



Nov. 2019 Ver.5.0
TDK Corporation

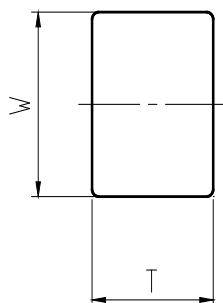
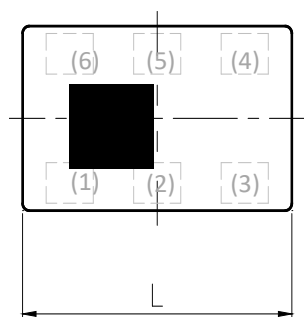
Multilayer Diplexer
For LTE

DPX Series 2.0x1.25mm [EIA 0805] TYPE

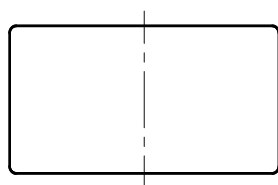
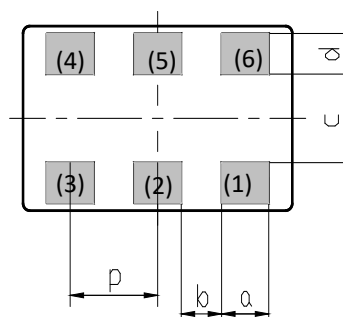
P/N: **DPX202200DT-4205B2**

DPX202200DT-4205B2**SHAPES AND DIMENSIONS**

[Top View]



[Bottom View]



Dimensions (mm)

L	W	T	a	b	c	d	p
2.00	1.25	0.90	0.35	0.30	0.60	0.275	0.65
+/-0.10	+/-0.10	Max	+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10

Terminal functions

(1)	GND
(2)	Common Port
(3)	GND

(4)	High-Band Port
(5)	GND
(6)	Low-Band Port

TEMPERATURE RANGE

Operating temperature	Storage temperature
-40 to +85 °C	-40 to +85 °C

TERMINATION FINISH

Material
Au plate

DPX202200DT-4205B2

■ ELECTRICAL CHARACTERISTICS

(Measurement)

Low-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	617 to 960	-	0.51	0.60
Insertion Loss (dB) (-40 to +85 °C)	617 to 960	-	-	0.70
VSWR (Low-Band Port)	617 to 960	-	1.20	1.92
Attenuation (dB)	1427 to 1511	18	21	-
	1559 to 1619	25	28	-
	1805 to 2170	25	27	-
	2400 to 2700	30	32	-
	3400 to 3800	20	24	-
	5150 to 5850	20	26	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

High-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	1427 to 1559	-	0.64	0.75
	1559 to 2200	-	0.53	0.60
Insertion Loss (dB) (-40 to +85 °C)	1427 to 1559	-	-	0.85
	1559 to 2200	-	-	0.70
VSWR (High-Band Port)	1427 to 2200	-	1.35	1.92
Attenuation (dB)	617 to 960	22	24	-
	3400 to 3800	16	28	-
	5150 to 5850	25	28	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

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ELECTRICAL CHARACTERISTICS

(Measurement)

Common

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
VSWR (Common Port)	617 to 960	-	1.21	1.92
	1427 to 2200	-	1.32	1.92
Isolation (dB)	617 to 960	20	23	-
	1427 to 1559	20	24	-
	1559 to 2200	25	27	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

MAXIMUM RATINGS

Parameter		TDK Spec		Conditions
		Min.	Max.	
Operating temperature (°C)		−40 to +85 °C		
Storage temperature (°C)		−40 to +85 °C		
Power Handling (W)	Common Port	-	4	Duty 50% for GSM
		-	2	CW for LTE
	Low-Band Port	-	4	Duty 50% for GSM
		-	2	CW for LTE
	High-Band Port	-	4	Duty 50% for GSM
		-	2	CW for LTE
Human Body Model : HBM @Each Port (V)		-1000	1000	100pF / 1500ohm
Machine Model : MM @Each Port (V)		-150	150	200pF / 0ohm
Charged Device Model : CDM @Each Port (V)		-500	500	Relative humidity : 51%RH max

