



Jan. 2022 Ver.6.0
TDK Corporation

Multilayer Triplexer

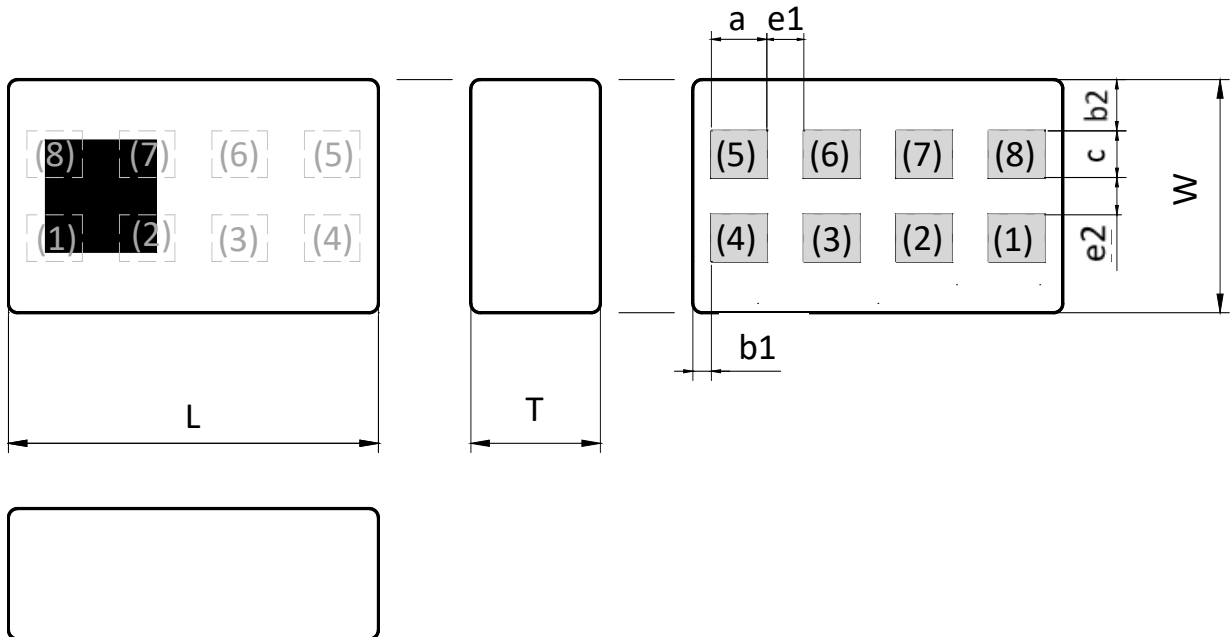
For 1559-1606MHz / 2400-2500MHz / 4900-5950MHz

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

P/N: **TPX205950MT-7052C1**

TPX205950MT-7052C1

SHAPES AND DIMENSIONS



Dimensions (mm)

L	W	T	a	b1	b2	c	e1	e2
2.00	1.25	0.75	0.30	0.10	0.275	0.25	0.20	0.20
+/-0.15	+/-0.15	Max	+/-0.05	+/-0.10	+/-0.10	+/-0.05	+/-0.05	+/-0.05

Terminal functions

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

(5)	Middle-Band Port
(6)	GND
(7)	High-Band Port
(8)	GND

TERMINATION FINISH

Material
Ag

TPX205950MT-7052C1

ELECTRICAL CHARACTERISTICS

(Measurement)

Low-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	1559 to 1606	-	0.47	0.65
Insertion Loss (dB) (-40 to +85 °C)	1559 to 1606	-	0.53	0.75
Return Loss (dB)	1559 to 1606	10	20	-
Attenuation (dB)	2400 to 2500	20	31	-
	4900 to 5950	25	29	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

Middle-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	2400 to 2500	-	0.86	1.04
Insertion Loss (dB) (-40 to +85 °C)	2400 to 2500	-	0.93	1.18
Return Loss (dB)	2400 to 2500	10	14	-
Attenuation (dB)	1560 to 1606	25	37	-
	4800 to 5000	30	35	-
	7200 to 7500	25	41	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

High-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	4900 to 5100	-	0.68	1.00
	5150 to 5950	-	0.76	0.90
Insertion Loss (dB) (-40 to +85 °C)	4900 to 5100	-	0.78	1.10
	5150 to 5950	-	0.86	1.20
Return Loss (dB)	4900 to 5950	10	13	-
Attenuation (dB)	1560 to 1606	30	36	-
	2400 to 2500	33	41	-
	6900 to 7200	3	6	-
	7300 to 7800	7	15	-
	10300 to 11700	20	31	-
	15300 to 16200	12	17	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

All specifications are subject to change without notice.

