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# LAN COMPONENTS

## TLA SERIES(Conformity to RoHS Directive)

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### Precautions

The TDK products in this data are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.).

They are neither intend nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury (atomic energy control instruments, airplane or spaceship instruments, transportation instrument, traffic signal instruments, combustion control instrument, medical instruments, all types of safety devices, etc.).

- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
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# LAN Components TLA Series

Conformity to RoHS Directive

## PULSE TRANSFORMERS

### TLA-3T101LF(-T)/108LF(-T) ISO8802.3(IEEE802.3) 10BASE2/5/-T

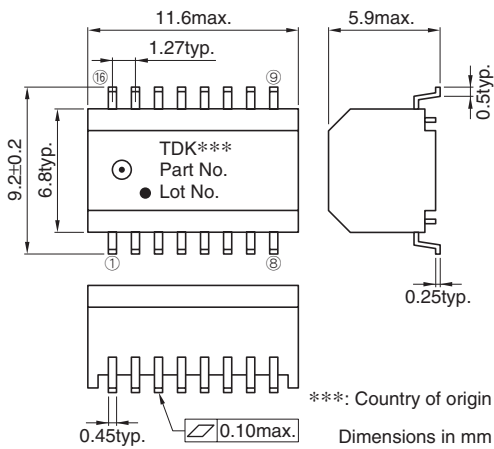
#### FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package(1.27mm=50mil pin pitch).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-3T10□LF-T: Tape and reel, TLA-3T10 □LF: Bulk).

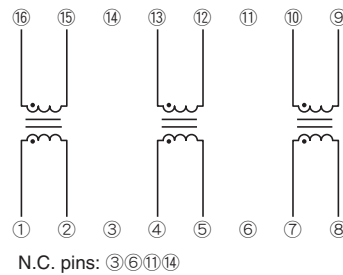
#### GENERAL SPECIFICATIONS

Pulse transformer	3	
Port	1	
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage	Erms:2000V[60s]	

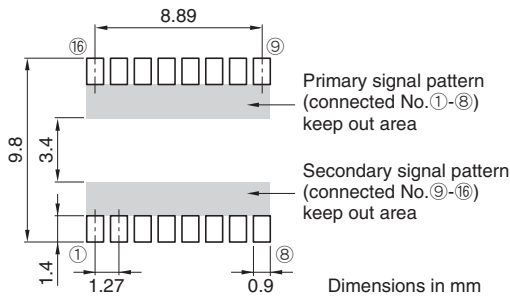
#### SHAPES AND DIMENSIONS



#### CIRCUIT DIAGRAM



#### RECOMMENDED PC BOARD PATTERN



#### ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①②:⑯⑰ ④⑤:⑬⑭ ⑦⑧:⑩⑨	Inductance (μH)typ.[100kHz]	Leakage inductance (μH)max.[100kHz] ①-②[⑯-⑰ shorted] ④-⑤[⑬-⑭ shorted] ⑦-⑧[⑩-⑨ shorted]	Inter-winding stray capacitance (pF)max.[100kHz] ①②-⑯⑰ ④⑤-⑬⑭ ⑦⑧-⑩⑨	DC resistance (Ω)max. ①-②,⑯-⑰ ④-⑤,⑬-⑭ ⑦-⑧,⑩-⑨
TLA-3T101LF(-T)	1:1	100	0.25	10	0.35, 0.35
TLA-3T108LF(-T)	1:1	75	0.25	10	0.35, 0.35

• Ta=25°C

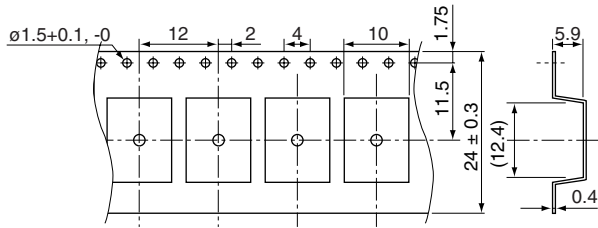
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

## PACKAGING STYLES

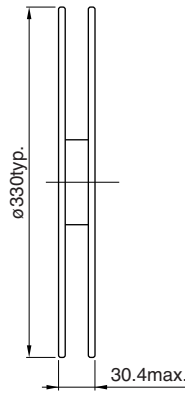
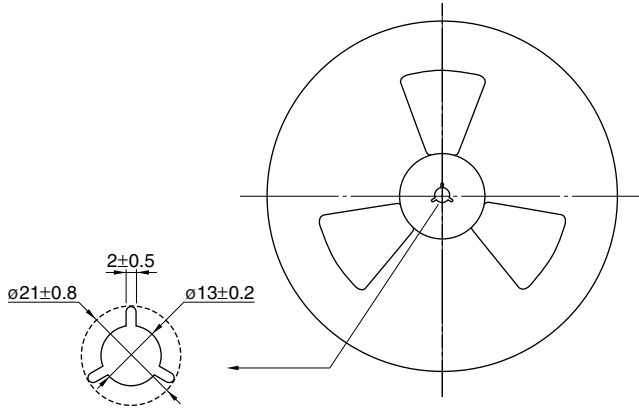
Quantity : 1000pieces/reel

## TAPE DIMENSIONS



Dimensions in mm

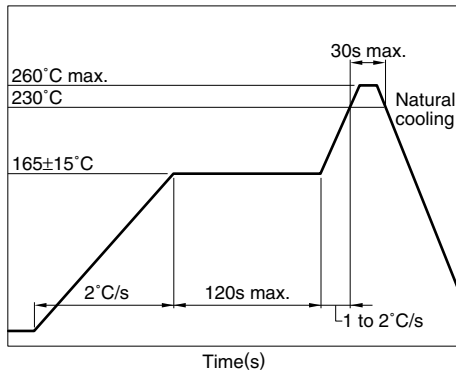
## REEL DIMENSIONS



Dimensions in mm

## RECOMMENDED SOLDERING CONDITION

### REFLOW SOLDERING



- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

### RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

Humidity: 60(%)RH max.

# TLA-3T106LF(-T)/107LF(-T) ISO8802.3(IEEE802.3) 10BASE-T

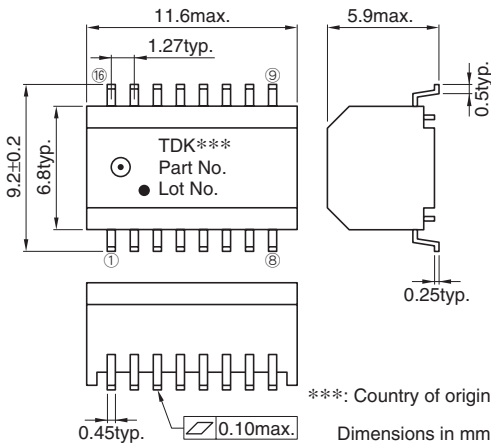
## FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package(1.27mm=50mil pin pitch).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-3T10□LF-T: Tape and reel, TLA-3T10 □LF: Bulk).

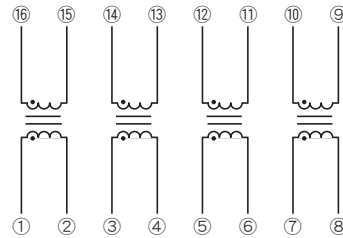
## GENERAL SPECIFICATIONS

Pulse transformer		4
Port		4
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms: 2000V[60s]

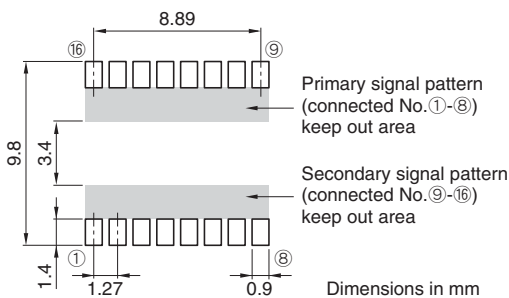
## SHAPES AND DIMENSIONS



## CIRCUIT DIAGRAM



## RECOMMENDED PC BOARD PATTERN



## ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①②:⑯⑰ ③④:⑭⑮ ⑤⑥:⑫⑬ ⑦⑧:⑩⑪	Inductance ( $\mu$ H)min.[100kHz]	Leakage inductance ( $\mu$ H)max.[100kHz] ①-②[⑯-⑰ shorted] ③-④[⑭-⑮ shorted] ⑤-⑥[⑫-⑬ shorted] ⑦-⑧[⑩-⑪ shorted]	Inter-winding stray capacitance (pF)max.[100kHz] ①②-⑯⑰ ③④-⑭⑮ ⑤⑥-⑫⑬ ⑦⑧-⑩⑪	DC resistance ( $\Omega$ )max. ①-②, ⑯-⑰ ③-④, ⑭-⑮ ⑤-⑥, ⑫-⑬ ⑦-⑧, ⑩-⑪
TLA-3T106LF(-T)	1:1	130	0.3	12	0.4, 0.4
TLA-3T107LF(-T)	1:1.41	130	0.3	12	0.4, 0.5

- $T_a=25^\circ\text{C}$

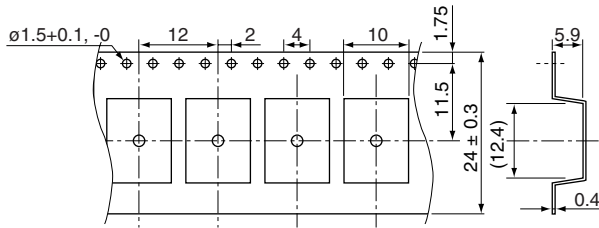
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

## PACKAGING STYLES

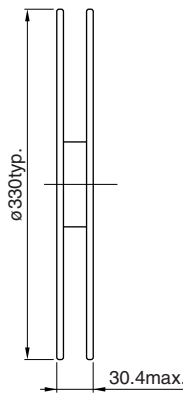
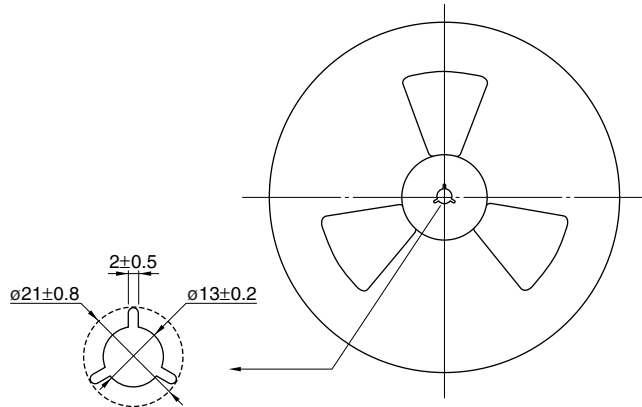
Quantity : 1000pieces/reel

## TAPE DIMENSIONS



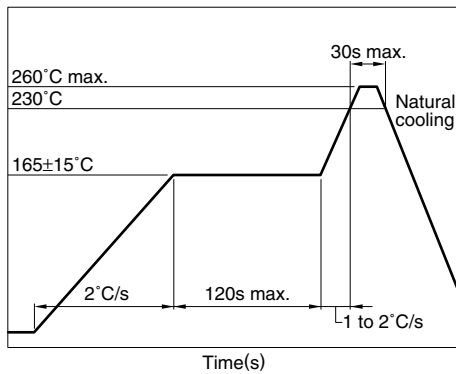
Dimensions in mm

## REEL DIMENSIONS



Dimensions in mm

## RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



## RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

Humidity: 60(%)RH max.

- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

# TLA-3T105LF(-T)/109LF(-T)/110LF(-T)/112LF(-T) ISO8802.3(IEEE802.3) 10BASE-T

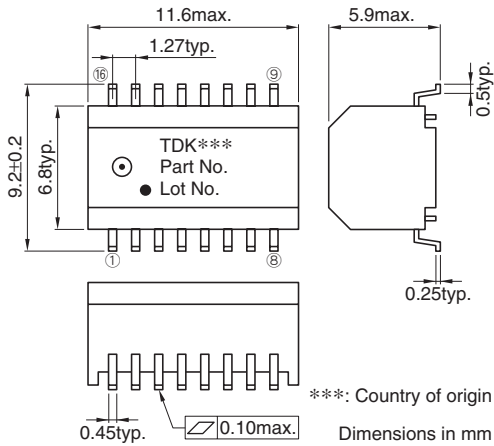
## FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package(1.27mm=50mil pin pitch).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-3T1 □□LF-T: Tape and reel, TLA-3T1 □□LF: Bulk).

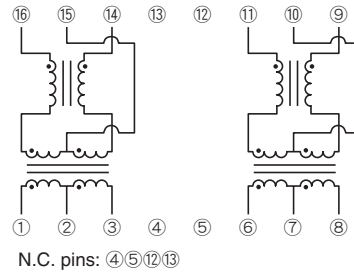
## GENERAL SPECIFICATIONS

Pulse transformer	2	
Common-mode choke	2	
Port	1	
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage	Erms: 2000V[60s]	

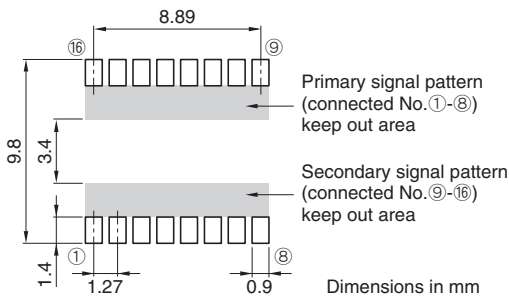
## SHAPES AND DIMENSIONS



## CIRCUIT DIAGRAM



## RECOMMENDED PC BOARD PATTERN



## ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①②③:⑬⑫⑪⑩⑨⑧⑦⑥	Inductance ( $\mu$ H)min.[100kHz] ①-③ ⑥-⑧	Leakage inductance ( $\mu$ H)max.[100kHz] ①-③[⑬-⑫ shorted] ⑥-⑧[⑪-⑩ shorted]	Inter-winding stray capacitance (pF)max.[100kHz] ①③-⑬⑫⑪⑩⑨⑧⑦⑥	DC resistance ( $\Omega$ )max. ①-③ ⑥-⑧
TLA-3T105LF(-T)	1CT:1CT	130	0.3	12	0.5
	1CT:1CT	130	0.3	12	0.5
TLA-3T109LF(-T)	2CT:1CT	130	0.95	12	0.5
	1CT:1CT	130	0.35	12	0.5
TLA-3T110LF(-T)	1CT:1CT	130	0.35	12	0.5
	1CT:1.41CT	130	0.35	12	0.5
TLA-3T112LF(-T)	1CT:1CT	130	0.35	12	0.85
	1CT:2.5CT	130	0.35	12	0.85

• Ta=25°C

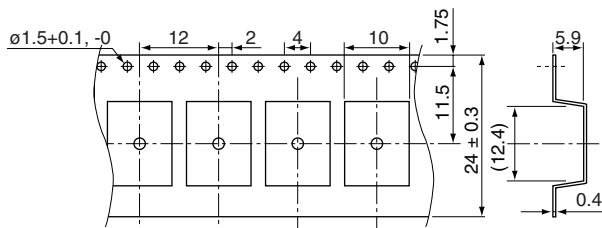
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

## PACKAGING STYLES

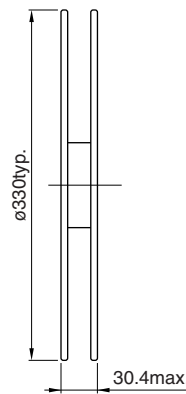
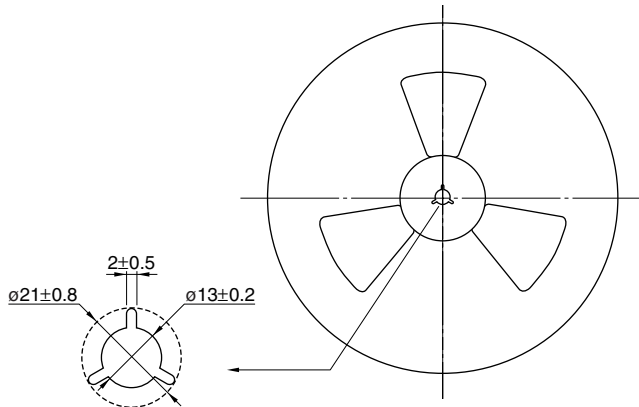
Quantity : 1000pieces/reel

## TAPE DIMENSIONS



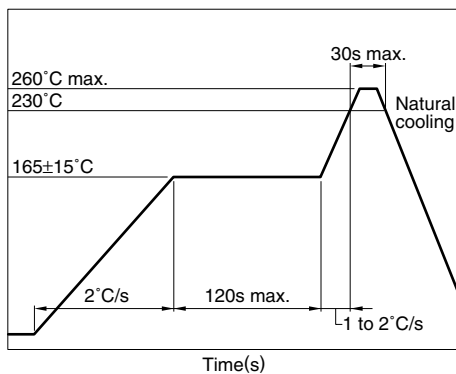
Dimensions in mm

## REEL DIMENSIONS



Dimensions in mm

## RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



## RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

Humidity: 60(%)RH max.

- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

## TLA-6T103LF(-T) ISO8802.3(IEEE802.3) 10/100BASE-TX & ATM

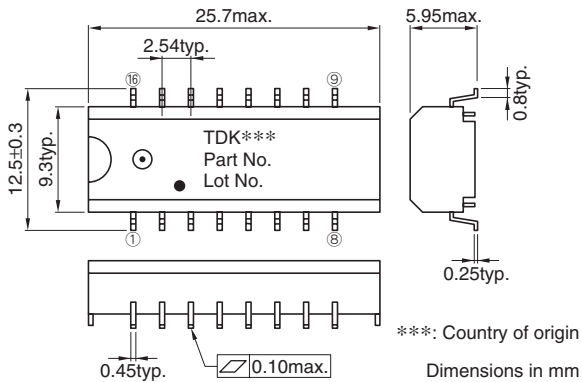
### FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package(2.54mm=100mil pin pitch).
- Excellent common-mode noise suppression.
- Inductance is 350μH or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-6T103LF-T: Tape and reel, TLA-6T103LF: Bulk).

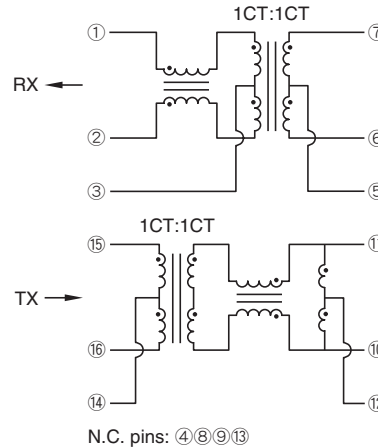
### GENERAL SPECIFICATIONS

Pulse transformer		2
Common-mode choke		2
Inductor		1
Port		1
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:1500V[60s]

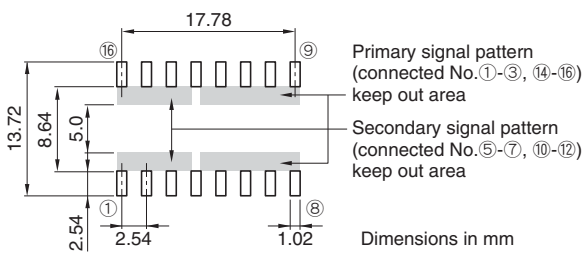
### SHAPES AND DIMENSIONS



### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN



### ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio	Inductance (μH)min. [DC bias 8mA, 100kHz]	Insertion loss (dB)max. [0.1 to 100MHz]	Inter-winding stray capacitance (pF)max.[100kHz]
	⑮⑭⑯ : ⑪⑫⑩ ①③② : ⑦⑤⑥	⑪-⑩ ⑦-⑥	⑮⑯-⑪⑩ ⑦⑥-①②	⑮⑯-⑪⑩ ①②-⑦⑥
TLA-6T103LF(-T)	1CT:1CT	350	1	25
	1CT:1CT	350	1	25

- Ta=25°C

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

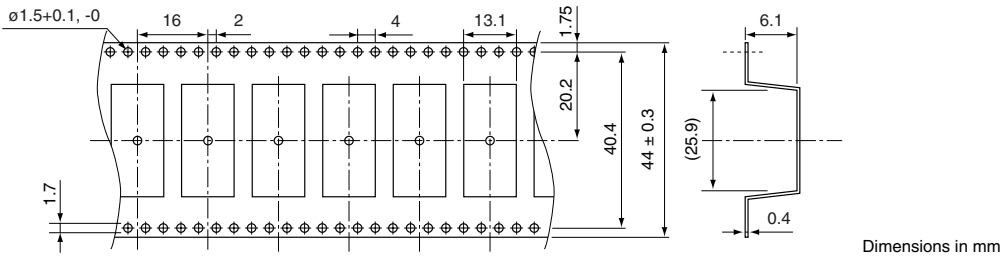
• All specifications are subject to change without notice.



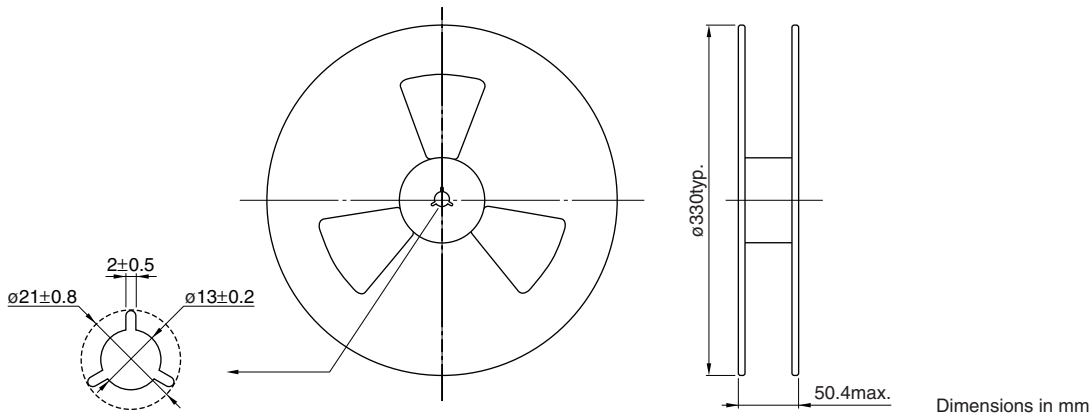
## PACKAGING STYLES

Quantity : 600pieces/reel

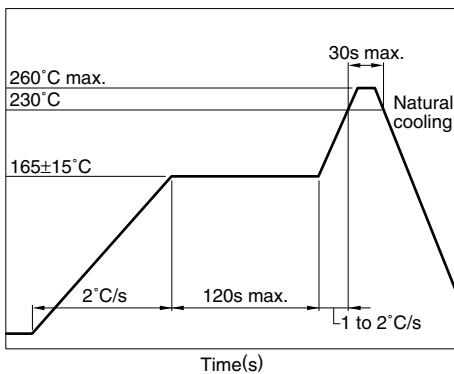
## TAPE DIMENSIONS



## REEL DIMENSIONS



## RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

## RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

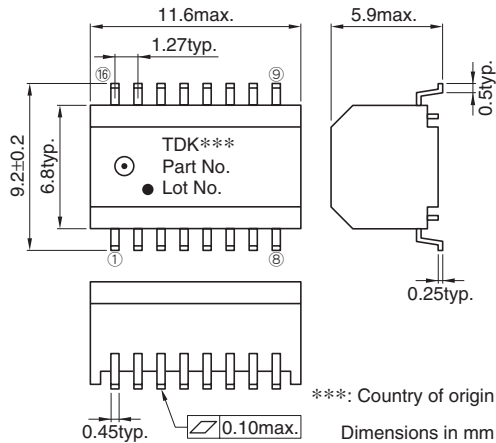
Humidity: 60(%)RH max.

# TLA-6T118LF/119LF/120LF/121LF/122LF(-T) ISO8802.3(IEEE802.3) 10/100BASE-TX

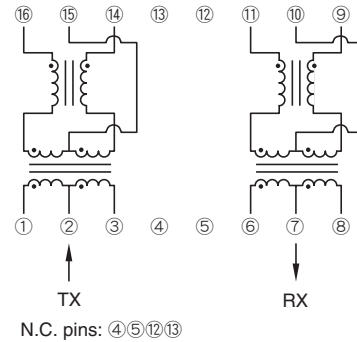
## FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package(1.27mm=50mil pin pitch).
- Excellent common mode noise suppression.
- Inductance is 350μH or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-6T1□□LF-T: Tape and reel, TLA-6T1 □□LF: Bulk).

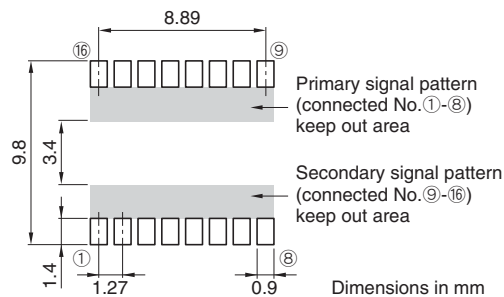
## SHAPES AND DIMENSIONS



## CIRCUIT DIAGRAM



## RECOMMENDED PC BOARD PATTERN



## ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①②③ : ⑩⑪⑫ ⑥⑦⑧ : ⑬⑭⑮	Inductance (μH)min. [DC bias 8mA, 100kHz]	Insertion loss (dB)max. [0.1 to 100MHz]	Inter-winding stray capacitance (pF)max.[100kHz]
TLA-6T118LF(-T)	1CT:1CT	350	1	25
TLA-6T119LF(-T)	1CT:1CT	350	1	25
TLA-6T120LF(-T)	1.41CT:1CT	350	2	25
TLA-6T121LF(-T)	1CT:1CT	350	1	25
TLA-6T122LF(-T)	1CT:1CT	350	1	25

• Ta=25°C

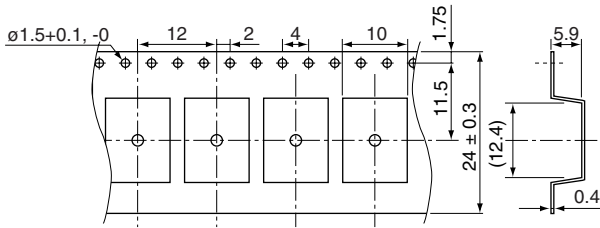
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

### PACKAGING STYLES

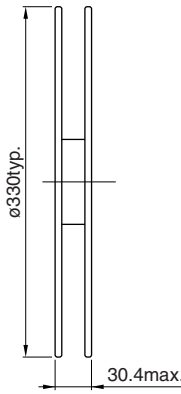
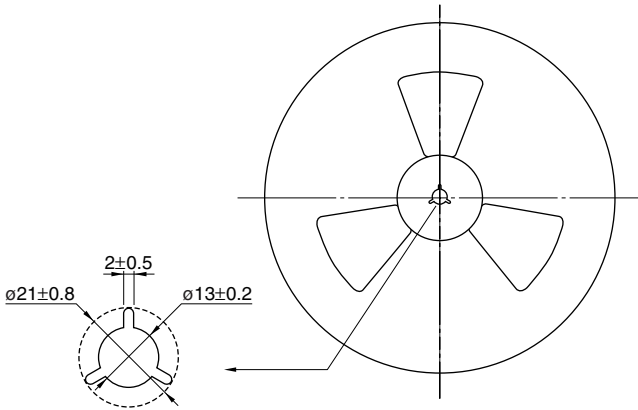
Quantity : 1000pieces/reel

### TAPE DIMENSIONS



Dimensions in mm

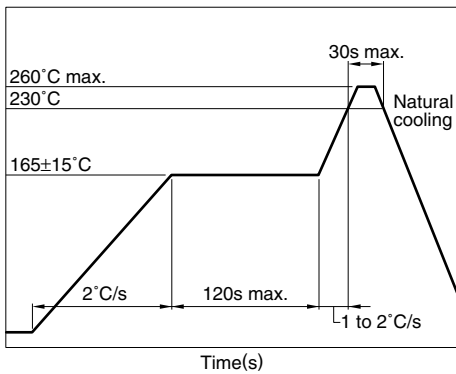
### REEL DIMENSIONS



Dimensions in mm

### RECOMMENDED SOLDERING CONDITION

#### REFLOW SOLDERING



### RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

Humidity: 60(%)RH max.

- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

# TLA-6T127LF(-T) ISO8802.3(IEEE802.3) 10/100BASE-TX, POWER OVER ETHERNET

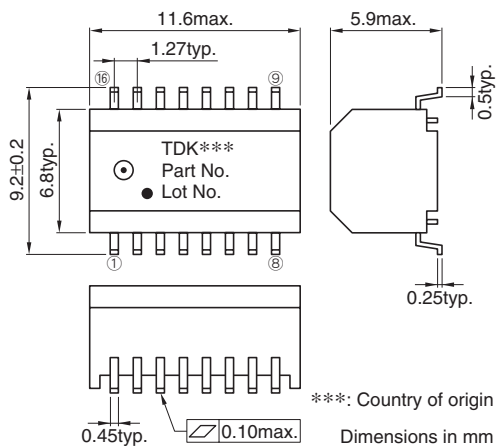
## FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package(1.27mm=50mil pin pitch).
- Inductance is 350μH or greater (f=100kHz, DC bias=8mA).
- Allowable current is 350mA max.
- Excellent common mode noise suppression under the power transmission.
- Packaging specification is taping and bulk(TLA-6T127LF-T: Tape and reel, TLA-6T127LF: Bulk).