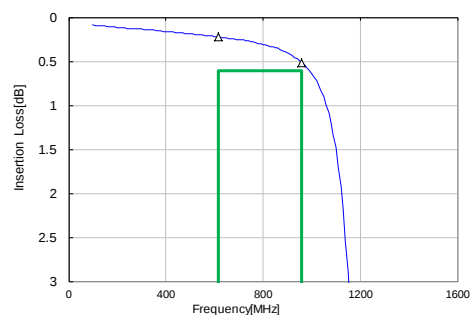
Ambient temperature : +25+/-5°C

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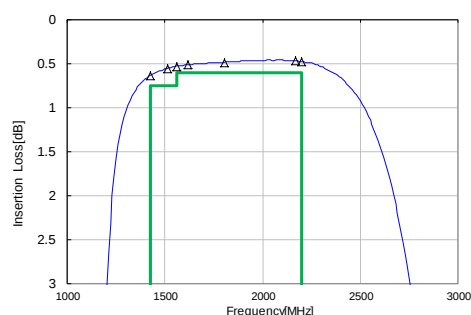
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DPX202200DT-4205B2**FREQUENCY CHARACTERISTICS**

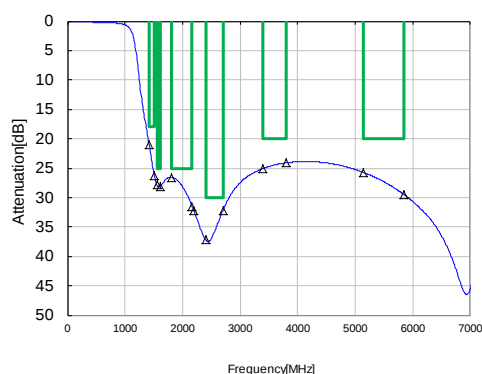
(Measurement)

Low-Band Port Insertion Loss S21

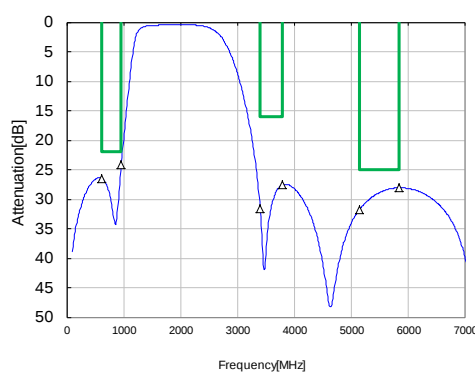
617 MHz	0.22 dB
960 MHz	0.51 dB

High-Band Port Insertion Loss S31

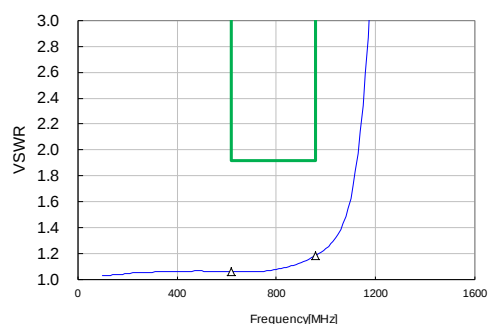
1427 MHz	0.64 dB
1511 MHz	0.55 dB
1559 MHz	0.53 dB
1619 MHz	0.51 dB
1805 MHz	0.48 dB
2170 MHz	0.47 dB
2200 MHz	0.47 dB

Low-Band Port Attenuation S21

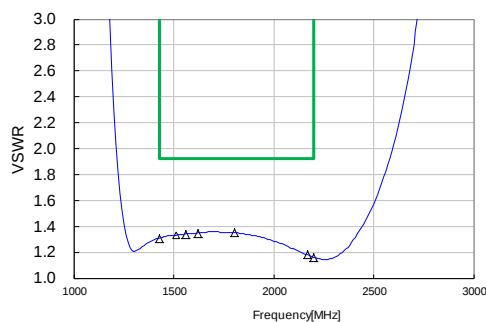
1427 MHz	21.0 dB
1511 MHz	26.3 dB
1559 MHz	27.8 dB
1619 MHz	28.1 dB
1805 MHz	26.5 dB
2170 MHz	31.5 dB
2200 MHz	32.3 dB
2400 MHz	37.2 dB
2700 MHz	32.2 dB
3400 MHz	25.1 dB
3800 MHz	24.1 dB
5150 MHz	25.7 dB
5850 MHz	29.5 dB

