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**SPECIFICATION FOR APPROVAL**

CUSTOMER	Codico
CERTIFIED MODEL/TYPE	
PART NO.	TPM4P550H120R (RoHS+HF)
APPLICATION	
CUSTOMER P/N	
ISSUE DATE	Mar. 11, 2016
REV. NO.	
REV. DATE	

FOR CUSTOMER APPROVAL	CHECKED BY
	<i>Shu Ling Fu</i>
	APPROVED BY
	<i>Chun Chu Tu</i>





**REVISED RECORD SHEET**

REV. NO	REV. DATE	REVISED CONTENT



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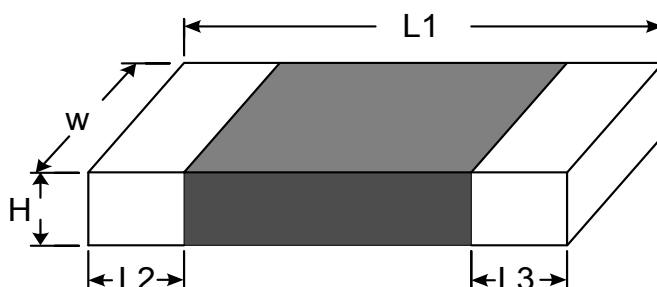
Part Number Code

Example :

**TPM**    **4**    **P**    **550**    **H**    **120**    **R**  
 (1)      (2)      (3)      (4)      (5)      (6)      (7)

No.	Item	Digit	Specification
(1)	Product Type	TPM	Thinking CPTC thermistor TPM type
(2)	Size (EIA)	4	1210
(3)	Type Series	P	Over current protection series
(4)	Zero Power Resistance at 25°C	550	$55 \times 10^0 = 55\Omega$
(5)	Tolerance of R <sub>25</sub>	H	± 25%
(6)	Curie Point Temperature	120	T <sub>c</sub> =120°C
(7)	Packaging	R	Reel

### Structure and Dimensions



( unit : mm )


L1	W	H max.	L2 and L3
3.20±0.30	2.50±0.25	1.80	0.50±0.20

### Electrical Characteristics

Part No.	Curie Point Temperature	Zero Power Resistance at 25°C	Non-operating Current		Trip Current□	
	T <sub>c</sub> (°C)	R <sub>25</sub> (Ω)	(at +85°C) (mA)	(at +25°C) (mA)	(at +25°C) (mA)	(at -40°C) (mA)
TPM4P550H120R	120±10	55±25%	34	60	130	190

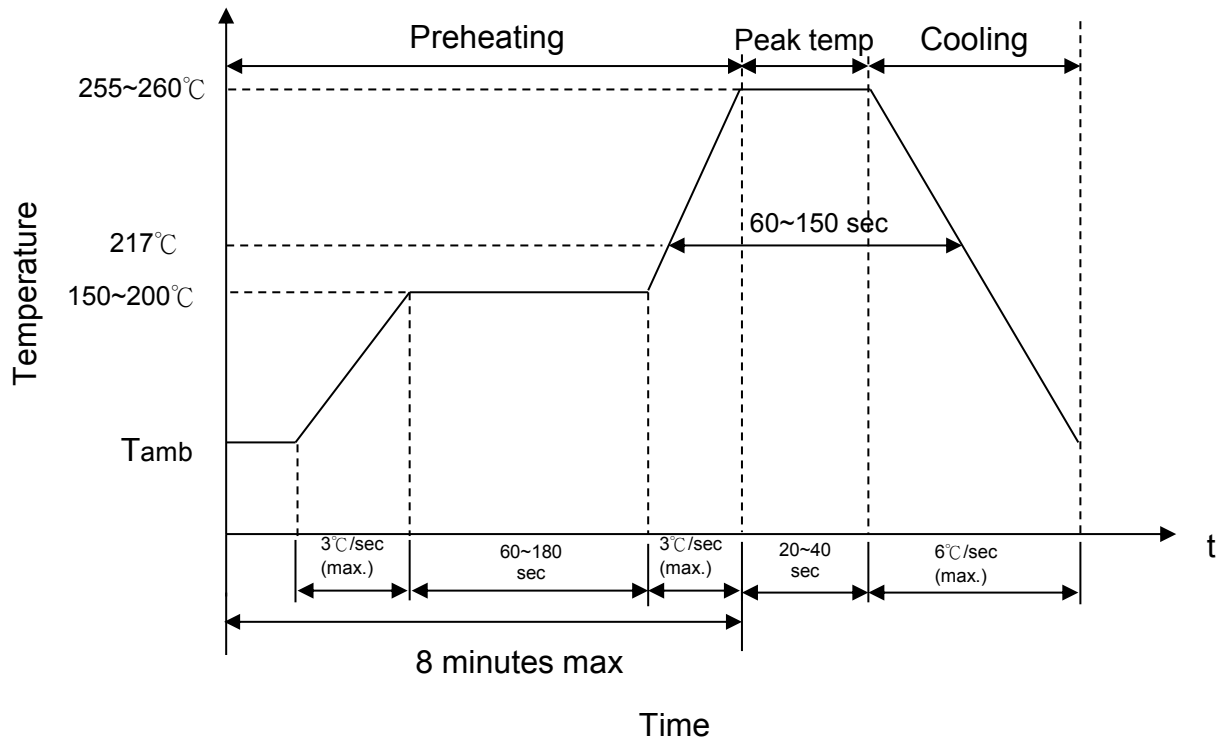
Part No.	Max. Voltage	Max. Current	Operating Temperature Range(at V=0)	Operating Temperature Range(at Vmax. )
	V <sub>max</sub> (V <sub>DC</sub> )	I <sub>max</sub> (mA)	(°C)	(°C)
TPM4P550H120R	30	400	-40 ~ +125	-40 ~ +85