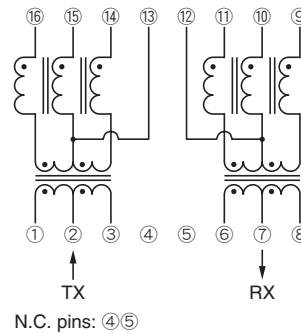
## GENERAL SPECIFICATIONS

Pulse transformer		2
Common-mode choke		2
Port		1
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:1500V[60s]

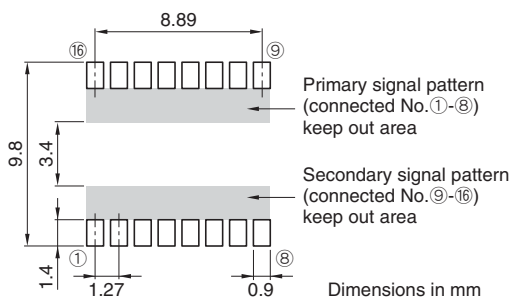
## SHAPES AND DIMENSIONS



## CIRCUIT DIAGRAM



## RECOMMENDED PC BOARD PATTERN



## ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①②③ : ⑬⑭⑯ ⑥⑦⑧ : ⑩⑪⑫	Inductance (μH)min. [DC bias 8mA, 100kHz] ⑬-⑭ ⑩-⑪	Insertion loss (dB)max. [0.1 to 100MHz] ①③-⑬⑭ ⑩⑫-⑥⑧	Inter-winding stray capacitance (pF)max.[100kHz] ①③-⑬⑭ ⑥⑧-⑩⑫
TLA-6T127LF(-T)	1CT:1CT 1CT:1CT	350 350	1 1	25 25

- Ta=25°C

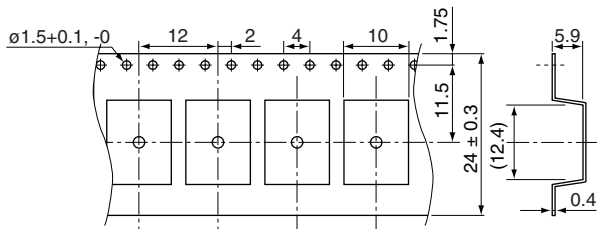
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

## PACKAGING STYLES

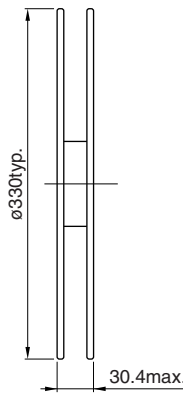
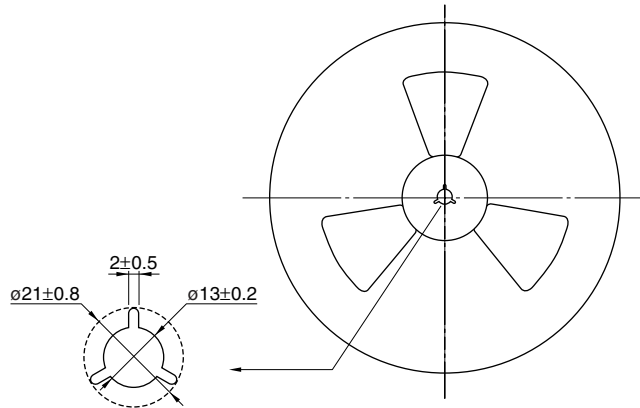
Quantity : 1000pieces/reel

## TAPE DIMENSIONS



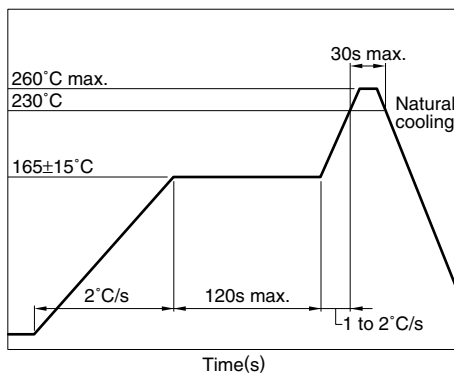
Dimensions in mm

## REEL DIMENSIONS



Dimensions in mm

## RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

## RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

Humidity: 60(%)RH max.

## TLA-6T133WLF(-T) ISO8802.3(IEEE802.3) 10/100BASE-TX

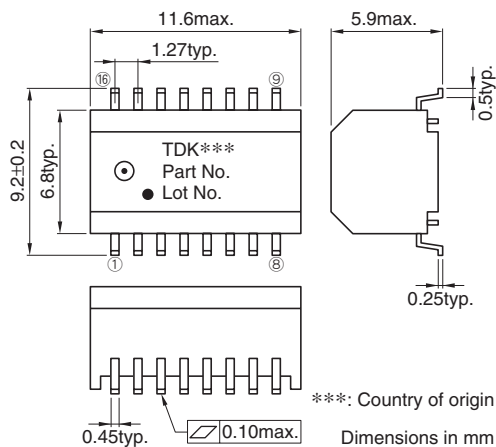
### FEATURES

- Can be used in the wide range of temperature(-40 to +85°C).
- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package(1.27mm=50mil pin pitch).
- Excellent common mode noise suppression.
- Inductance is 350μH or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-6T133WLF-T: Tape and reel, TLA-6T133WLF: Bulk).

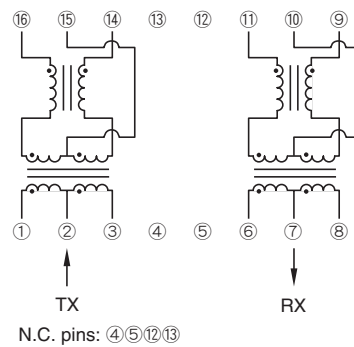
### GENERAL SPECIFICATIONS

Pulse transformer	2	
Common-mode choke	2	
Port	1	
Temperature ranges	Operating	-40 to +85°C
	Storage	-40 to +85°C
Withstanding voltage	Erms:1500V[60s]	

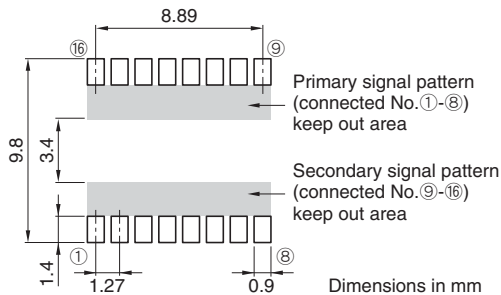
### SHAPES AND DIMENSIONS



### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN



### ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①②③ : ⑬⑭⑮⑯ ⑥⑦⑧ : ⑩⑪⑫⑬	Inductance (μH)min. [DC bias 8mA, 100kHz]	Insertion loss (dB)max. [0.1 to 100MHz]	Inter-winding stray capacitance (pF)max.[100kHz]
TLA-6T133WLF(-T)	1CT:1CT 1CT:1CT	350 350	1 1	25 25

- Ta=25°C

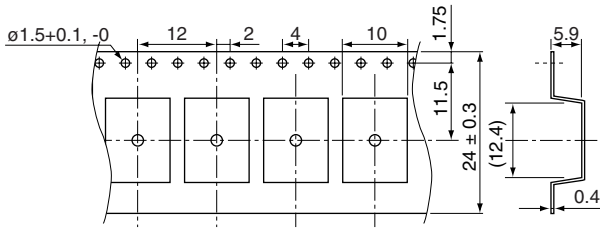
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

## PACKAGING STYLES

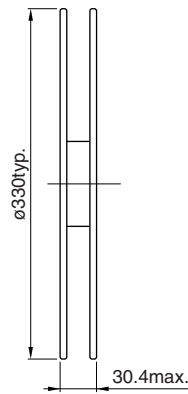
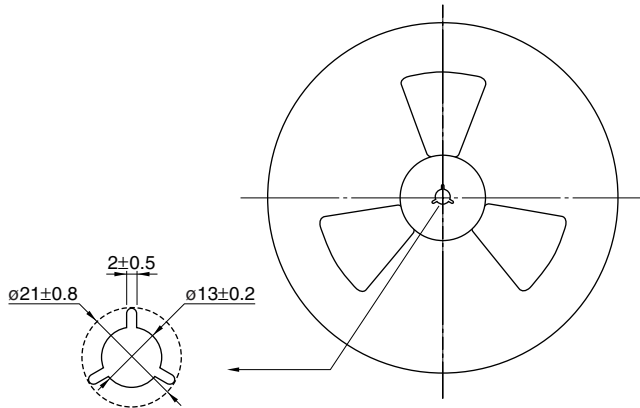
Quantity : 1000pieces/reel

## TAPE DIMENSIONS



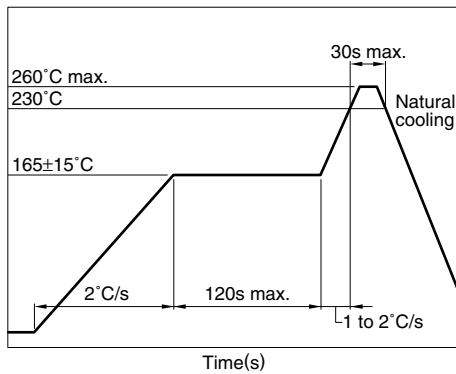
Dimensions in mm

## REEL DIMENSIONS



Dimensions in mm

## RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



## RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

Humidity: 60(%)RH max.

- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

# TLA-6T214ALF(-T) ISO8802.3(IEEE802.3) 10/100/1000BASE-T

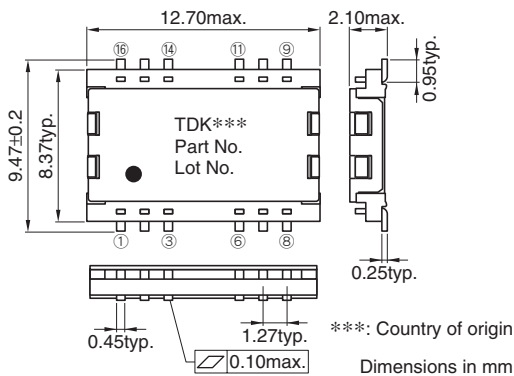
## FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package(1.27mm=50mil pin pitch).
- Low profile (H)2.1mm max. for note PC application.
- Excellent common mode noise suppression.
- Inductance is 350μH or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-6T214ALF-T: Tape and reel, TLA-6T214ALF: Bulk).

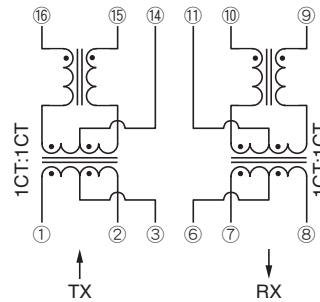
## GENERAL SPECIFICATIONS

Pulse transformer		2
Common-mode choke		2
Port		1
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:1500V[60s]

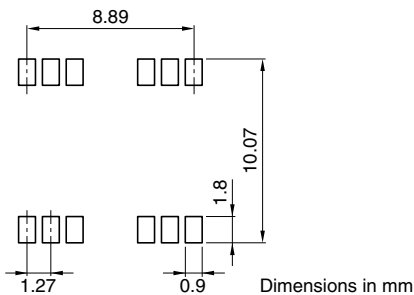
## SHAPES AND DIMENSIONS



## CIRCUIT DIAGRAM



## RECOMMENDED PC BOARD PATTERN



## ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①③②:⑩⑭⑮ ⑦⑥⑧:⑩⑪⑨	Inductance (μH)min. [DC bias 8mA, 100kHz] ⑩-⑮ ⑩-⑨	Insertion loss (dB)max. [0.1 to 125MHz] ①②-⑩⑮ ⑩⑨-⑦⑧	Inter-winding stray capacitance (pF)max.[100kHz] ①②-⑩⑮ ⑩⑨-⑦⑧
TLA-6T214ALF(-T)	1CT:1CT	350	1	25
	1CT:1CT	350	1	25

- Ta=25°C

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

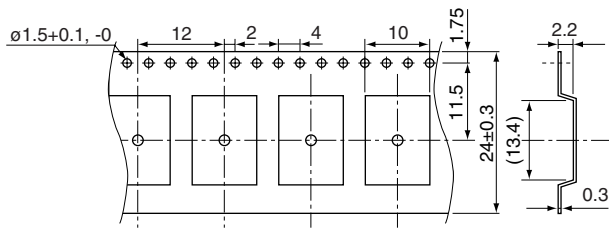
• All specifications are subject to change without notice.



## PACKAGING STYLES

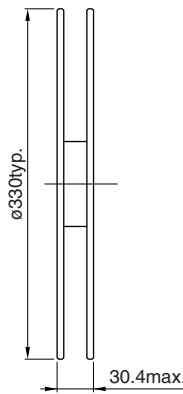
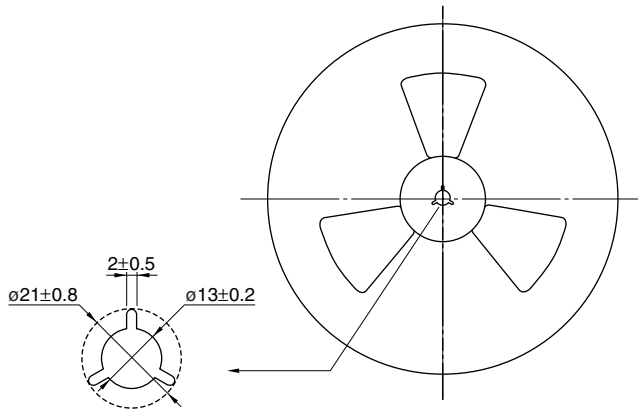
Quantity : 1500pieces/reel

## TAPE DIMENSIONS



Dimensions in mm

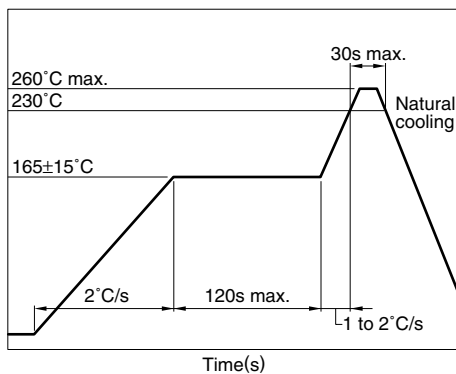
## REEL DIMENSIONS



Dimensions in mm

## RECOMMENDED SOLDERING CONDITION

### REFLOW SOLDERING



- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

### RECOMMENDED STORE CONDITION

The product is packaged by Anti-humid Al bag, in order to keep a good solder ability condition and resistance to soldering heat for products.

- Before aluminum bag opening
  - Temperature range: +5 to +40°C
  - Humidity: 90(%)RH max.
  - Storage period: 1year
- After aluminum bag opening
  - Temperature range: +5 to +30°C
  - Humidity: 60(%)RH max.
  - Storage period: 1week

## TLA-6T213LF(-T) ISO8802.3(IEEE802.3) 10/100/1000BASE-T

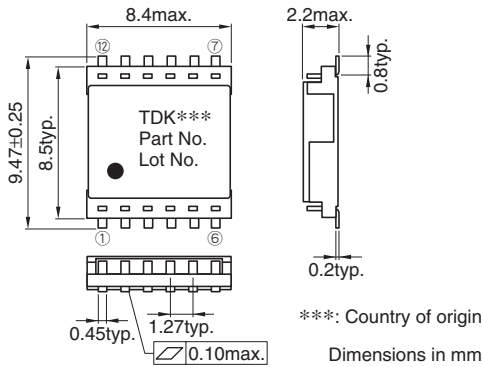
### FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 12-pin SMD package(1.27mm=50mil pin pitch).
- Because it is low profile design of 2.2mm max., space saving is possible and is suitable for notebook PC.
- Excellent common mode noise suppression.
- Inductance is 350 $\mu$ H or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-6T213LF-T: Tape and reel, TLA-6T213LF: Bulk).