High-Band Port Attenuation S31

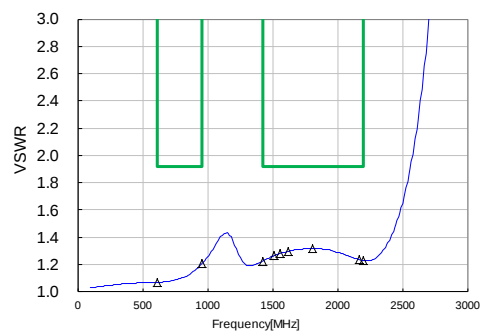
617 MHz	26.5 dB
960 MHz	24.1 dB
3400 MHz	31.6 dB
3800 MHz	27.5 dB
5150 MHz	31.7 dB
5850 MHz	28.1 dB

Low-Band Port VSWR S22

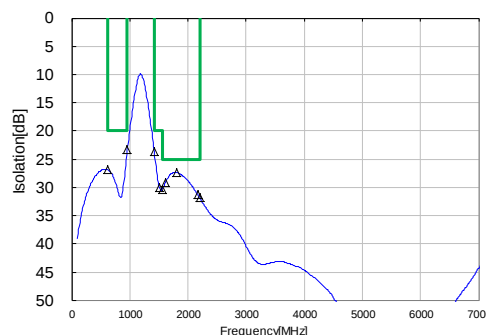
617 MHz	1.06 dB
960 MHz	1.19 dB

High-Band Port VSWR S33

1427 MHz	1.31 dB
1511 MHz	1.33 dB
1559 MHz	1.34 dB
1619 MHz	1.35 dB
1805 MHz	1.35 dB
2170 MHz	1.18 dB
2200 MHz	1.16 dB

Common Port VSWR S11

617 MHz	1.07 dB
960 MHz	1.21 dB
1427 MHz	1.22 dB
1511 MHz	1.26 dB
1559 MHz	1.28 dB
1619 MHz	1.29 dB
1805 MHz	1.32 dB
2170 MHz	1.24 dB
2200 MHz	1.23 dB

Isolation (Low - High) S23

617 MHz	26.9 dB
960 MHz	23.3 dB
1427 MHz	23.7 dB
1511 MHz	30.1 dB
1559 MHz	30.4 dB
1619 MHz	29.2 dB
1805 MHz	27.4 dB
2170 MHz	31.3 dB
2200 MHz	31.8 dB

All specifications are subject to change without notice.

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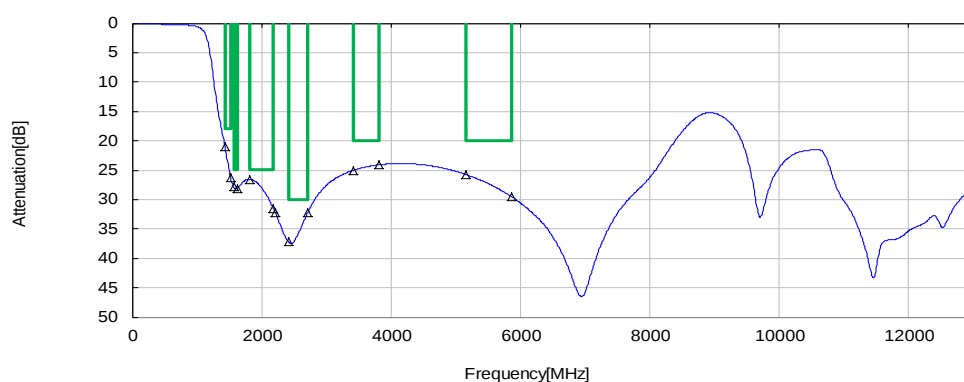
DPX202200DT-4205B2

FREQUENCY CHARACTERISTICS

(Measurement)