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ELECTRICAL CHARACTERISTICS

(Measurement)

Common

Parameter	Frequency (MHz)	TDK Spec			
		Min.	Typ.	Max.	
Isolation (dB)	MB to LB	1559 to 1606	25	30	-
		2400 to 2500	20	30	-
	MB to HB	2400 to 2500	33	39	-
		5150 to 5950	30	36	-
	HB to LB	1559 to 1606	30	37	-
		5150 to 5950	25	30	-
Return Loss (dB)	1559 to 1606	10	18	-	
	2400 to 2500	10	15	-	
	4900 to 5950	10	14	-	
Characteristic Impedance (ohm)		50 (Nominal)			

Ta = +25+/-5°C

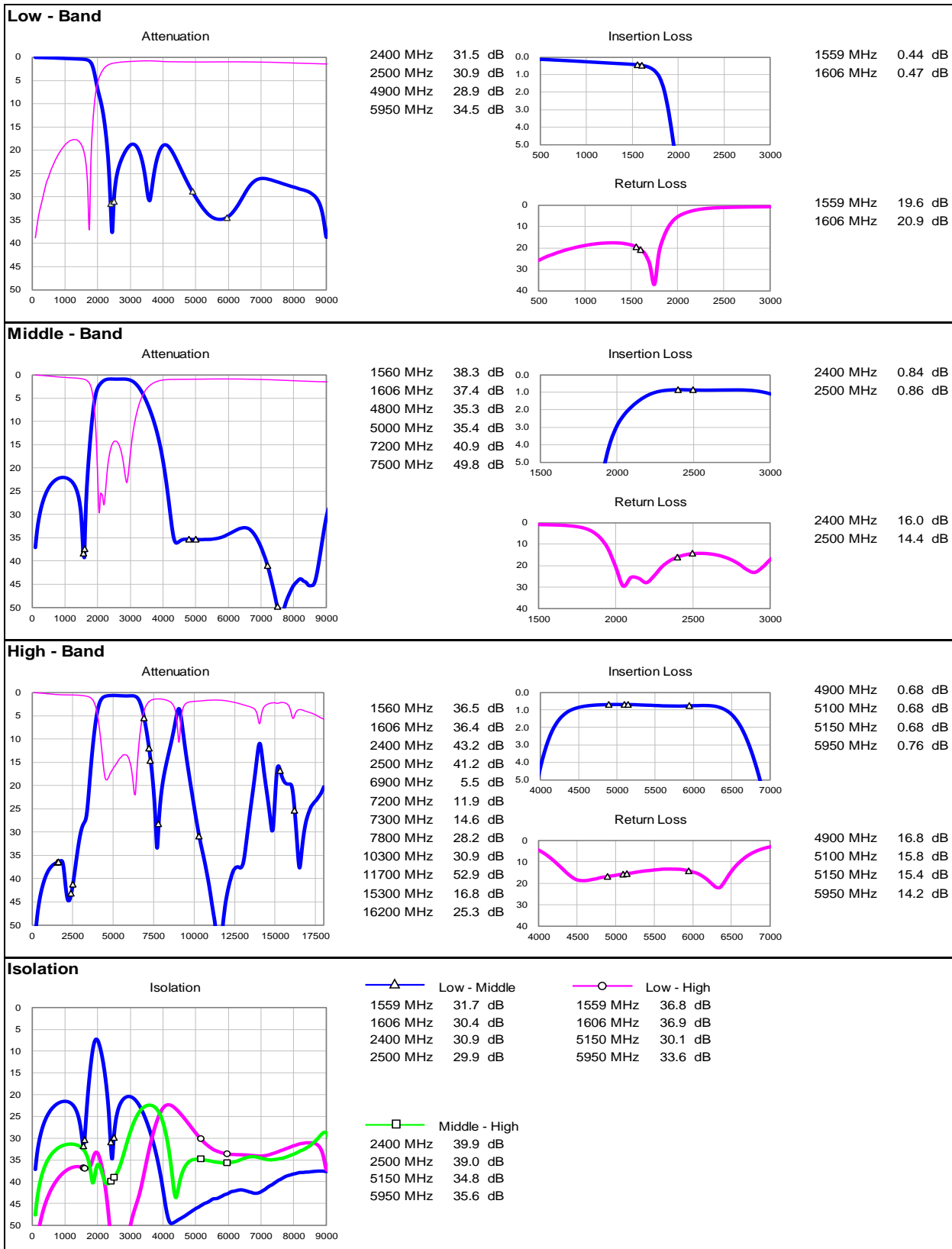
MAXIMUM RATINGS

Parameter	TDK Spec	Conditions	
Operating temperature (°C)	-40 to +85 °C		
