



Jan. 2022 Ver.3.0  
TDK Corporation

## Multilayer Triplexer

For 698-960MHz / 1427-2170MHz / 2496-5000MHz

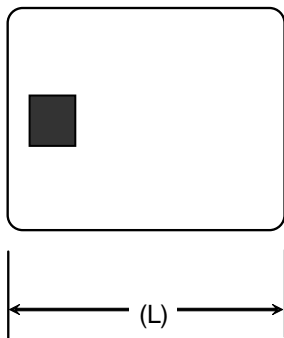
TPX Series 2.5x2.0mm [EIA 1008] TYPE

P/N: **TPX255000MT-7019B6**

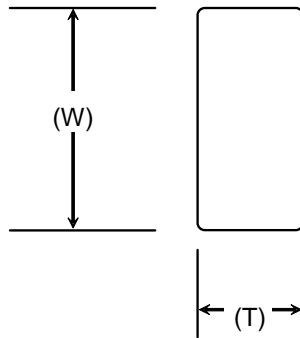
## TPX255000MT-7019B6

### SHAPES AND DIMENSIONS

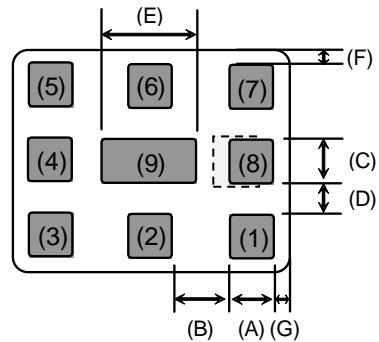
[ Top View ]



[ Side View ]



[ Bottom View ]



Dimensions (mm)

L	W	T	A	B	C	D	E	F	G
2.50	2.00	0.90	0.40	0.55	0.40	0.30	0.90	0.10	0.10
+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10

Terminal functions

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

(6)	GND
(7)	Common Port
(8)	GND
(9)	GND

### TERMINATION FINISH

Material
Au plate

## TPX255000MT-7019B6

### ■ ELECTRICAL CHARACTERISTICS

( Measurement )

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	698 to 960	-	0.50	0.70
Return Loss (dB)	698 to 803	14	17.0	-
	803 to 960	14	20.7	-
Attenuation (dB)	1427 to 1511	7	10.7	-
	1710 to 2170	12	15.3	-
	2500 to 2690	27	32.2	-
	3400 to 3600	35	51.3	-
	3300 to 4200	35	44.3	-
	3300 to 3800	35	48.0	-
4400 to 5000	35	51.3	-	
Characteristic Impedance (ohm)		50 (Nominal)		

 $T_a = +25\pm 5^\circ\text{C}$ 

#### Middle-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	1427 to 1511	-	0.98	1.20
	1710 to 2170	-	0.83	1.20
Return Loss (dB)	1427 to 1511	14	20.5	-
	1710 to 2170	14	16.4	-
Attenuation (dB)	698 to 960	14	18.2	-
	2500 to 2690	10	15.4	-
	3400 to 3600	15	19.2	-
	3300 to 4200	15	18.1	-
	3300 to 3800	15	18.1	-
	4400 to 5000	15	29.4	-
Characteristic Impedance (ohm)		50 (Nominal)		

 $T_a = +25\pm 5^\circ\text{C}$ 

#### High-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	2496 to 2690	-	1.32	1.50
	3400 to 3800	-	0.29	0.60
	3300 to 4200	-	0.43	0.60
	3300 to 3800	-	0.43	0.60
	4400 to 5000	-	0.50	0.60
Return Loss (dB)	2496 to 2690	14	17.7	-
	3400 to 3800	14	15.9	-
	3300 to 4200	10	15.4	-
	3300 to 3800	14	17.8	-
	4400 to 5000	10	12.3	-
Attenuation (dB)	698 to 960	18	20.3	-
	1427 to 1511	16	18.9	-
	1710 to 2170	15	21.7	-
Characteristic Impedance (ohm)		50 (Nominal)		

 $T_a = +25\pm 5^\circ\text{C}$ 

All specifications are subject to change without notice.