Low-Band Port Attenuation

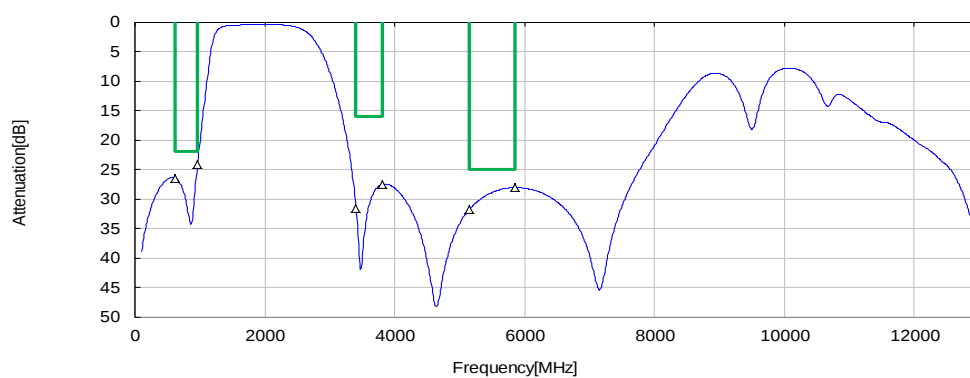
S21



1427 MHz	21.0 dB
1511 MHz	26.3 dB
1559 MHz	27.8 dB
1619 MHz	28.1 dB
1805 MHz	26.5 dB
2170 MHz	31.5 dB
2200 MHz	32.3 dB
2400 MHz	37.2 dB
2700 MHz	32.2 dB
3400 MHz	25.1 dB
3800 MHz	24.1 dB
5150 MHz	25.7 dB
5850 MHz	29.5 dB

High-Band Port Attenuation

S31

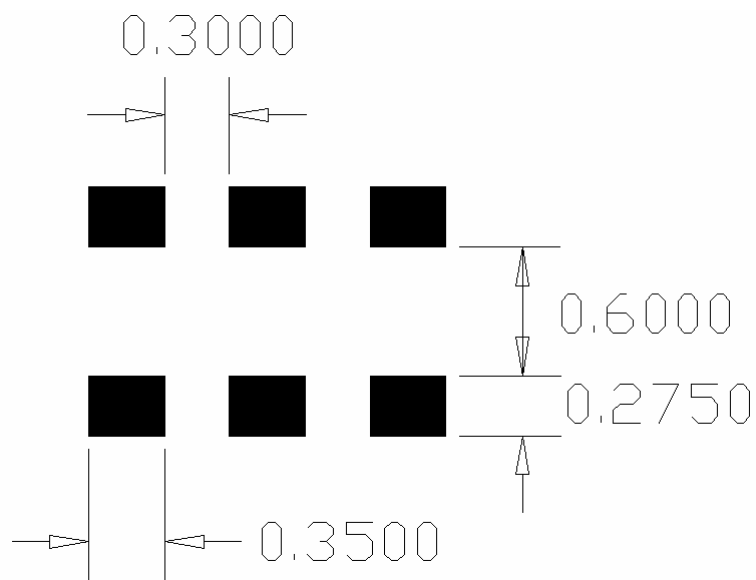


617 MHz	26.5 dB
960 MHz	24.1 dB
3400 MHz	31.6 dB
3800 MHz	27.5 dB
5150 MHz	31.7 dB
5850 MHz	28.1 dB

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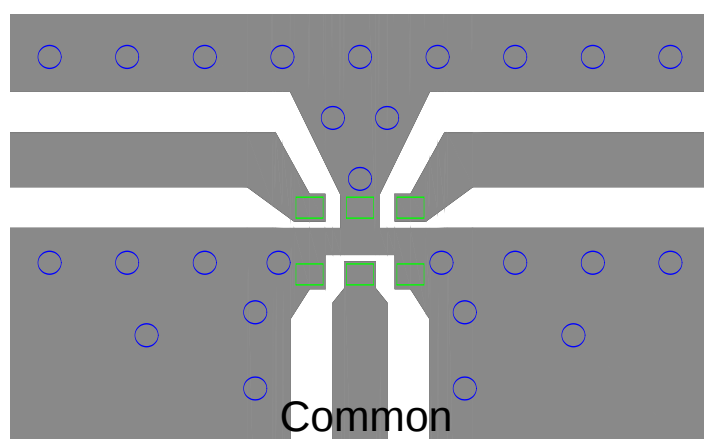
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RECOMMENDED LAND PATTERN



Unit[mm]