**Reliability**

Item	Standard	Test conditions / Methods	Specifications															
Bending Strength	IEC 60068-2-21	Warp : 2mm ; Speed < 0.5mm/sec. Duration : 10 sec on PCB. 	No visible damage $ \Delta R_{25}/R_{25}  \leq 10\%$															
Damp Heat, Steady State	IEC 60068-2-78	60 ± 2 °C , 90 ~ 95% RH , 1000± 24 hrs	No visible damage $ \Delta R_{25}/R_{25}  \leq 20\%$															
High Temp. Storage	IEC 60068-2-2	125 ± 3 °C , 1000 ± 24 hrs	No visible damage $ \Delta R_{25}/R_{25}  \leq 20\%$															
Low Temp. Storage	IEC 60068-2-1	-40 ± 3 °C , 1000 ± 24 hrs	No visible damage $ \Delta R_{25}/R_{25}  \leq 20\%$															
Rapid Change of Temperature	IEC 60068-2-14	The conditions shown below shall be repeated 5 cycles on PCB <table border="1" data-bbox="523 974 1168 1288"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Period (minutes)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40 ± 5</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room temperature</td> <td>5 ± 3</td> </tr> <tr> <td>3</td> <td>125 ± 5</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>5 ± 3</td> </tr> </tbody> </table>	Step	Temperature (°C)	Period (minutes)	1	-40 ± 5	30 ± 3	2	Room temperature	5 ± 3	3	125 ± 5	30 ± 3	4	Room temperature	5 ± 3	No visible damage $ \Delta R_{25}/R_{25}  \leq 20\%$
Step	Temperature (°C)	Period (minutes)																
1	-40 ± 5	30 ± 3																
2	Room temperature	5 ± 3																
3	125 ± 5	30 ± 3																
4	Room temperature	5 ± 3																
High Temp. Load	IEC 60738-1 7.24.3	85 ± 5 °C , Vmax. , 1000 ± 24 hrs	No visible damage $ \Delta R_{25}/R_{25}  \leq 20\%$															
Climatic Sequence	IEC 60738-1 7.22	a. 125°C x 16 hrs b. 1st cycle : 40 °C 95 %RH x 24 hrs c. -40 °C x 2 hrs d. 5 cycles : 40°C 95% RH x 24 hrs / Cycle	No visible damage $ \Delta R_{25}/R_{25}  \leq 20\%$															
Solderability	IEC 60068-2-58	245 ± 5 °C , 3 ± 0.3 sec	At least 95% of terminal electrode is covered by new solder															
Resistance to Soldering Heat	IEC 60068-2-58	8.1.2.2 Solder reflow method Preheating: 150~180°C ,60~120 secs. Peak temp.: 245~255°C , ≤20 secs. (reflow)	No visible damage $ \Delta R_{25}/R_{25}  \leq 20\%$															