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## TPX255000MT-7019B6

### ■ ELECTRICAL CHARACTERISTICS

( Measurement )

#### Common

Parameter		Frequency (MHz)	TDK Spec		
			Min.	Typ.	Max.
Isolation (dB)	LB - MB	698 to 960	14	17.4	-
		1427 to 1511	7	10.4	-
		1710 to 2170	13	16.5	-
		3300 to 4200	13	18.3	-
		3300 to 3800	13	18.1	-
		4400 to 5000	13	19.0	-
	LB - HB	698 to 960	15	19.6	-
		2496 to 2690	30	37.4	-
		3400 to 3800	30	38.7	-
		3300 to 4200	30	38.3	-
		3300 to 3800	30	38.3	-
		4400 to 5000	30	42.0	-
	MB - HB	1427 to 1511	15	19.4	-
		1710 to 2170	15	20.0	-
		2496 to 2690	13	16.7	-
		3400 to 3800	15	19.5	-
		3300 to 4200	15	19.0	-
		3300 to 3800	15	19.0	-
Return Loss (dB)	698 to 803	14	17.0	-	
	803 to 960	14	20.7	-	
	1427 to 1511	14	20.5	-	
	1710 to 2170	14	16.4	-	
	2496 to 2690	14	17.7	-	
	3400 to 3800	14	15.9	-	
	3300 to 4200	10	15.4	-	
	3300 to 3800	14	17.8	-	
4400 to 5000	10	12.3	-		