EVALUATION BOARD



- Thru Hole
- Resist
- Surface Pattern

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

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

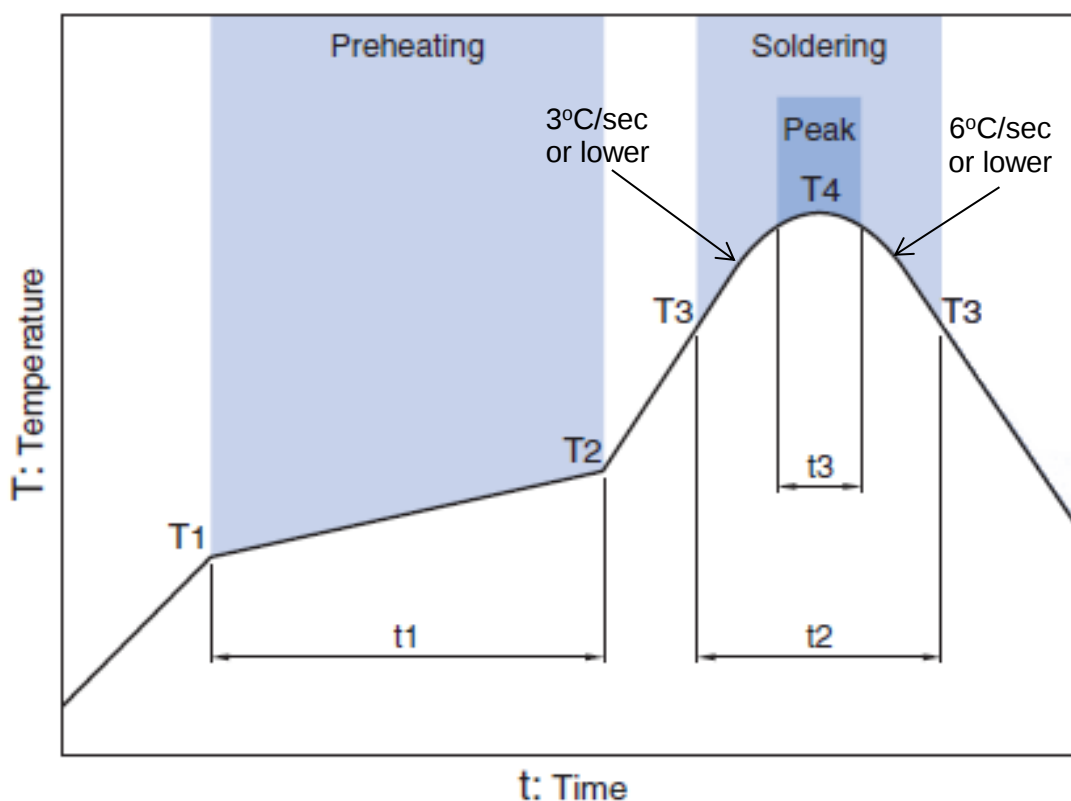
ENVIRONMENT INFORMATION

RoHS Statement
RoHS Compliance

DPX202200DT-4205B2

RECOMMENDED REFLOW PROFILE

Pb free solder



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

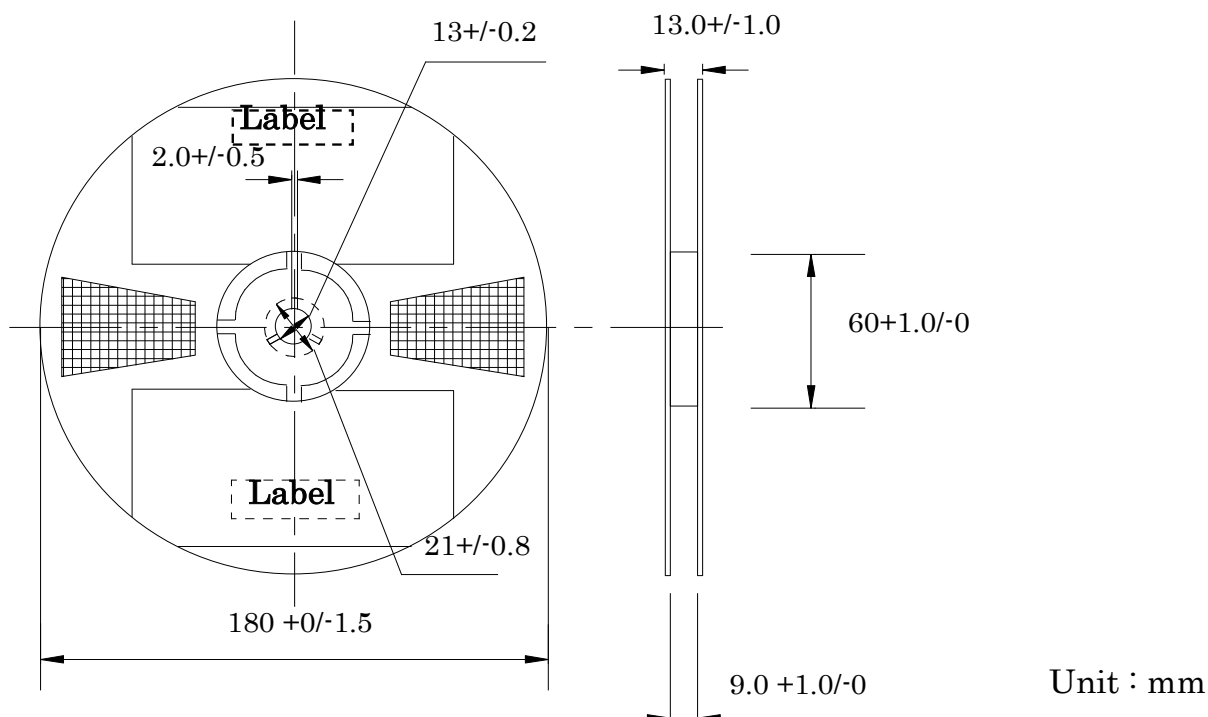
* t3 : Time within 5°C of actual peak temperature

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

