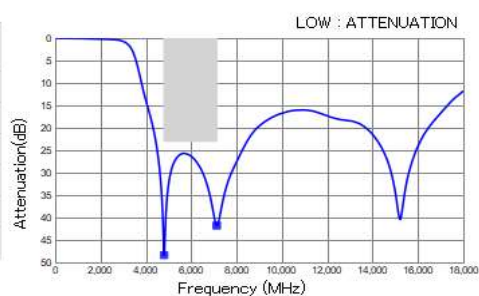
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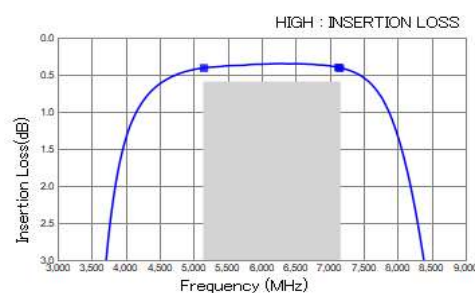
FREQUENCY CHARACTERISTICS



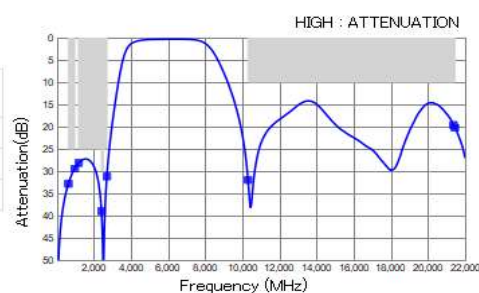
P/N	DPX107150DT-
Freq	6030A2_Ver3_0JN_20210610
617	0.08
960	0.10
1164	0.12
2400	0.28
2500	0.31
2690	0.38



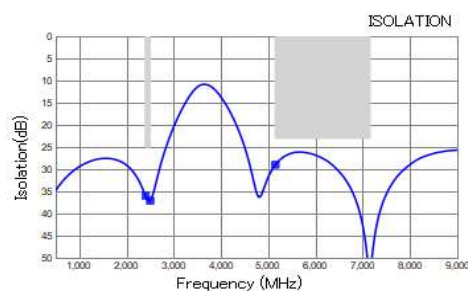
P/N	DPX107150DT-
Freq	6030A2_Ver3_0JN_20210610
4800	48.38
7125	41.80



P/N	DPX107150DT-
Freq	6030A2_Ver3_0JN_20210610
5150	0.41
7125	0.40
7150	0.41



P/N	DPX107150DT-
Freq	6030A2_Ver3_0JN_20210610
617	32.85
960	29.38
1164	28.17
2400	39.02
2500	52.49
2690	31.21
10300	31.99
21375	19.64
21450	20.21



P/N	DPX107150DT-
Freq	6030A2_Ver3_0JN_20210610
2400	35.99
2500	37.13
5150	28.99
7125	52.61
7150	53.35

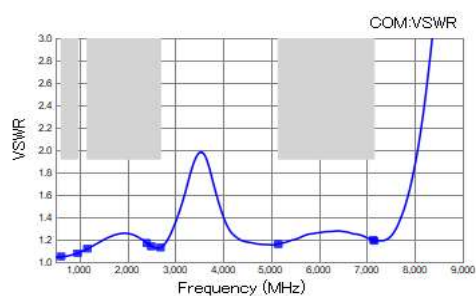
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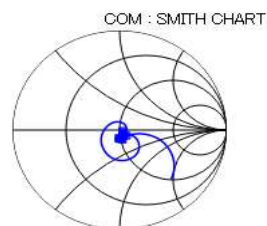
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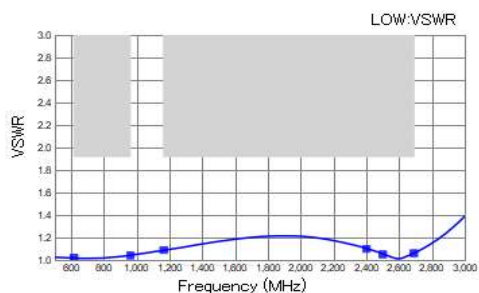
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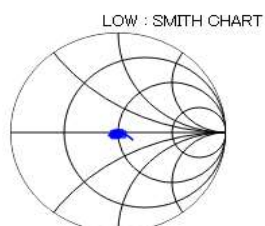
P/N	DPX107150DT-6030A2_Ver3.0N_20210610
Freq	
617	1.05
960	1.08
1164	1.12
2400	1.17
2500	1.14
2690	1.13
5150	1.16
7125	1.20
7150	1.19