Ta = +25+/-5°C

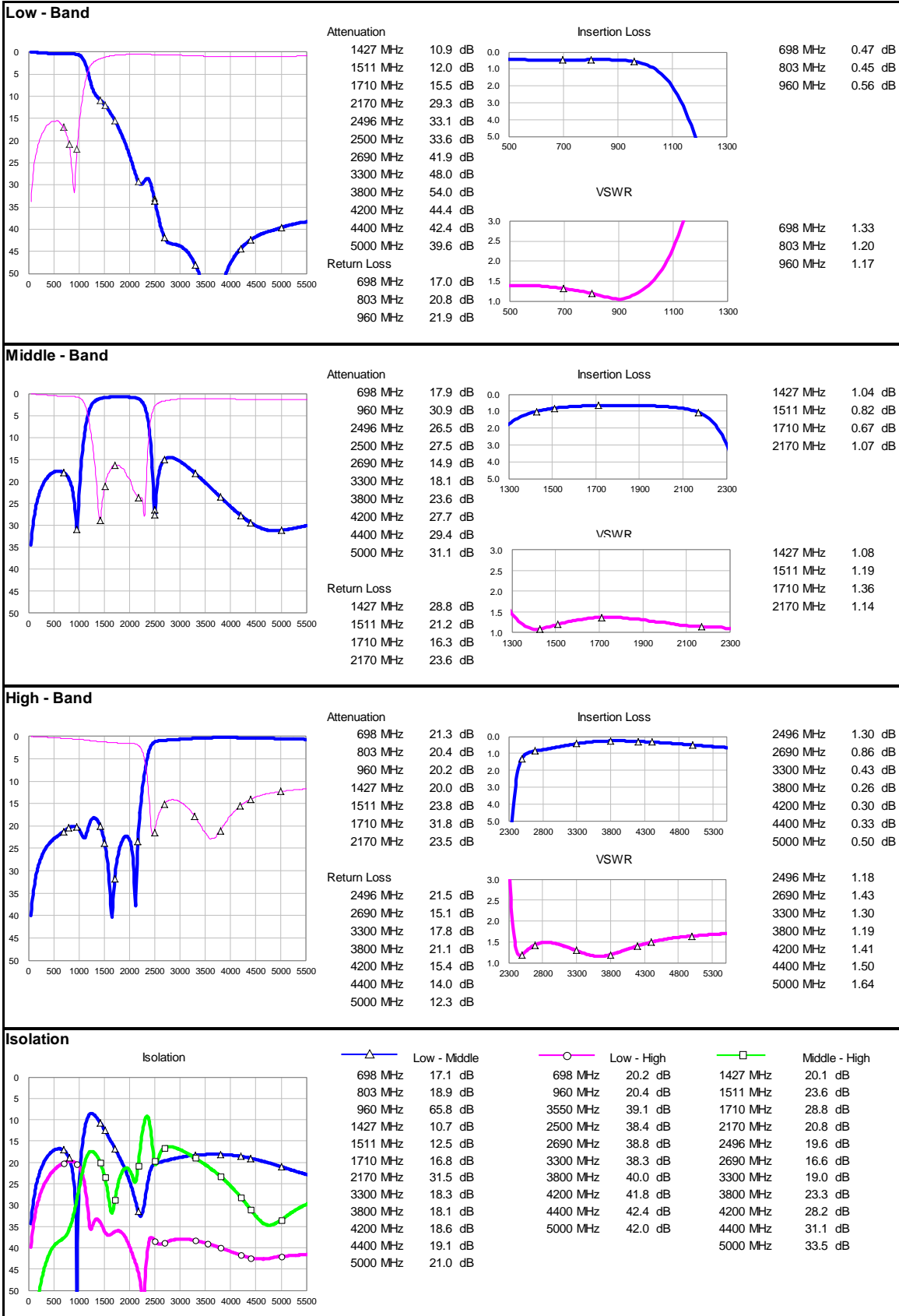
### ■ MAXIMUM RATINGS

Parameter		TDK Spec	Conditions
Operating temperature (°C)		-40 to +85 °C	
Storage temperature (°C)		-40 to +85 °C	
Power Handling (W) *1	Frequency (MHz)		
Low-Band	698 to 960	4	CW Duty 50%
Middle-Band	1427 to 2170	3	CW Duty 50%
High-Band	2496 to 5000	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

# TPX255000MT-7019B6

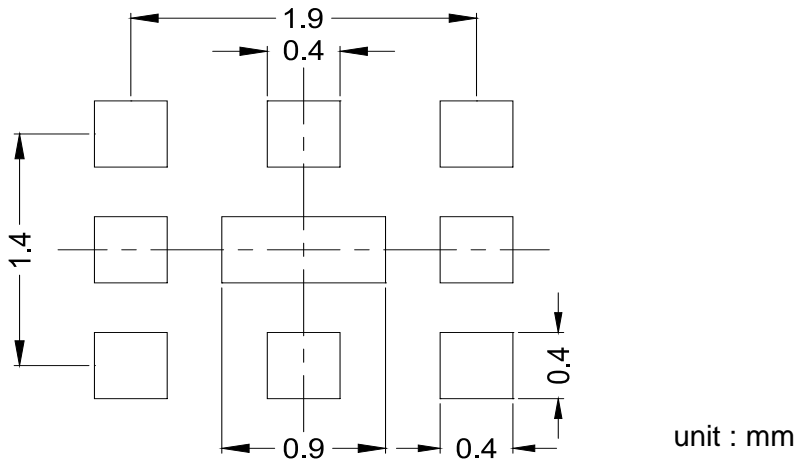
## FREQUENCY CHARACTERISTICS



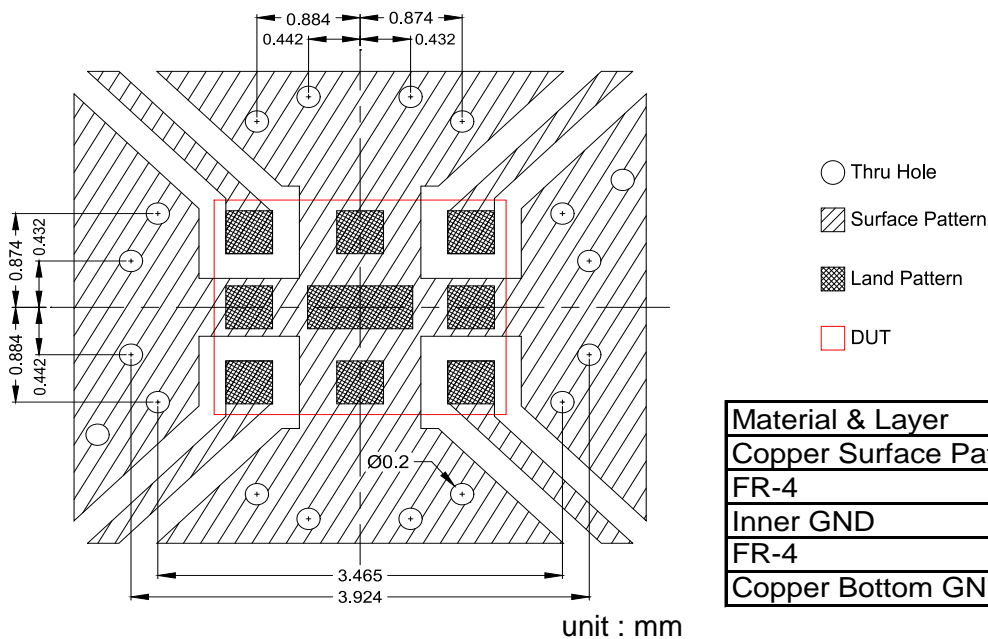
All specifications are subject to change without notice.