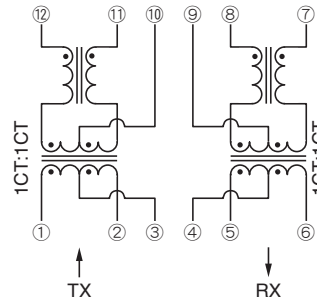
### GENERAL SPECIFICATIONS

Pulse transformer		2
Common-mode choke		2
Port		1
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:1500V[60s]

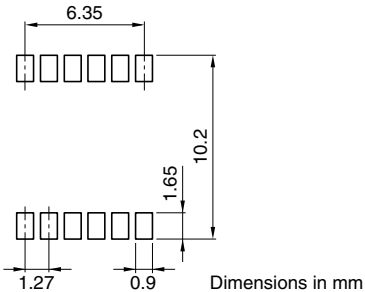
### SHAPES AND DIMENSIONS



### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN



### ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①③②:⑫⑩⑪ ⑤④⑥:⑧⑨⑦	Inductance ( $\mu$ H)min. [DC bias 8mA, 100kHz] ⑫-⑪ ⑧-⑦	Insertion loss (dB)max. [0.1 to 100MHz] ①②-⑫⑪ ⑧⑦-⑤⑥	Inter-winding stray capacitance (pF)max.[100kHz] ①②-⑫⑪ ⑧⑦-⑤⑥
TLA-6T213LF(-T)	1CT:1CT	350	1	25

- Ta=25°C

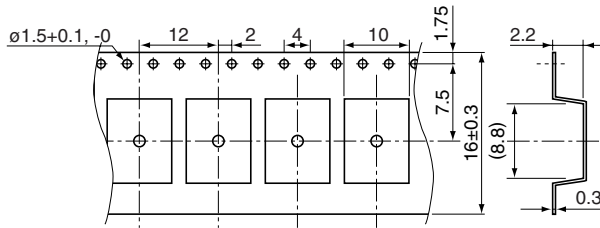
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

## PACKAGING STYLES

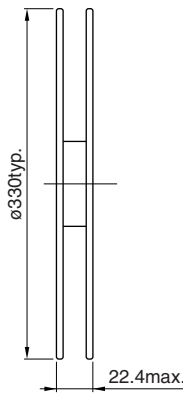
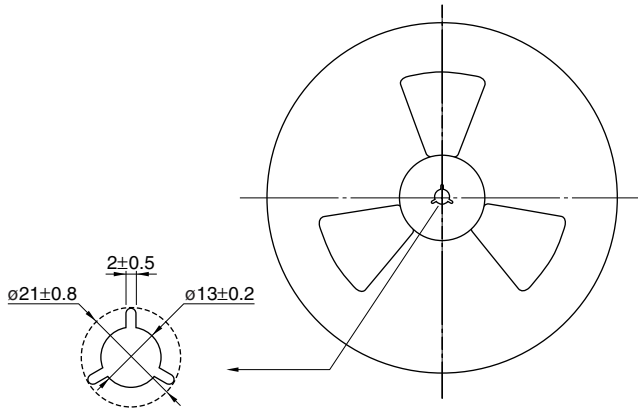
Quantity : 1500pieces/reel

## TAPE DIMENSIONS



Dimensions in mm

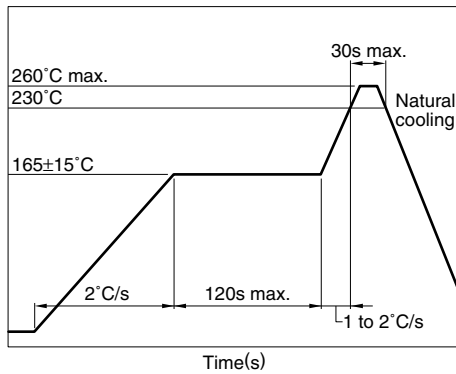
## REEL DIMENSIONS



Dimensions in mm

## RECOMMENDED SOLDERING CONDITION

### REFLOW SOLDERING



- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

### RECOMMENDED STORE CONDITION

The product is packaged by Anti-humid Al bag, in order to keep a good solder ability condition and resistance to soldering heat for products.

- Before aluminum bag opening  
Temperature range: +5 to +40°C  
Humidity: 90(%)RH max.  
Storage period: 1year
- After aluminum bag opening  
Temperature range: +5 to +30°C  
Humidity: 60(%)RH max.  
Storage period: 1week

## TLA-7T201LF(-T) ISO8802.3(IEEE802.3) 10/100/1000BASE-T

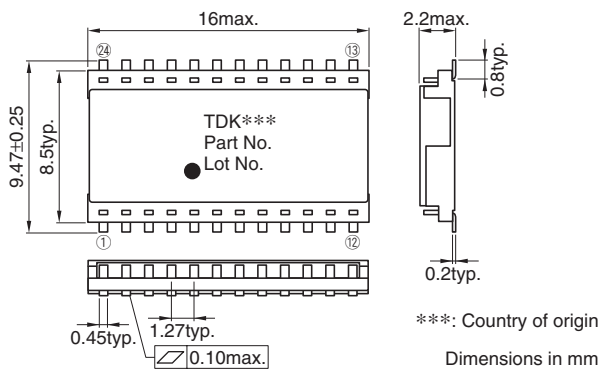
### FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 24-pin SMD package(1.27mm=50mil pin pitch).
- Because it is low profile design of 2.2mm max., space saving is possible and is suitable for notebook PC.
- Excellent common mode noise suppression.
- Inductance is 350 $\mu$ H or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-7T201LF-T: Tape and reel, TLA-7T201LF: Bulk).

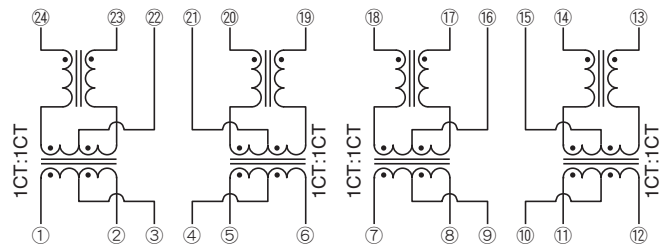
### GENERAL SPECIFICATIONS

Pulse transformer		4
Common-mode choke		4
Port		1[1000BASE-T]
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:1500V[60s]

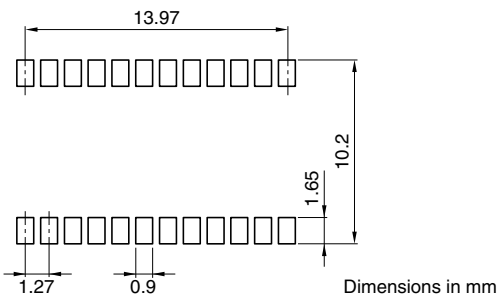
### SHAPES AND DIMENSIONS



### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN



### ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①③②:②④②②③ ⑤④⑥:②①①⑨ ⑦⑨⑧:⑩⑬①⑦ ⑪⑩⑫:⑭⑮⑬	Inductance ( $\mu$ H)min. [DC bias 8mA, 100kHz]	Insertion loss (dB)max. [0.1 to 100MHz]	Inter-winding stray capacitance (pF)max.[100kHz]
TLA-7T201LF(-T)	1CT:1CT	350	1	25

- Ta=25°C

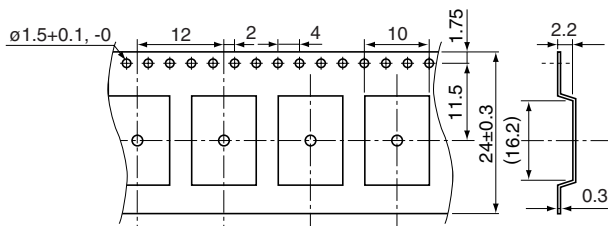
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

## PACKAGING STYLES

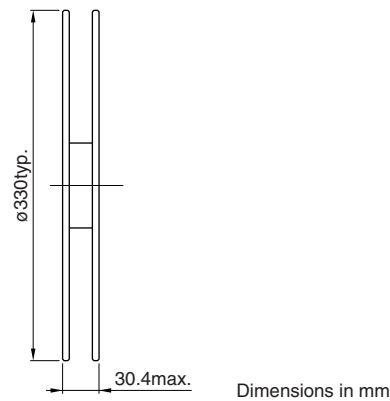
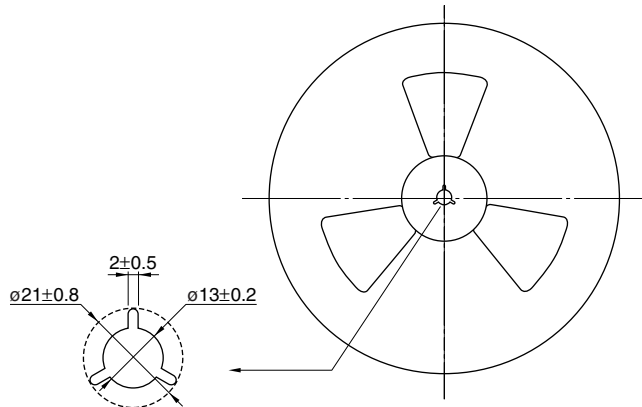
Quantity : 1500pieces/reel

## TAPE DIMENSIONS



Dimensions in mm

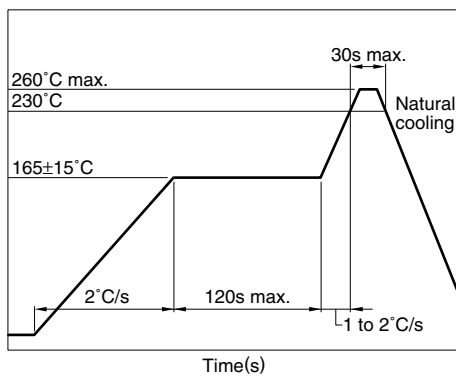
## REEL DIMENSIONS



Dimensions in mm

## RECOMMENDED SOLDERING CONDITION

### REFLOW SOLDERING



- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

## RECOMMENDED STORE CONDITION

The product is packaged by Anti-humid Al bag, in order to keep a good solder ability condition and resistance to soldering heat for products.

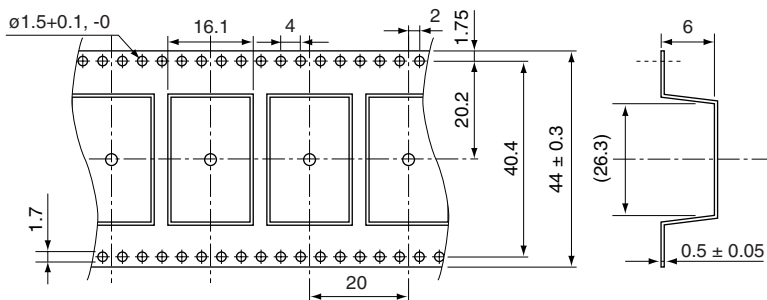
- Before aluminum bag opening
  - Temperature range: +5 to +40°C
  - Humidity: 90(%)RH max.
  - Storage period: 1year
- After aluminum bag opening
  - Temperature range: +5 to +30°C
  - Humidity: 60(%)RH max.
  - Storage period: 1week



### PACKAGING STYLES

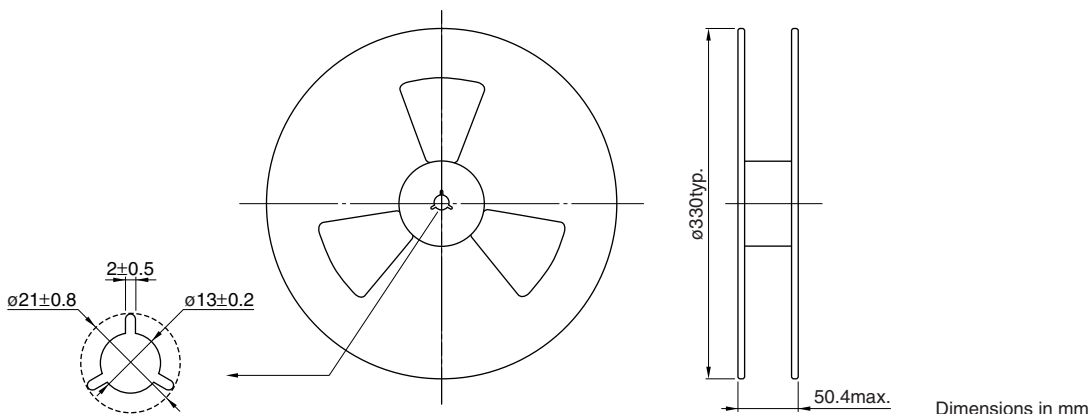
Quantity : 500pieces/reel

### TAPE DIMENSIONS



Dimensions in mm

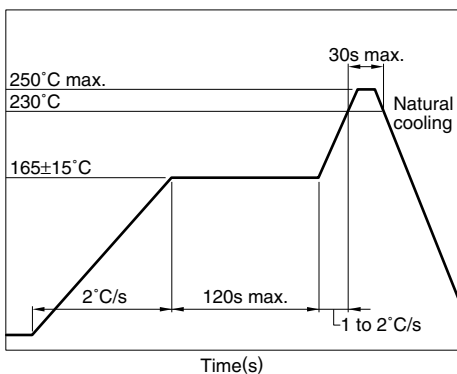
### REEL DIMENSIONS



Dimensions in mm

### RECOMMENDED SOLDERING CONDITION

#### REFLOW SOLDERING



- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

#### RECOMMENDED STORE CONDITION

The product is packaged by Anti-humid Al bag, in order to keep a good solder ability condition and resistance to soldering heat for products.

- Before aluminum bag opening  
Temperature range: +5 to +40°C  
Humidity: 90(%)RH max.  
Storage period: 1year
- After aluminum bag opening  
Temperature range: +5 to +30°C  
Humidity: 60(%)RH max.  
Storage period: 1week

## TLA-6T406(-T) ISO8802.3(IEEE802.3) 10/100BASE-TX

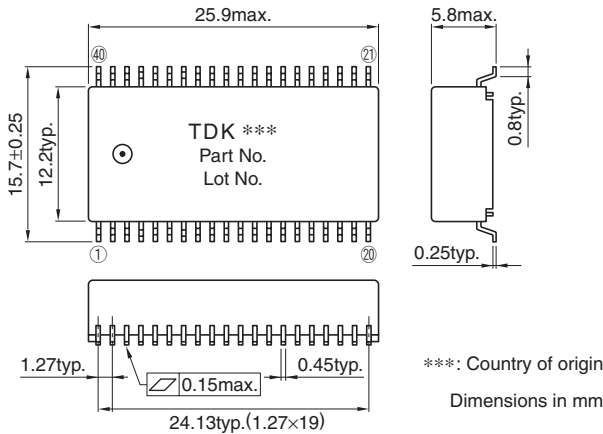
### FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (250°C max.).
- 40-pin SMD package(1.27mm=50mil pin pitch) for Quad port.
- Excellent common-mode noise suppression.
- Inductance is 350μH or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-6T406-T: Tape and reel, TLA-6T406: Bulk).