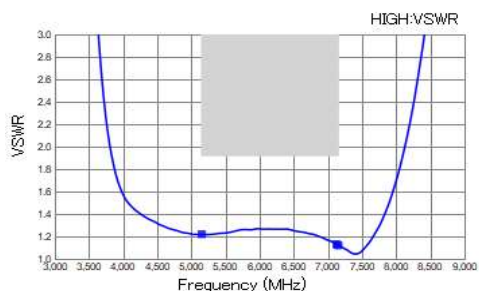
P/N	DPX107150DT-6030A2_Ver3.0N_20210610
Freq	
617	52.37 / 0.08
960	52.49 / -2.96
1164	51.65 / -5.42
2400	47.51 / -7.37
2500	48.91 / -6.58
2690	53.29 / -5.27
5150	55.7 / -5.37
7125	50.49 / -9.08
7150	50.79 / -8.94



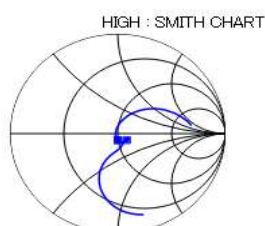
P/N	DPX107150DT-6030A2_Ver3.0N_20210610
Freq	
617	1.02
960	1.04
1164	1.08
2400	1.10
2500	1.05
2690	1.06



P/N	DPX107150DT-6030A2_Ver3.0N_20210610
Freq	
617	50.06 / 0.81
960	48.07 / -0.55
1164	46.37 / -1.56
2400	45.37 / -0.68
2500	47.46 / -0.39
2690	52.88 / -0.94



P/N	DPX107150DT-6030A2_Ver3.0N_20210610
Freq	
5150	1.22
7125	1.13
7150	1.12



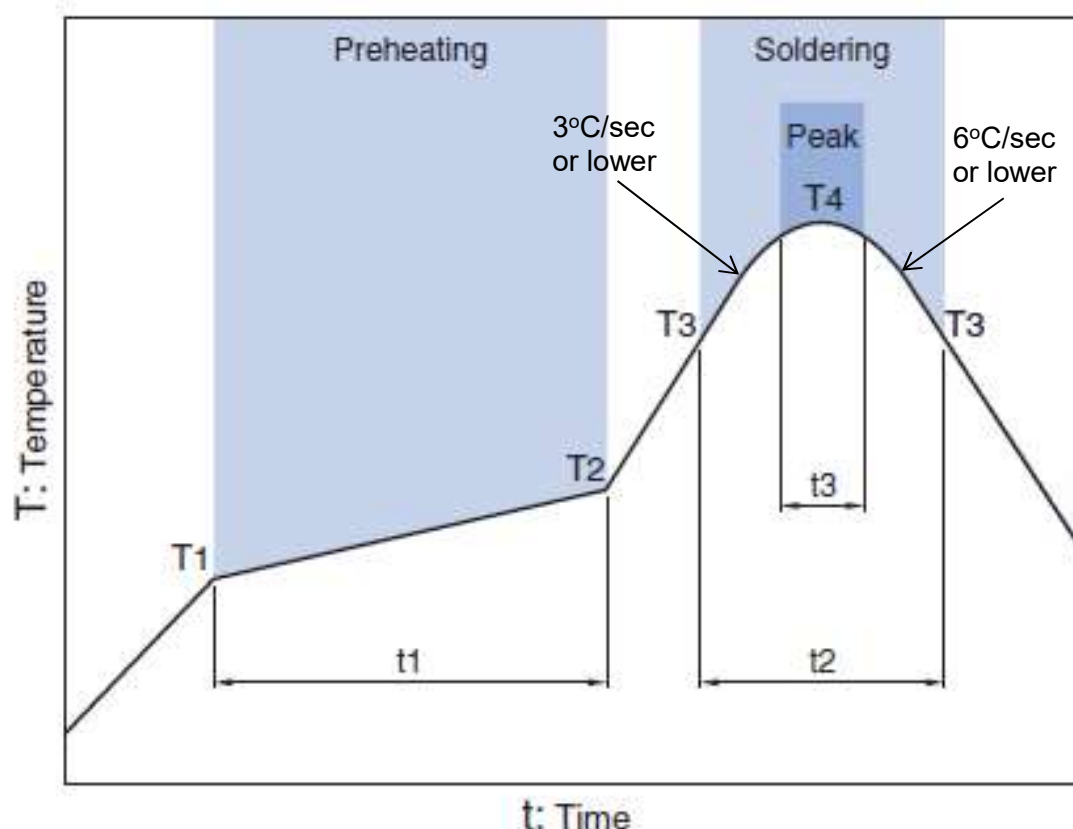
P/N	DPX107150DT-6030A2_Ver3.0N_20210610
Freq	
5150	57.73 / -7.14
7125	48.85 / -6.06
7150	48.68 / -5.65

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RECOMMENDED REFLOW 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)

GENERAL TECHNICAL INFORMATION

https://product.tdk.com/en/system/files?file=dam/doc/product/rf/rf/coupler/general_tech_info/rf_general-technical-info_02_en.pdf