Storage temperature (°C)	-40 to +85 °C		
Power Handling (W) *1	Frequency (MHz)		
Common	1559 to 1606	1 CW	
	2400 to 2500	1 CW	
	4900 to 5950	1 CW	
	Low-Band	1559 to 1606	1 CW
	Middle-Band	2400 to 2500	1 CW
	High-Band	4900 to 5950	1 CW
Human Body Model : HBM	@Each Port (V)	+/-1000 100pF / 1500ohm	
Machine Model : MM	@Each Port (V)	+/-150 200pF / 0ohm	
Charged Device Model : CDM	@Each Port (V)	+/-500 Humidity : 60%RH max	

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

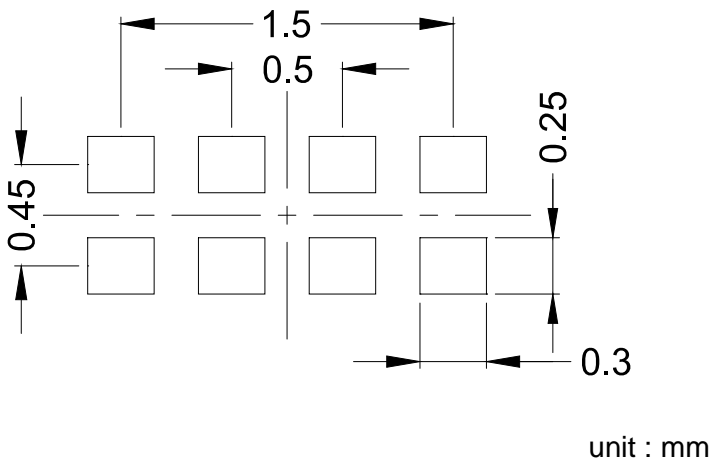
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FREQUENCY CHARACTERISTICS