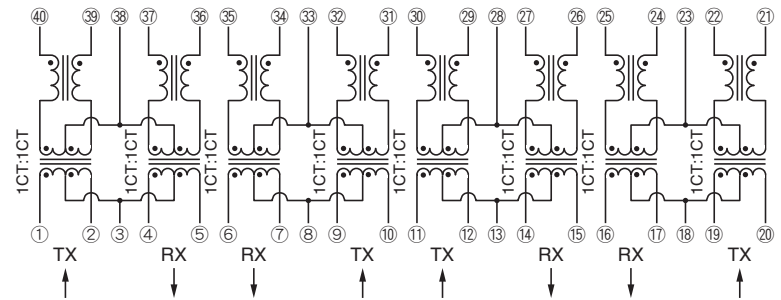
### GENERAL SPECIFICATIONS

Pulse transformer		8
Common-mode choke		8
Port		4
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:1500V[60s]

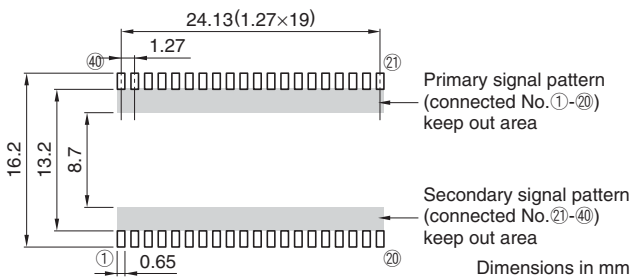
### SHAPES AND DIMENSIONS



### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN



### ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio	Inductance (μH)min. [DC bias 8mA, 100kHz]	Insertion loss (dB)max. [0.1 to 100MHz]	Inter-winding stray capacitance (pF)max.[100kHz]
	①③②:④③③③..... ④③⑤:③③③③.....	④③-③③..... ③⑦-③③.....	①②-④③③..... ④⑤-③⑦③③.....	①②-④③③..... ④⑤-③⑦③③.....
TLA-6T406(-T)	1CT:1CT	350	1	40
	1CT:1CT	350	1	40

- Ta=25°C

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

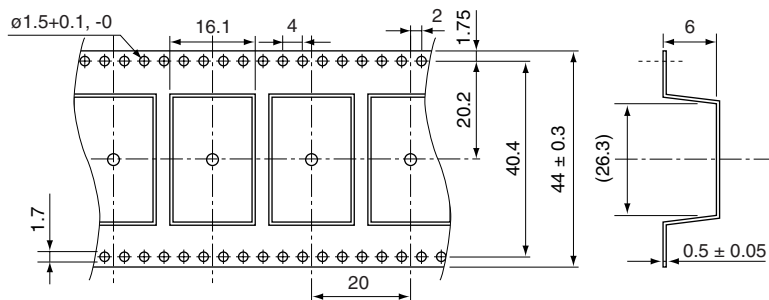
• All specifications are subject to change without notice.



### PACKAGING STYLES

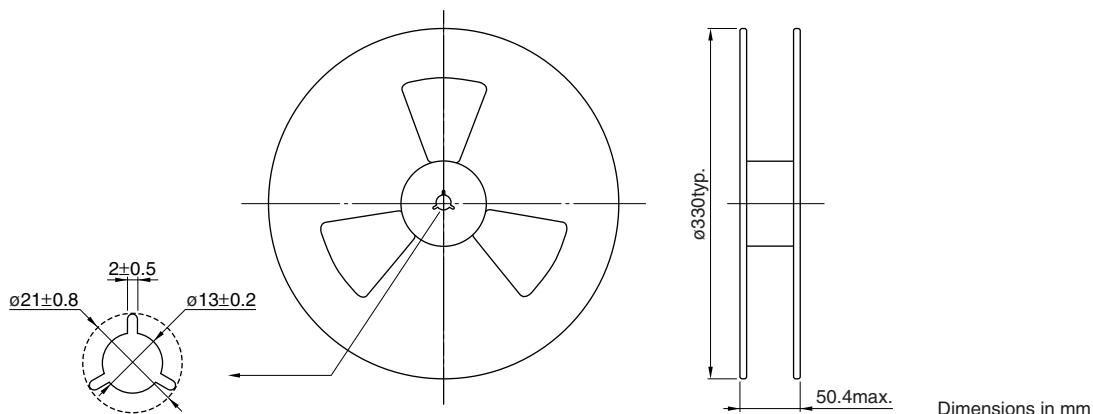
Quantity : 500pieces/reel

### TAPE DIMENSIONS



Dimensions in mm

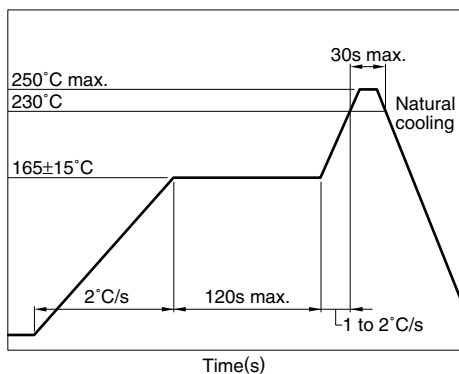
### REEL DIMENSIONS



Dimensions in mm

### RECOMMENDED SOLDERING CONDITION

#### REFLOW SOLDERING



- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

#### RECOMMENDED STORE CONDITION

The product is packaged by Anti-humid Al bag, in order to keep a good solder ability condition and resistance to soldering heat for products.

- Before aluminum bag opening  
Temperature range: +5 to +40°C  
Humidity: 90(%)RH max.  
Storage period: 1year
- After aluminum bag opening  
Temperature range: +5 to +30°C  
Humidity: 60(%)RH max.  
Storage period: 1week

# TLA-7T101LF(-T) ISO8802.3(IEEE802.3) 10/100/1000BASE-T

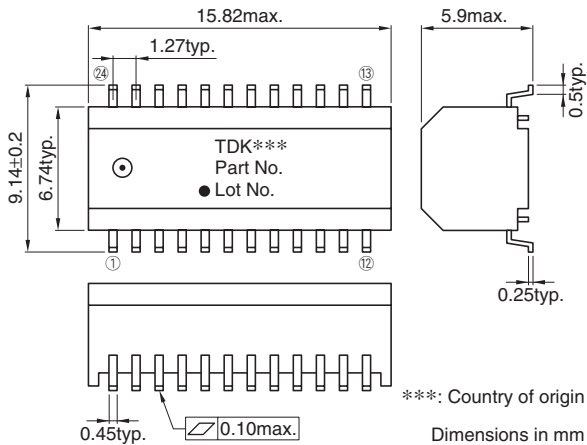
## FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 24-pin SMD package(1.27mm=50mil pin pitch).
- Excellent common-mode noise suppression.
- Inductance is 350μH or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-7T101LF-T: Tape and reel, TLA-7T101LF: Bulk).

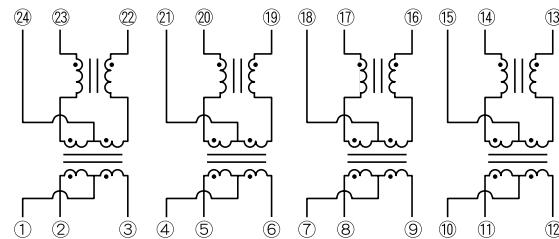
## GENERAL SPECIFICATIONS

Pulse transformer		4
Common-mode choke		4
Port		1(1000BASE-T)
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:1500V[60s]

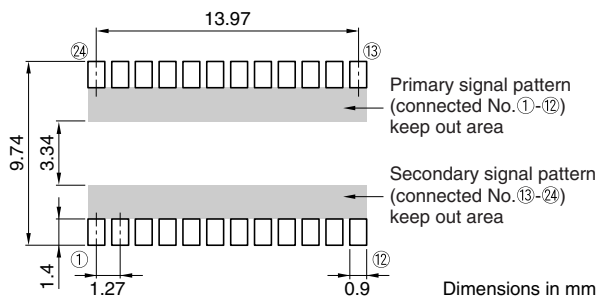
## SHAPES AND DIMENSIONS



## CIRCUIT DIAGRAM



## RECOMMENDED PC BOARD PATTERN



## ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio	Inductance (μH)min. [DC bias 8mA, 100kHz]	Insertion loss (dB)max. [0.1 to 100MHz]	Inter-winding stray capacitance (pF)max.[100kHz]
	②①③ : ⑳⑳②②	⑳-⑳	②③-⑳⑳	②③-⑳⑳
	⑤④⑥ : ⑳⑳①⑨	⑳-①⑨	⑤⑥-⑳①⑨	⑤⑥-⑳①⑨
	⑧⑦⑨ : ⑰⑰⑧⑥	⑰-⑰	⑧⑨-⑰⑰	⑧⑨-⑰⑰
	⑪⑩⑫ : ⑭⑭⑬⑬	⑭-⑬	⑪⑫-⑭⑬	⑪⑫-⑭⑬
TLA-7T101LF(-T)	1CT:1CT	350	1	25

- Ta=25°C

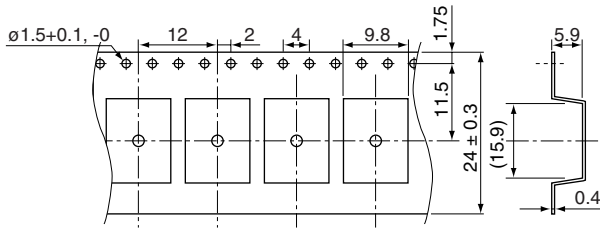
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

### PACKAGING STYLES

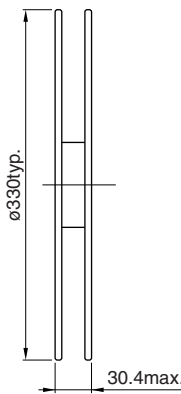
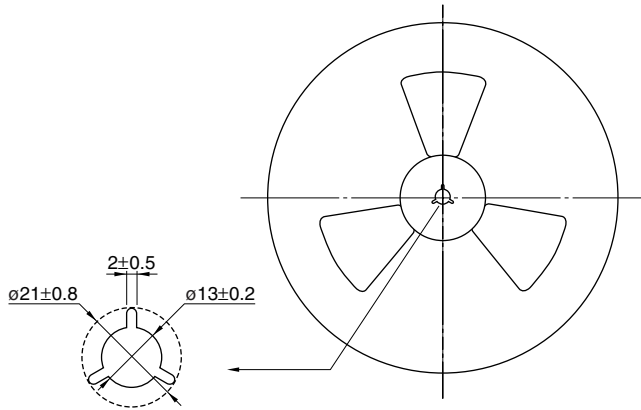
Quantity : 1000pieces/reel

### TAPE DIMENSIONS



Dimensions in mm

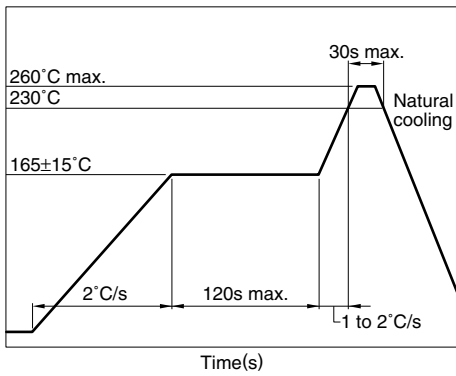
### REEL DIMENSIONS



Dimensions in mm

### RECOMMENDED SOLDERING CONDITION

#### REFLOW SOLDERING



### RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

Humidity: 60(%)RH max.

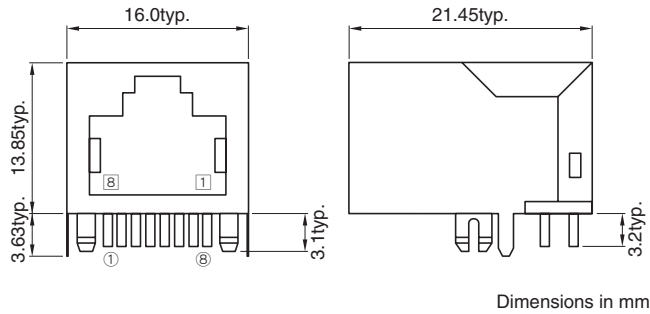
- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

## TLA-6T718 ISO8802.3(IEEE802.3) 10/100BASE-TX

### FEATURES

- Product conforming to RoHS directive.
- Pulse transformer, common mode choke, resistor and high with-standing voltage capacitor are integrated into RJ-45 modular jack.
- Excellent common mode noise suppression.
- Inductance is 350 $\mu$ H or greater ( $f=100$ kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.

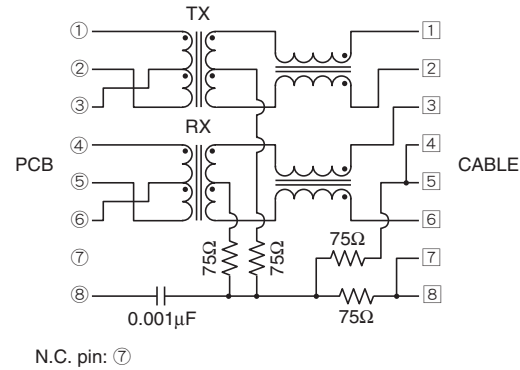
### SHAPES AND DIMENSIONS



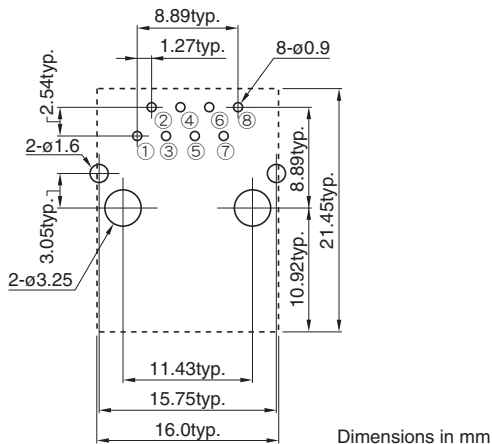
### GENERAL SPECIFICATIONS

Pulse transformer		2
Common-mode choke		2
Port		1
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:1500V[60s]

### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN[TOP VIEW]



### ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①③②:①② ④⑥⑤:③⑥	Inductance ( $\mu$ H)min. [DC bias 8mA, 100kHz] ①-② ③-⑥	Insertion loss (dB)max. [0.1 to 100MHz] ①②-①② ③⑥-④⑤
TLA-6T718	1CT:1 1CT:1	350 350	1 1

- $T_a=25^\circ\text{C}$

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

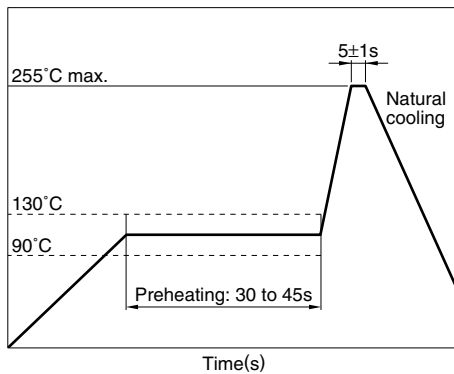
• All specifications are subject to change without notice.

## PACKAGING STYLES

Tray : 50pieces/tray

## RECOMMENDED SOLDERING CONDITION

### FLOW SOLDERING



Preheating: 90 to 130°C for 30 to 45 seconds.

Soldering: 255°C max. 5±1 seconds

- Perform flow soldering from the underside of the board.
- The surface of plastic protrusions inserted into the board may melt, but this causes no problems with regard to electrical properties or mounting.
- The cutted end of terminal has no plating(out of subject of solder ability).

### RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

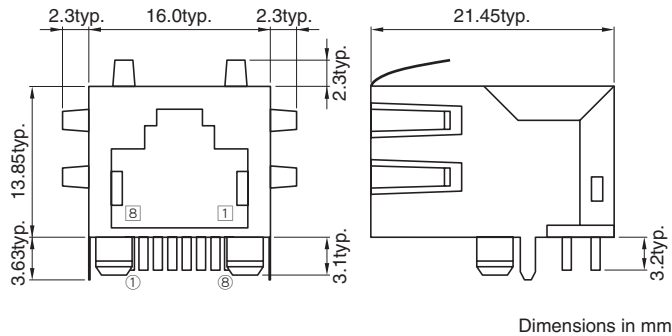
Humidity: 60(%)RH max.

## TLA-6T719 ISO8802.3(IEEE802.3) 10/100BASE-TX

### FEATURES

- Product conforming to RoHS directive.
- Pulse transformer, common mode choke, resistor and high with-standing voltage capacitor are integrated into RJ-45 modular jack.
- Excellent common mode noise suppression.
- Inductance is 350 $\mu$ H or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.

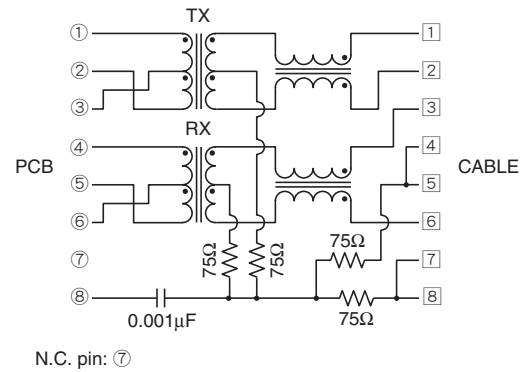
### SHAPES AND DIMENSIONS



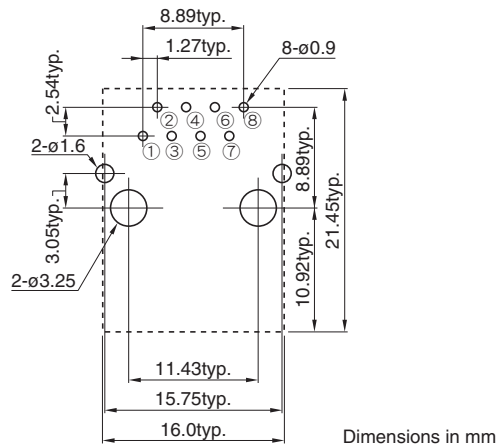
### GENERAL SPECIFICATIONS

Pulse transformer		2
Common-mode choke		2
Port		1
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:1500V[60s]

### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN[TOP VIEW]



### ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①③②:①② ④⑥⑤:③⑥	Inductance ( $\mu$ H)min. [DC bias 8mA, 100kHz] ①-② ③-⑥	Insertion loss (dB)max. [0.1 to 100MHz] ①②-①② ③⑥-④⑤
TLA-6T719	1CT:1 1CT:1	350 350	1 1

- Ta=25°C

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

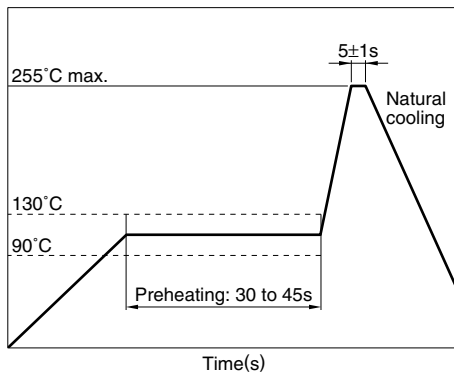
• All specifications are subject to change without notice.

## PACKAGING STYLES

Tray : 45pieces/tray

## RECOMMENDED SOLDERING CONDITION

### FLOW SOLDERING



Preheating: 90 to 130°C for 30 to 45 seconds.

Soldering: 255°C max. 5±1 seconds

- Perform flow soldering from the underside of the board.
- The surface of plastic protrusions inserted into the board may melt, but this causes no problems with regard to electrical properties or mounting.
- The cutted end of terminal has no plating(out of subject of solder ability).

### RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

Humidity: 60(%)RH max.

## TLA-6T720 ISO8802.3(IEEE802.3) 10/100BASE-TX

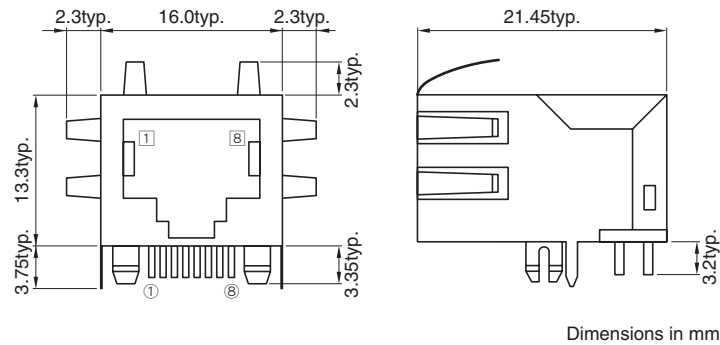
### FEATURES

- Product conforming to RoHS directive.
- Pulse transformer, common mode choke, resistor and high with-standing voltage capacitor are integrated into RJ-45 modular jack.
- Excellent common mode noise suppression.
- Inductance is 350 $\mu$ H or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.

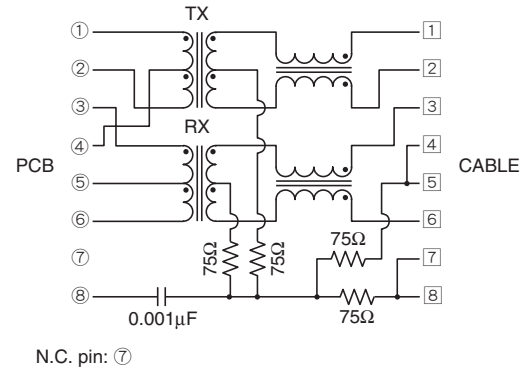
### GENERAL SPECIFICATIONS

Pulse transformer	2	
Common-mode choke	2	
Port	1	
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage	Erms:1500V[60s]	

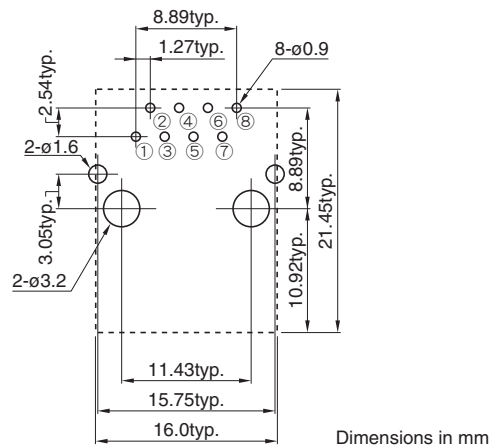
### SHAPES AND DIMENSIONS



### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN[TOP VIEW]



### ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①④②:①② ④⑤⑥:③⑥	Inductance ( $\mu$ H)min. [DC bias 8mA, 100kHz] ①-② ③-⑥	Insertion loss (dB)max. [0.1 to 100MHz] ①②-①② ③⑥-③⑥
TLA-6T720	1CT:1	350	1
	1CT:1	350	1

- Ta=25°C

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

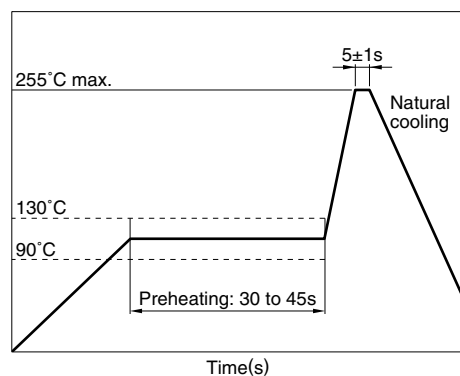


## PACKAGING STYLES

Tray : 45pieces/tray

## RECOMMENDED SOLDERING CONDITION

### FLOW SOLDERING



Preheating: 90 to 130°C for 30 to 45 seconds.

Soldering: 255°C max. 5±1 seconds

- Perform flow soldering from the underside of the board.
- The surface of plastic protrusions inserted into the board may melt, but this causes no problems with regard to electrical properties or mounting.
- The cutted end of terminal has no plating(out of subject of solder ability).

### RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1 year.

Temperature range: +5 to +30°C

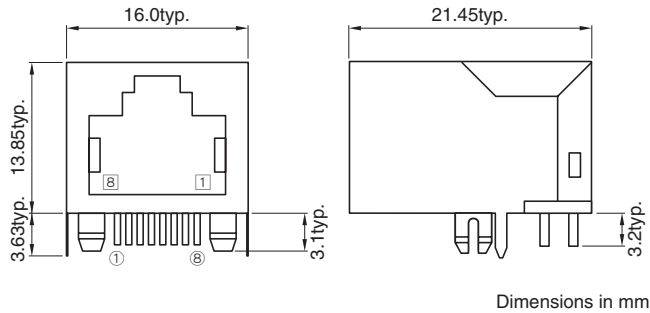
Humidity: 60(%)RH max.

## TLA-6T717W ISO8802.3(IEEE802.3) 10/100BASE-TX

### FEATURES

- Can be used in the wide range of temperature(−40 to +85°C).
- Product conforming to RoHS directive.
- Pulse transformer, common mode choke, resistor and high with-standing voltage capacitor are integrated into RJ-45 modular jack.
- Excellent common mode noise suppression.
- Inductance is 350μH or greater (f=100kHz, DC bias=8mA).
- Using the high-quality and wide-band ferrite cores for LAN.

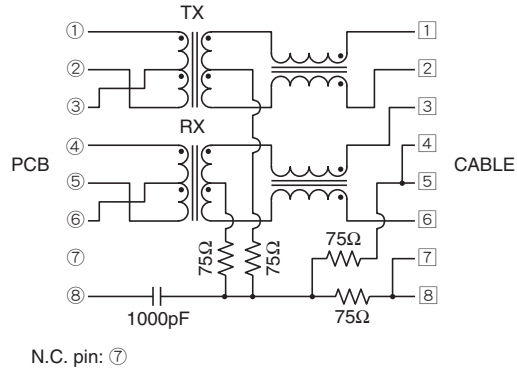
### SHAPES AND DIMENSIONS



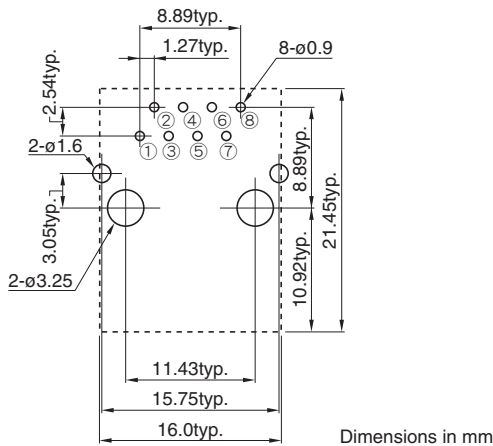
### GENERAL SPECIFICATIONS

Pulse transformer		2
Common-mode choke		2
Port		1
Temperature ranges	Operating	−40 to +85°C
	Storage	−40 to +85°C
Withstanding voltage		Erms:1500V[60s]

### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN[TOP VIEW]



### ELECTRICAL CHARACTERISTICS

Part No.	Turns ratio ①③②-①② ④⑥⑤-③⑥	Inductance (μH)min. [DC bias 8mA, 100kHz] ①-② ③-⑥	Insertion loss (dB)max. [0.1 to 100MHz] ①②-①② ③⑥-④⑤
TLA-6T717W	1CT:1 1CT:1	350 350	1 1

- Ta=25°C

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

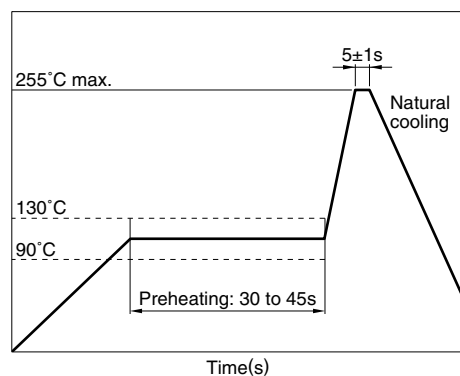
• All specifications are subject to change without notice.

## PACKAGING STYLES

Tray : 50pieces/tray

## RECOMMENDED SOLDERING CONDITION

### FLOW SOLDERING



Preheating: 90 to 130°C for 30 to 45 seconds.

Soldering: 255°C max. 5±1 seconds

- Perform flow soldering from the underside of the board.
- The surface of plastic protrusions inserted into the board may melt, but this causes no problems with regard to electrical properties or mounting.
- The cutted end of terminal has no plating(out of subject of solder ability).

### RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1 year.

Temperature range: +5 to +30°C

Humidity: 60(%)RH max.

## LC MODULES

Conformity to RoHS Directive

### TLA-3M103LF(-T) ISO8802.3(IEEE802.3) 10BASE-T

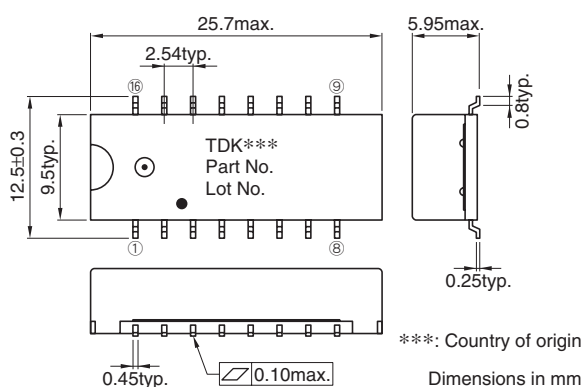
#### FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package (2.54mm=100mil pin pitch).
- Pulse transformer, common-mode choke and low pass filter are integrated into 16-pin SMD package.
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-3M103LF-T: Tape and reel, TLA-3M103LF: Bulk).