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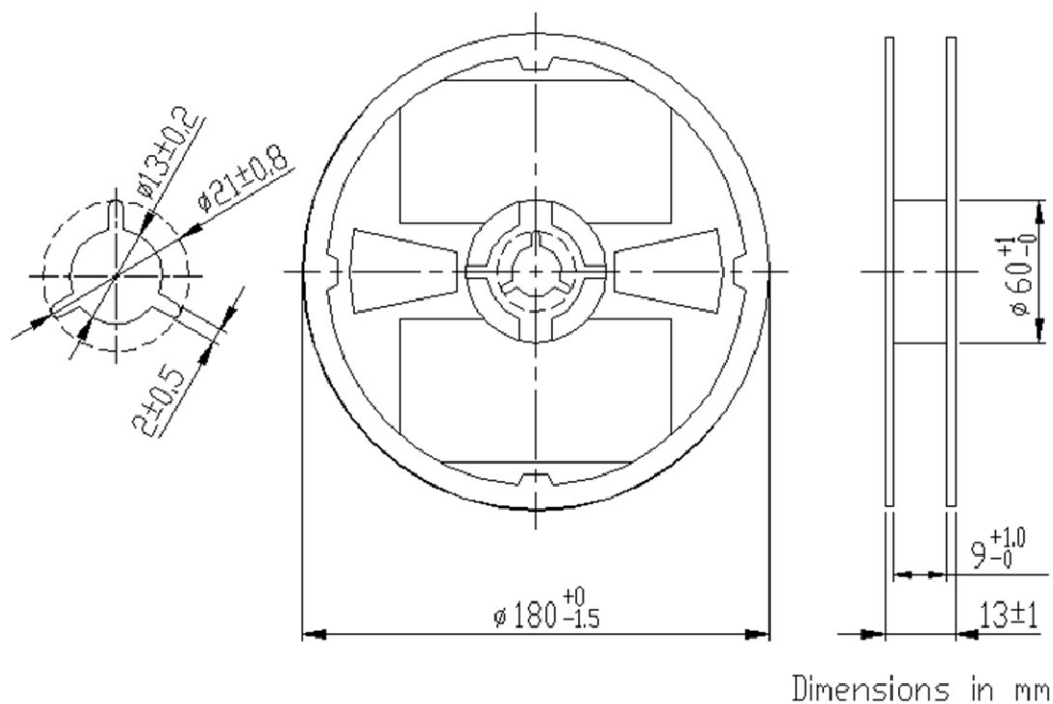
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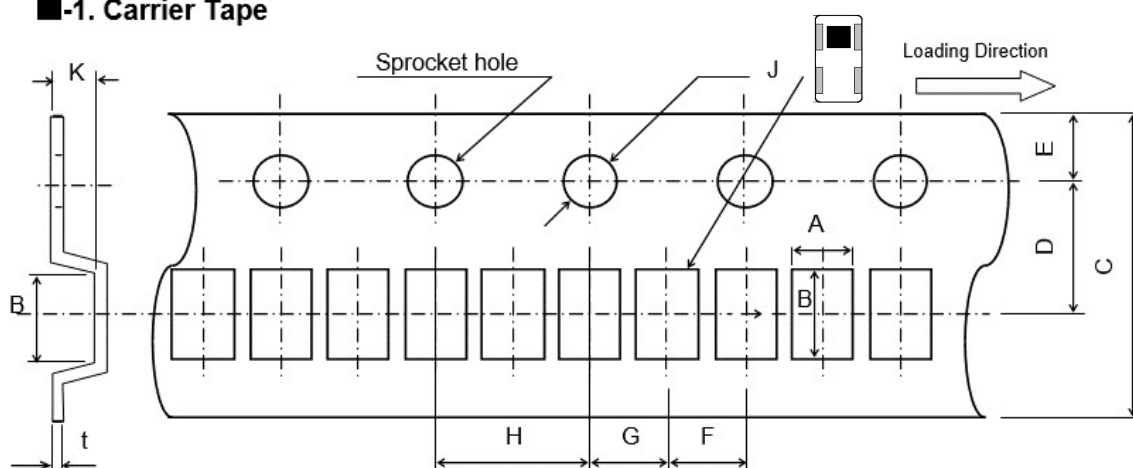
PACKAGING STYLE

Reel Dimensions



Carrier Tape

■-1. Carrier Tape



Dimensions (mm)

A	B	C	D	E	F	G	H	J	K	t
0.62	1.12	8.0	3.5	1.75	2.0	2.0	4.0	1.5	0.48	0.2
± 0.05	± 0.05	± 0.2	± 0.05	± 0.1	± 0.05	± 0.05	± 0.05	$\pm 0.1/-0$	MAX	± 0.05

STANDARD PACKAGE QUANTITY (pieces/reel)
10,000

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REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.



REMINDERS

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.

1. Aerospace/Aviation equipment
2. Transportation equipment (cars, electric trains, ships, etc.)
3. Medical equipment
4. Power-generation control equipment
5. Atomic energy-related equipment
6. Seabed equipment
7. Transportation control equipment
8. Public information-processing equipment
9. Military equipment
10. Electric heating apparatus, burning equipment
11. Disaster prevention/crime prevention equipment
12. Safety equipment
13. 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.