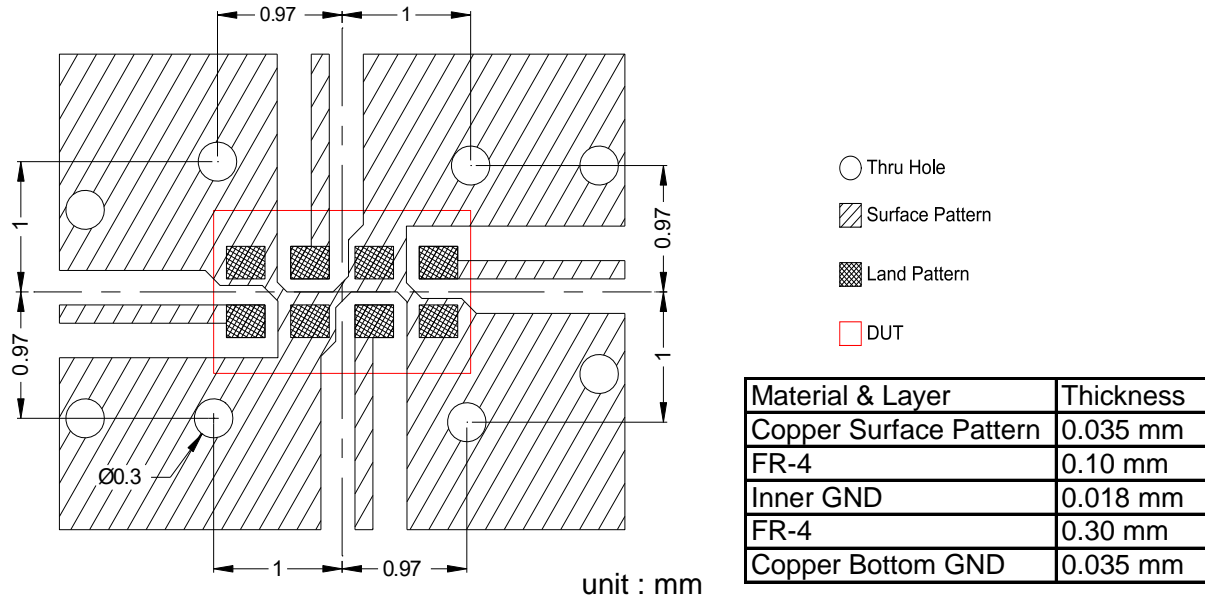


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RECOMMENDED LAND PATTERN



EVALUATION BOARD



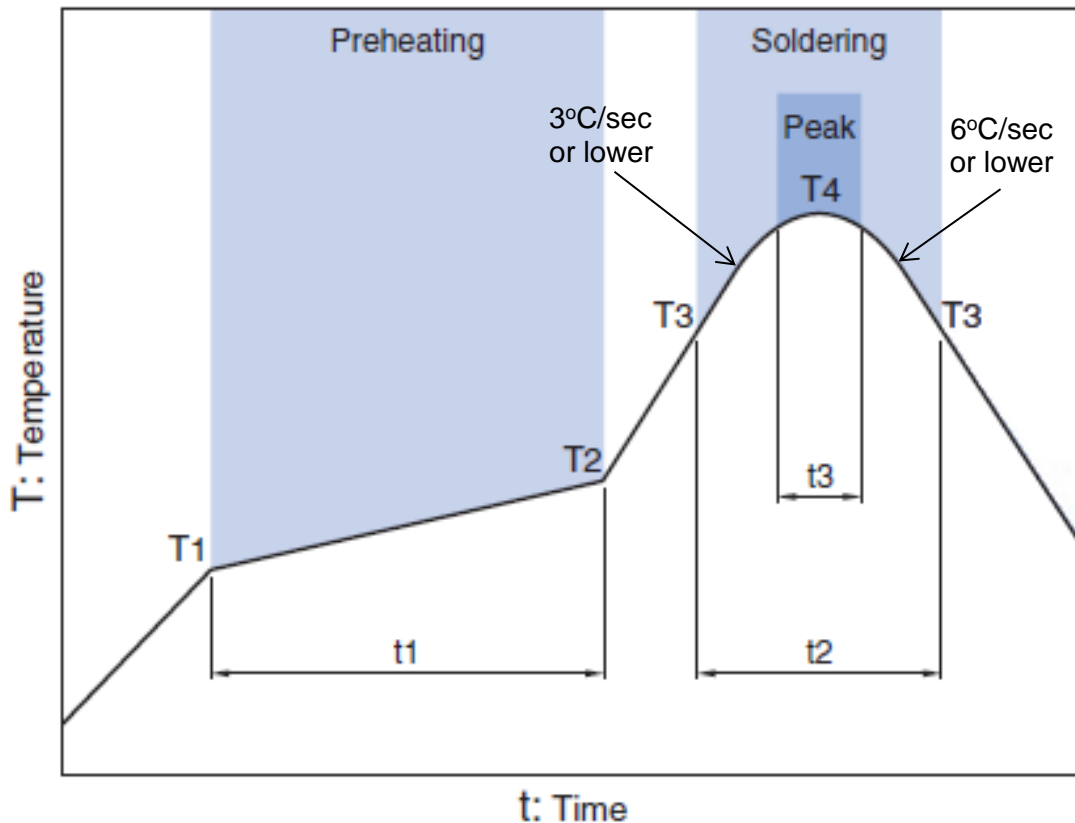
* Line width should be designed to match 50 ohm characteristic impedance depending on PCB material and thickness.