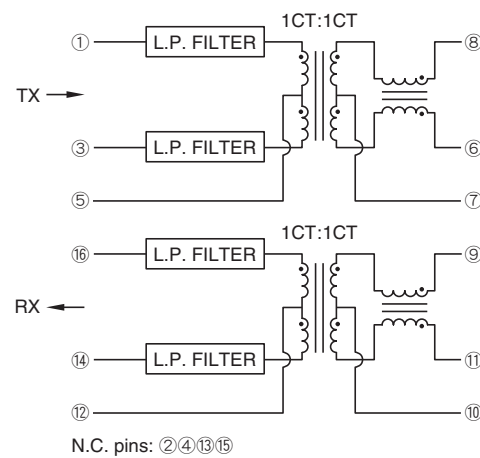
#### GENERAL SPECIFICATIONS

Low pass filter		2
Pulse transformer		2
Common-mode choke		2
Port		1
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:1500V[60s]

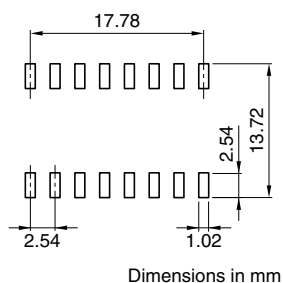
#### SHAPES AND DIMENSIONS



#### CIRCUIT DIAGRAM



#### RECOMMENDED PC BOARD PATTERN



#### ELECTRICAL CHARACTERISTICS

Part No.	Insertion loss (dB)max.[5 to 10MHz]	Attenuation (dB)min.[30 to 100MHz]	Impedance (Ω)typ.[5 to 10MHz]	C.M.R.R. (dB)min.[1 to 100MHz]
	①③-⑧⑥ ⑨⑪-⑯⑭	①③-⑧⑥ ⑨⑪-⑯⑭	①-③, ⑧-⑥ ⑯-⑭, ⑨-⑪	①③-⑧⑥ ⑯⑭-⑨⑪
TLA-3M103LF(-T)	1	25	100, 100	25
	1	25	100, 100	25

- Ta=25°C

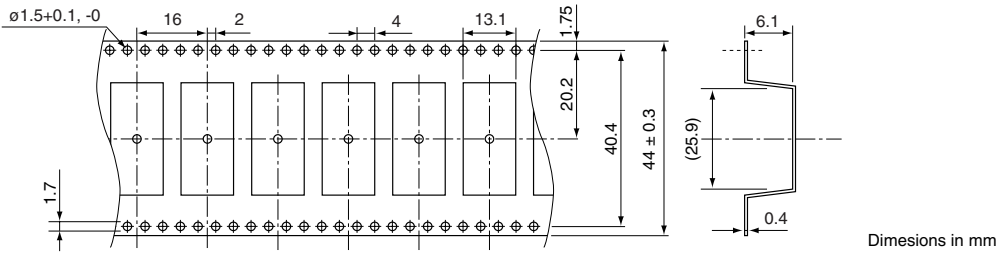
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

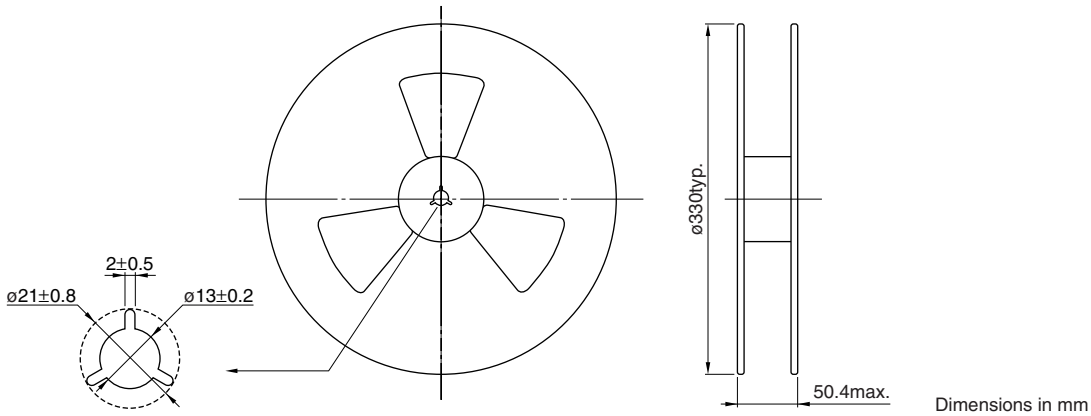
### PACKAGING STYLES

Quantity : 600pieces/reel

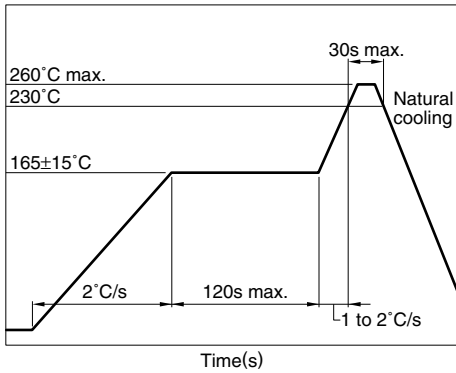
### TAPE DIMENSIONS



### REEL DIMENSIONS



### RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



### RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range:  $+5$  to  $+30^\circ\text{C}$

Humidity: 60(% )RH max.

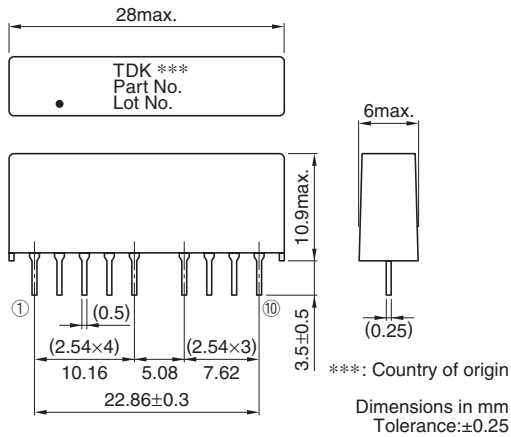
- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

## TLA-3M601-RS ISO8802.3(IEEE802.3) 10BASE-T

### FEATURES

- Product conforming to RoHS directive.
- 10-pin SIP package (2.54mm=100mil pin pitch).
- Pulse transformer, common-mode choke and low pass filter are integrated into 10-pin SIP package.
- Using the high-quality and wide-band ferrite cores for LAN.
- Thin( $t=6\text{mm max.}$ ) and low profile( $H=10.9\text{mm max.}$ ).

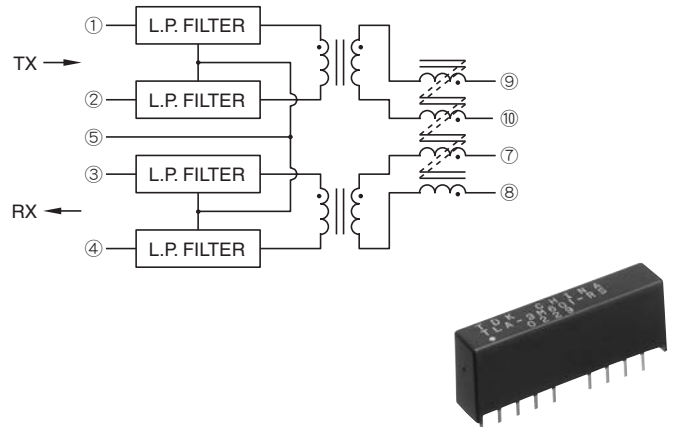
### SHAPES AND DIMENSIONS



### GENERAL SPECIFICATIONS

Low pass filter		2
Pulse transformer		2
Common-mode choke		1
Port		1
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms: 1500V[60s]

### CIRCUIT DIAGRAM



### ELECTRICAL CHARACTERISTICS

Part No.	Insertion loss (dB)max.[5 to 10MHz]	Attenuation (dB)min.[30 to 100MHz]	Impedance ( $\Omega$ )typ.[5 to 10MHz]	C.M.R.R. (dB)min.[30 to 100MHz]
	①②-⑨⑩ ⑦⑧-③④	①②-⑨⑩ ⑦⑧-③④	①-②,⑨-⑩ ③-④,⑦-⑧	①②-⑨⑩ ③④-⑦⑧
TLA-3M601-RS	1	25	100, 100	30
	1	25	100, 100	30

- $T_a=25^\circ\text{C}$

### PACKAGING STYLES

Quantity : 540pieces/box

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

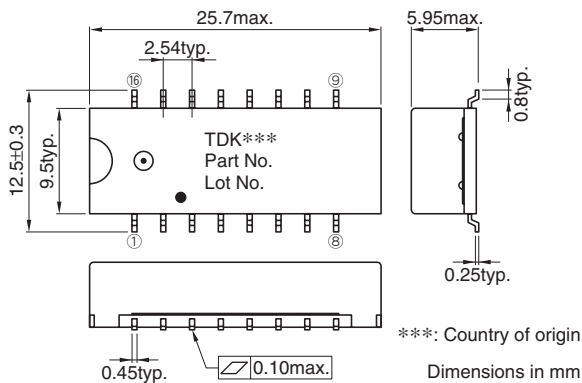
• All specifications are subject to change without notice.

## TLA-6M102LF(-T) ATM25

### FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package (2.54mm=100mil pin pitch).
- Pulse transformers, common-mode chokes, low pass filter and surge protector are integrated into 16-pin SMD package.
- Supports UTP 100Ω transmission cable.
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-6M102LF-T: Tape and reel, TLA-6M102LF: Bulk).

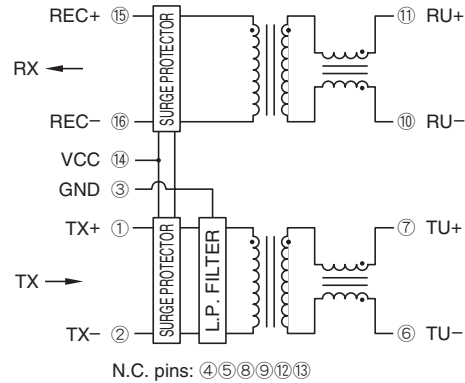
### SHAPES AND DIMENSIONS



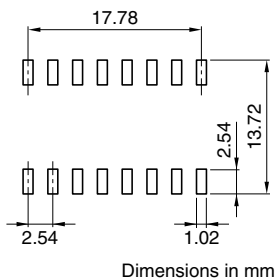
### GENERAL SPECIFICATIONS

Low pass filter		1
Pulse transformer		2
Common-mode choke		2
Port		1
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:500V[60s]

### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN



### ELECTRICAL CHARACTERISTICS

Part No.	Insertion loss (dB)max.		Attenuation (dB)min.
	[0.1 to 17MHz]	[17 to 25MHz]	[50 to 100MHz]
	①②-⑦⑥ ⑪⑩-⑮⑯	①②-⑦⑥ ⑪⑩-⑮⑯	①②-⑦⑥ ⑪⑩-⑮⑯
TLA-6M102LF(-T)	1.5	3	18
	1.5	1.5	—

- Ta=25°C

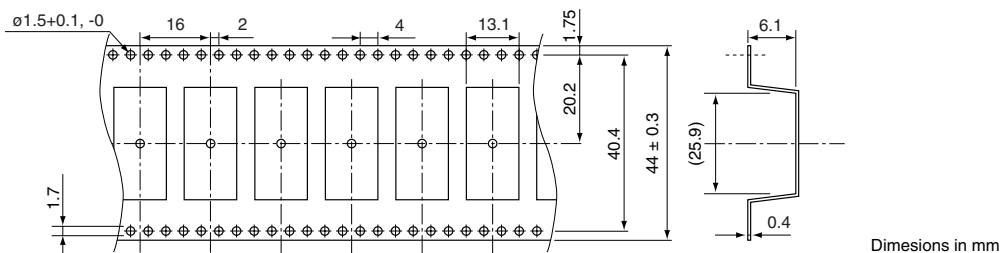
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

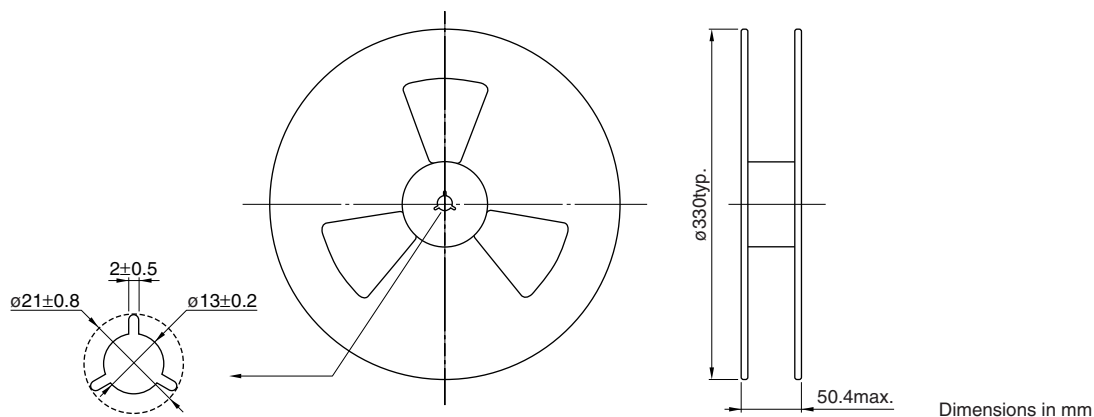
### PACKAGING STYLES

Quantity : 600pieces/reel

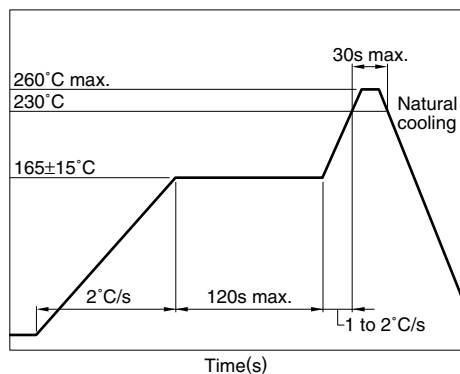
### TAPE DIMENSIONS



### REEL DIMENSIONS



### RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



### RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range: +5 to +30°C

Humidity: 60(%)RH max.

- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

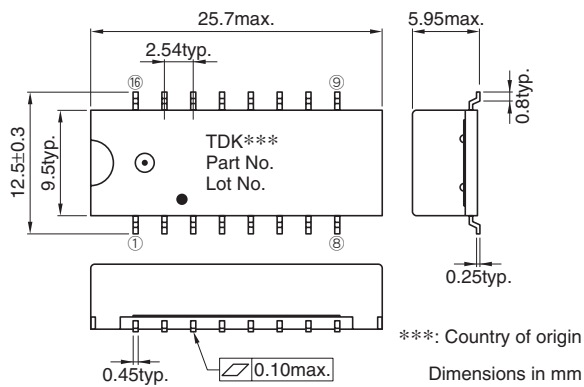


## TLA-6M103LF(-T) ATM25

### FEATURES

- Product conforming to RoHS directive.
- Can be mounted with lead-free solder (260°C max.).
- 16-pin SMD package (2.54mm=100mil pin pitch).
- Pulse transformers, common-mode chokes and low pass filter are integrated into 16-pin SMD package.
- Supports STP 150Ω or UTP 100Ω transmission cable.
- Using the high-quality and wide-band ferrite cores for LAN.
- Packaging specification is taping and bulk(TLA-6M103LF-T: Tape and reel, TLA-6M103LF: Bulk).