## TPX255000MT-7019B6

### RECOMMENDED LAND PATTERN



### EVALUATION BOARD



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

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

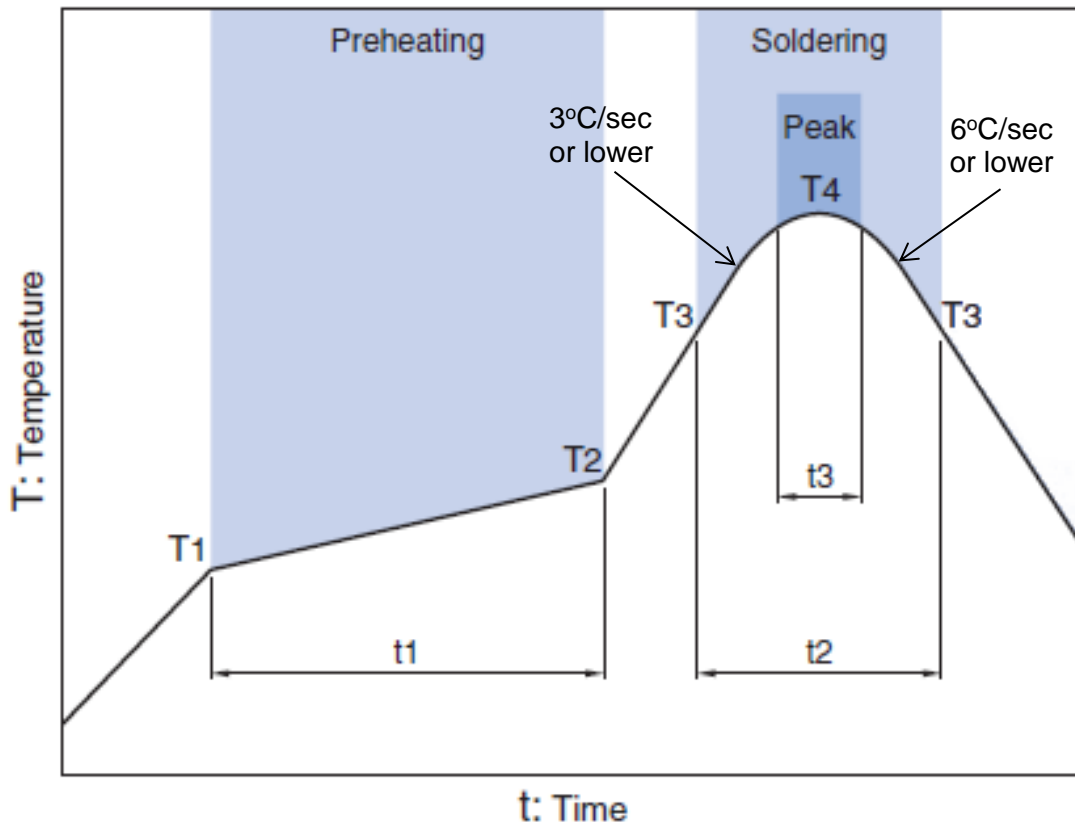
\*\* The position of the through hole which have possibility of influence to the performance are indicated by dimension line.

### ENVIRONMENT INFORMATION

RoHS Statement  
 RoHS Compliance

## TPX255000MT-7019B6

### RECOMMENDED REFLOW PROFILE



Preheating			Soldering			
Temp.		Time	Critical zone (T3 to T4)		Peak	
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