** 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

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

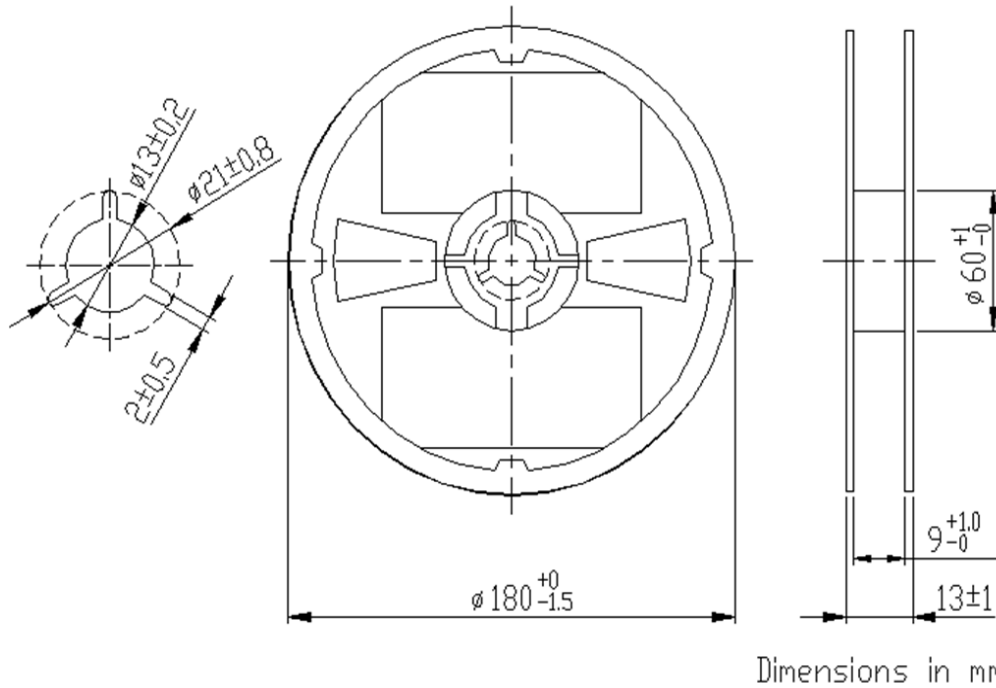
* t3 : Time within 5°C of actual peak temperature

The maximum number of reflow is 3.

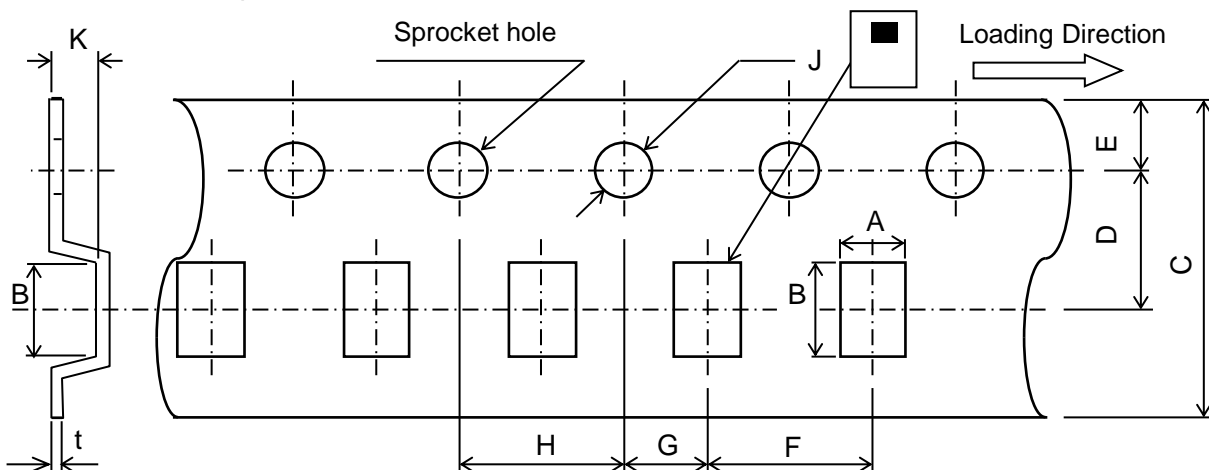
Note: Lead free solder is recommended.
Recommended solder is Sn-3.0Ag-0.5Cu. (M705 by Senju Metal Industry)

TPX205950MT-7052C1**PACKAGING STYLE**

Reel Dimensions



Carrier Tape



Dimensions (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	0.95	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

All specifications are subject to change without notice.

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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 catalog 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 catalog.

- | | |
|---|--|
| (1) Aerospace/Aviation equipment | (8) Public information-processing equipment |
| (2) Transportation equipment (cars, electric trains, ships, etc.) | (9) Military equipment |
| (3) Medical equipment | (10) Electric heating apparatus, burning equipment |
| (4) Power-generation control equipment | (11) Disaster prevention/crime prevention equipment |
| (5) Atomic energy-related equipment | (12) Safety equipment |
| (6) Seabed equipment | (13) Other applications that are not considered general-purpose applications |
| (7) Transportation control equipment | |

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.