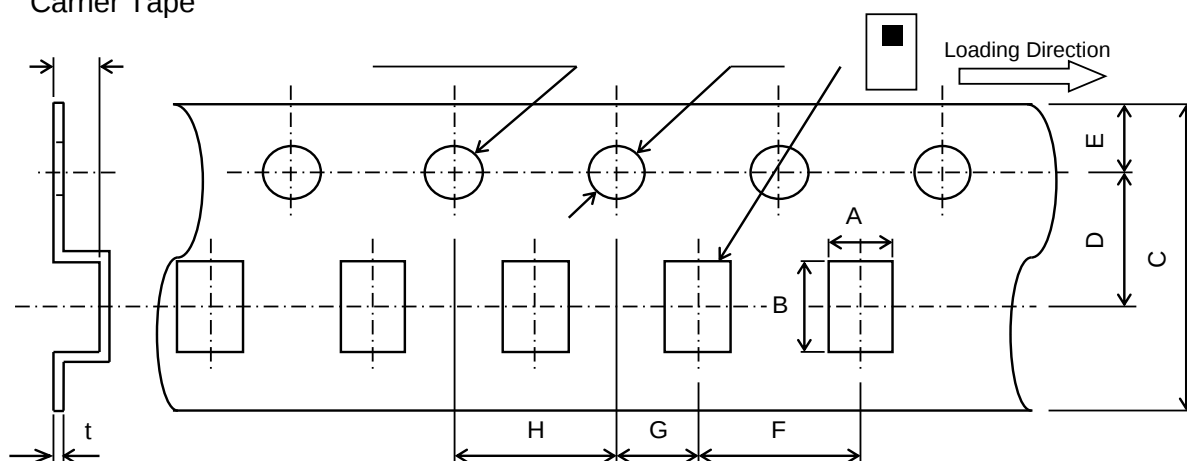
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PACKAGING STYLE

Reel Dimensions



Carrier Tape



Dimensions (mm)

Unit : mm

A	B	C	D	E	F	G	H	J	K	t
1.45	2.2	8.0	3.5	1.75	4.0	2.0	4.0	1.5	1.15	0.25
+/-0.05	+/-0.05	+0.3/-0.1	+/-0.05	+/-0.1	+/-0.1	+/-0.05	+/-0.1	+0.1/-0	MAX	+/-0.05

STANDARD PACKAGE QUANTITY
(pieces/reel)

2,000

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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.