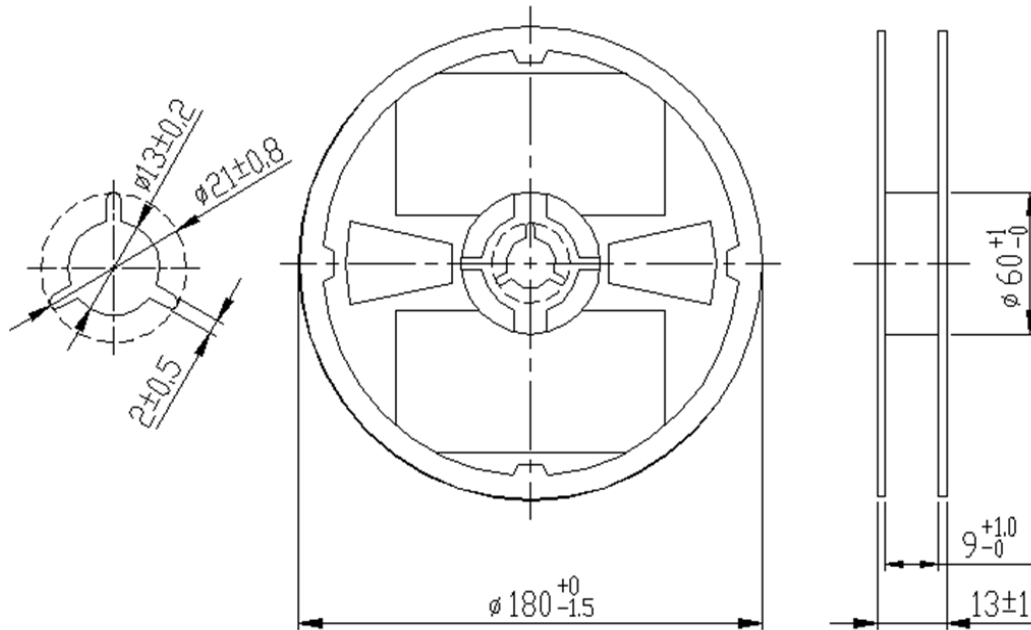
\* t3 : Time within 5°C of actual peak temperature

The maximum number of reflow is 3.

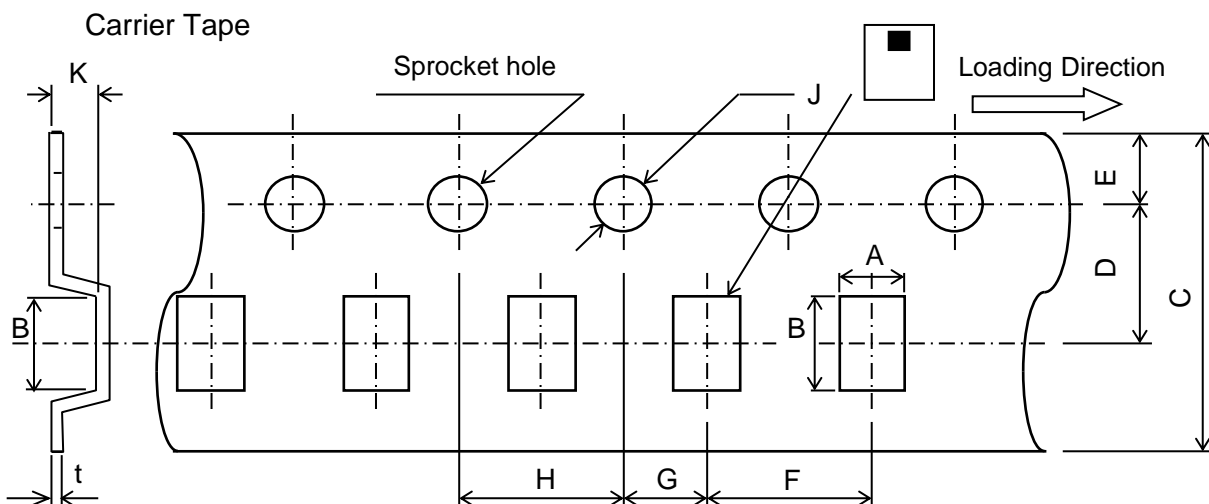
Note: Lead free solder is recommended.  
Recommended solder is Sn-3.0Ag-0.5Cu. (M705 by Senju Metal Industry)

**TPX255000MT-7019B6****PACKAGING STYLE**

## Reel Dimensions



Dimensions in mm



## Dimensions (mm)

A	B	C	D	E	F	G	H	J	K	t
2.2	2.7	8.0	3.5	1.75	4.0	2.0	4.0	1.5	1.15	0.25
$\pm 0.05$	$\pm 0.05$	$+0.3/-0.1$	$\pm 0.05$	$\pm 0.1$	$\pm 0.1$	$\pm 0.05$	$\pm 0.1$	$+0.1/-0$	MAX	$\pm 0.05$

**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 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.