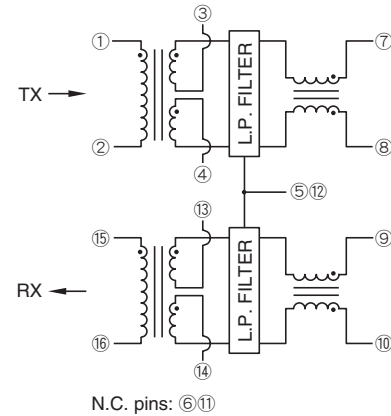
### SHAPES AND DIMENSIONS



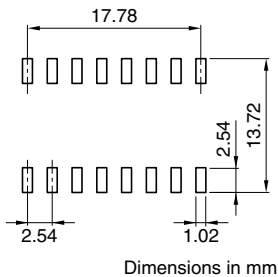
### GENERAL SPECIFICATIONS

Low pass filter		2
Pulse transformer		2
Common-mode choke		2
Port		1
Temperature ranges	Operating	0 to +70°C
	Storage	-40 to +85°C
Withstanding voltage		Erms:500V[60s]

### CIRCUIT DIAGRAM



### RECOMMENDED PC BOARD PATTERN



### ELECTRICAL CHARACTERISTICS

Part No.	Insertion loss (dB)max.			Attenuation (dB)min.
	[12kHz] ①②-⑦⑧ ⑨⑩-⑮⑯	[16MHz] ①②-⑦⑧ ⑨⑩-⑮⑯	[24MHz] ①②-⑦⑧ ⑨⑩-⑮⑯	
TLA-6M103LF(-T)	3	1	1.8	10
	3	1	1.8	10

- Ta=25°C

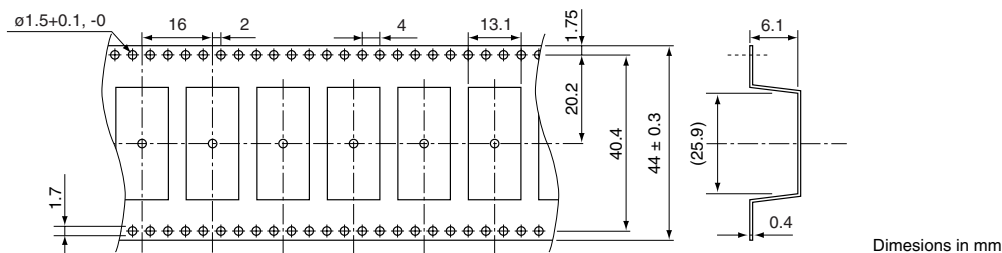
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

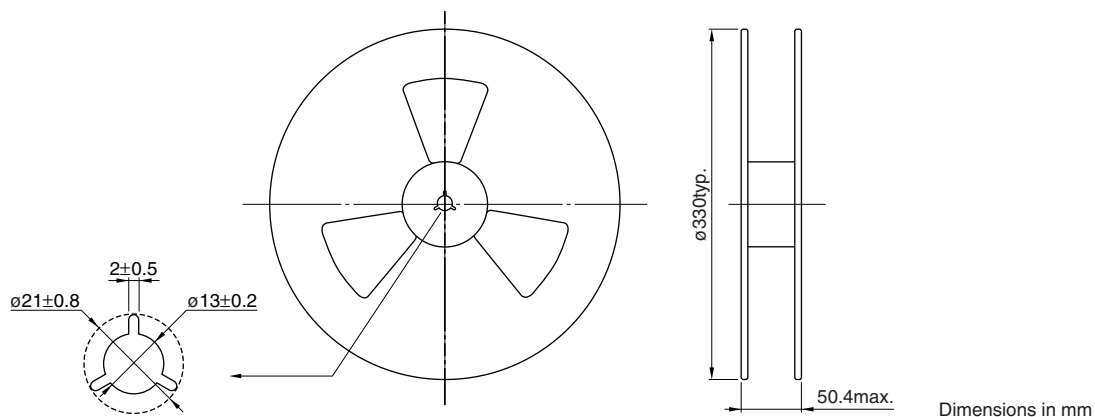
### PACKAGING STYLES

Quantity : 600pieces/reel

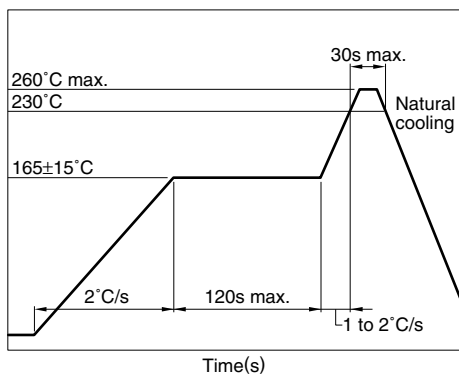
### TAPE DIMENSIONS



### REEL DIMENSIONS



### RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



- Temperature is measured at the terminal portion of product (Using thermocoupler for measurement).
- This profile is reference data we recommend. Please check in your actual process.
- For reliable soldering, the thickness of solder paste screen should be over the terminal co-planality.
- The cutted end of terminal has no plating(out of subject of solder ability).

### RECOMMENDED CONDITION FOR LONG TERM STORE

When it stores for a long term, please avoid place of high temperature and high humidity. Recommend that it uses after the delivery within 1year.

Temperature range:  $+5$  to  $+30^\circ\text{C}$

Humidity: 60(% )RH max.

## IC Cross Reference

IC manufacturer	Interface	IC part No.	Ports	Turns ratio		TDK part No.			
				TX	RX	Single	Single (Low profile)	Quad	RJ45
AMD	10/100BASE-TX	Am79C874	1	1:1	1:1	TLA-6T103LF	TLA-6T214ALF	TLA-6T404	TLA-6T718
		Am79C875	4	1.25:1	1:1	TLA-6T118LF	TLA-6T213LF	TLA-6T406	TLA-6T719 TLA-6T720
		Am79C973/975	1	1:1.41	1:1	TLA-6T122LF (For power down application)			
		Am79C973/975	1	1:1.41	1:1	TLA-6T121LF			
Broadcom	10/100BASE-TX	AC101L	1						
		BCM5241	1	1:1	1:1	TLA-6T118LF	TLA-6T214ALF	TLA-6T406	TLA-6T718
		BCM5226	6				TLA-6T213LF		TLA-6T719
		BCM5208R/5228	8						TLA-6T720
		BCM5238/5248	8						
		BCM5220/5221	1	1:1	1:1	TLA-6T133WLF			TLA-6T717W
		BCM5222	2						
Broadcom	10/100BASE-TX (VoIP)	BCM1101	2	1:1	1:1	TLA-6T127LF			
		BCM1112/1113	2						
		BCM1115	1						
Broadcom	10/100/1000BASE-T	BCM5401	1						
		BCM5421/S	1						
		BCM5461/S	1	1:1	1:1	TLA-7T101LF	TLA-7T201LF		
		BCM5703	1						
		BCM5705/M	1						
		BCM5788/M	1						
CIRRUS LOGIC	10BASE-T	CS8900A(5V)	1	1:1.41	1:1	TLA-3T110LF			
		CS8900A(3.3V)	1	1:2.5	1:1	TLA-3T112LF			
CIRRUS LOGIC	10/100BASE-TX	CS8952	1	1:1	1:1	TLA-6T103LF	TLA-6T214ALF		TLA-6T718
		CS8952T	1			TLA-6T118LF	TLA-6T213LF		TLA-6T719 TLA-6T720
CIRRUS LOGIC	10BASE-T	DM9008	1	1:1	1:1	TLA-3M103LF			
		DM9081	8			TLA-3M601-RS			
DAVICOM	10/100BASE-TX	DM9010	1	1:1	1:1	TLA-6T118LF	TLA-6T214ALF		TLA-6T718
		DM9000A	1				TLA-6T213LF		TLA-6T719 TLA-6T720
		DM9601	1	1:1	1:1	TLA-6T103LF	TLA-6T214ALF		TLA-6T718
		DM9102A	1			TLA-6T118LF	TLA-6T213LF		TLA-6T719
		DM9161	1						TLA-6T720
		DM9331	1	1.25:1	1:1	TLA-6T122LF (For power down application)			
Fujitsu	10BASE-T	MB86967	1	1:1	1:1	TLA-3M103LF			
		MB86967	1			TLA-3M601-RS			
ICS	10/100BASE-TX	ICS1892	1	1:1	1:1	TLA-6T103LF	TLA-6T214ALF		TLA-6T718
		ICS1893AF/AG	1			TLA-6T118LF	TLA-6T213LF		TLA-6T719 TLA-6T720
		ICS1893BF/BK	1	1:1	1:1	TLA-6T118LF	TLA-6T214ALF		TLA-6T718
		ICS1893BF/BK	1			TLA-6T118LF	TLA-6T213LF		TLA-6T719 TLA-6T720
IDT	ATM25	IDT77105	1	1:1	1:1	TLA-6M103LF			
Infineon (ADMtek)	10/100BASE-TX	ADM7001	1						
		ADM7008	8						
		ADM6995L/6996L	5	1:1	1:1	TLA-6T118LF	TLA-6T214ALF	TLA-6T406	TLA-6T718
		ADM6996F	4				TLA-6T213LF		TLA-6T719
		ADM6999U/G	8						TLA-6T720
Infineon (ADMtek)	10BASE-T	LXT901A/907A	1	1:1.14	1:1	TLA-3T110LF			
		LXT905/908	1	1:2	1:1	TLA-3T109LF			
Infineon (ADMtek)	10/100BASE-TX	82559/ER	1						
		82562EP/ET/EX/EZ	1	1:1	1:1	TLA-6T103LF	TLA-6T214ALF		TLA-6T718
		LXT972A/M	1			TLA-6T118LF	TLA-6T213LF		TLA-6T719
		LXT970A/971A	1						TLA-6T720
		82551QM/ER	1						
		82562GT/GZ/GX	1	1:1	1:1	TLA-6T118LF	TLA-6T214ALF		TLA-6T718
		LXT973	2			TLA-6T213LF		TLA-6T719 TLA-6T720	
Intel (Level One)	10/100BASE-TX	82551IT	1	1:1	1:1	TLA-6T133WLF			TLA-6T717W
		LXT974/975	4	2:1	1:1	TLA-6T120LF			
Intel (Level One)	10/100/1000BASE-T	LXT9785/E	8	1:1	1:1	TLA-6T118LF	TLA-6T214ALF	TLA-6T406	TLA-6T718 TLA-6T719 TLA-6T720
		82573E/V/L	1						
		82572EI	1						
		82571EB	2						
		82547GI/EI	1						
		82546EB/GB	2	1:1	1:1	TLA-7T101LF	TLA-7T201LF		
		82545EM/GM	1						
		82544GC/EI	1						
		82541PI/GI/EI/ER	1						
		82540EM/EP	1						

• All specifications are subject to change without notice.

IC manufacturer	Interface	IC part No.	Ports	Turns ratio		TDK part No.			
				TX	RX	Single	Single (Low profile)	Quad	RJ45
LSI Logic	10/100BASE-TX	L80223	1	1:1	1:1	TLA-6T103LF TLA-6T118LF	TLA-6T214ALF TLA-6T213LF		TLA-6T718 TLA-6T719 TLA-6T720
		L80225	1						
		L80227	1						
Marvell	10/100/1000BASE-T	88E1000/S	1	1:1	1:1	TLA-7T101LF	TLA-7T201LF		
		88E1010/S	1						
		88E1011/S	1						
		88E1111	1						
MICREL (Kendin)	10/100BASE-TX	KSZ8001L/S	1	1:1	1:1	TLA-6T118LF	TLA-6T214ALF TLA-6T213LF		TLA-6T718 TLA-6T719 TLA-6T720
		KSZ8721B/BL/BT	1						
		KSZ8721CL/SL	1						
		KSZ8001LI	1	1:1	1:1	TLA-6T133WLF			TLA-6T717W
		KSZ8721BI/BLI/SLI	1						
		KS8993I	1	1:1	1:1	TLA-6T103LF TLA-6T118LF	TLA-6T214ALF TLA-6T213LF	TLA-6T406	TLA-6T718 TLA-6T719 TLA-6T720
		KSZ8993	1						
KSZ8995XA	5								
		KSZ8997	8	1:1	1:1	TLA-6T118LF	TLA-6T214ALF TLA-6T213LF	TLA-6T406	TLA-6T718 TLA-6T719 TLA-6T720
		KSZ8999	9						
Micro Linear	10/100BASE-TX	ML6652	1	1:1	1:1	TLA-6T118LF	TLA-6T214ALF TLA-6T213LF	TLA-6T406	TLA-6T718 TLA-6T719 TLA-6T720
National Semiconductor	10/100BASE-TX	DP83847	1	1:1	1:1	TLA-6T103LF TLA-6T118LF	TLA-6T214ALF TLA-6T213LF		TLA-6T718 TLA-6T719 TLA-6T720
		DP83816	1						
		DP83848C	1	1:1	1:1	TLA-6T118LF	TLA-6T214ALF TLA-6T213LF		TLA-6T718 TLA-6T719 TLA-6T720
	DP83848M	1							
			DP83848H/I/T/YB	1	1:1	1:1	TLA-6T133WLF		TLA-6T717W
	10/100/1000BASE-T	DP83865	1	1:1	1:1	TLA-7T101LF	TLA-7T201LF		
NEC	ATM25	uPD98408	6	1:1.52	1.36:1	TLA-6M102LF			
	10BASE-T	RTL8019AS	1	1:1	1:1	TLA-3M103LF TLA-3M601-RS			
	RTL8029AS	1							
Realtek	10/100BASE-TX	RTL8100B/C	1	1:1	1:1	TLA-6T103LF TLA-6T118LF	TLA-6T214ALF TLA-6T213LF		TLA-6T718 TLA-6T719 TLA-6T720
		RTL8139C/D	1						
		RTL8101L	1						
		RTL8201BL/CL	1						
		RTL8201CP	1						
	RTL8100E/8101E	1	1:1	1:1	TLA-6T118LF	TLA-6T214ALF TLA-6T213LF	TLA-6T406	TLA-6T718 TLA-6T719 TLA-6T720	
	RTL8208/B	8							
			RTL8110S/SB/SC	1	1:1	1:1	TLA-7T101LF	TLA-7T201LF	
			RTL8169S/SB/SC	1					
			RTL8211B	1					
Renesas	10/100BASE-TX	R4S76190B125BGV	1	1:1	1:1	TLA-6T103LF TLA-6T118LF	TLA-6T214ALF TLA-6T213LF		TLA-6T718 TLA-6T719 TLA-6T720
		R4S76190N125BGV	1						
		R4S76190W125BGV	1	1:1	1:1	TLA-6T133WLF			TLA-6T717W
R4S76190D125BGV	1								
	10BASE-T	LAN91C96	1	1:1	1:1	TLA-3M103LF TLA-3M601-RS			
SMSC	10/100BASE-TX	LAN83C185	1	1:1	1:1	TLA-6T103LF TLA-6T118LF	TLA-6T214ALF TLA-6T213LF		TLA-6T718 TLA-6T719 TLA-6T720
		LAN91C111	1						
		LAN9118	1						
		LAN9117	1						
		LAN9116	1						
		LAN9115	1	1:1	1:1	TLA-6T118LF	TLA-6T214ALF TLA-6T213LF		TLA-6T718 TLA-6T719 TLA-6T720
		LAN8700	1						
		LAN8187	1						
		LAN9215	1						
		LAN91C111I	1						
LAN8700I	1	1:1	1:1	TLA-6T133WLF			TLA-6T717W		
LAN8171I	1								
LAN9218I	1								
Teridian Semiconductor (TDK)	10/100BASE-TX	78Q2120C	1	1:1	1:1	TLA-6T103LF TLA-6T118LF	TLA-6T214ALF TLA-6T213LF		TLA-6T718 TLA-6T719 TLA-6T720
		78Q2123	1						
		78Q2133	1	1:1	1:1	TLA-6T118LF	TLA-6T214ALF TLA-6T213LF		TLA-6T718 TLA-6T719 TLA-6T720
				1:1	1:1	TLA-6T133WLF		TLA-6T717W	