## Soldering Recommendation

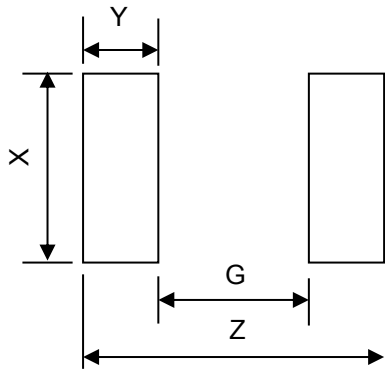
### ■ IR-Reflow Soldering Profile



### ■ Recommended Reworking Conditions with Soldering Iron

Item	Conditions
Temperature of Soldering Iron-tip	360°C (max.)
Soldering Time	3 sec (max.)
Diameter of Soldering Iron-tip	φ 3mm (max.)
Caution: Not to touch the component surface with soldering iron directly to prevent component damage.	

Recommended Soldering Pad Dimensions



Size (EIA)	1210
Z	4.5 mm
G	2.1 mm
X	2.8 mm
Y	1.2 mm

RoHS Compliant Declaration

We hereby declare that the components delivered to your company are compliant with RoHS directive 2011/65/EU.

Warehouse Storage Conditions of Products

(I) Storage Conditions :

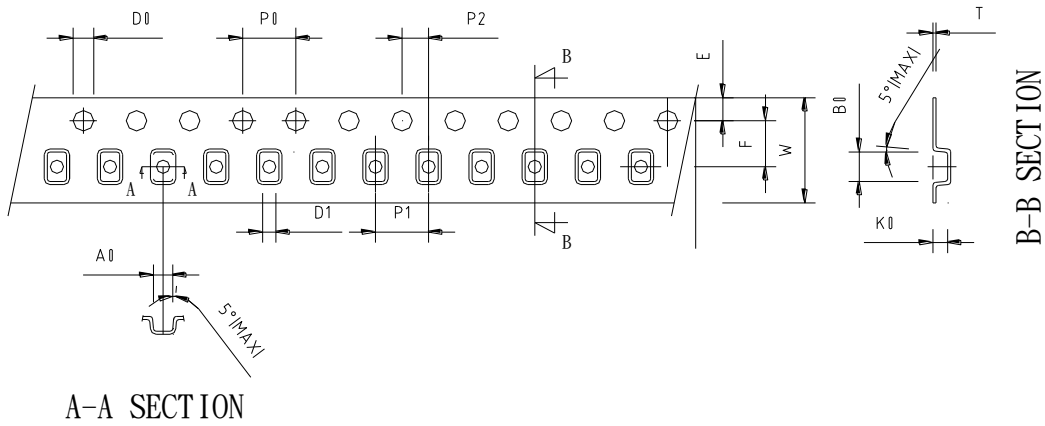
- 1.Storage Temperature : -10°C~+40°C
- 2.Relative Humidity :  $\leq 75\%RH$
- 3.Keep away from corrosive atmosphere and sunlight.

(II) Period of Storage : 1 year



## Packaging

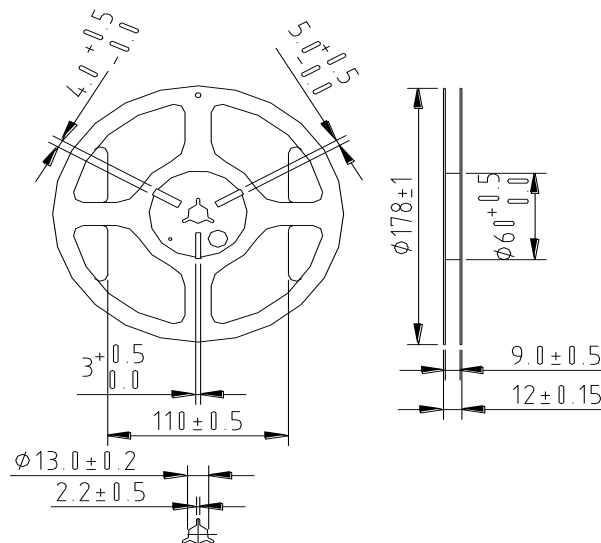
### ■ Taping Specification ( 1210 Series)



(Unit : mm)

Index	$A_0$	$B_0$	$W$	$E$	$F$	$P_1$	$P_2$	$P_0$	$D_0$	$D_1$	$T$
Size	$\pm 0.2$	$\pm 0.2$	$\pm 0.2$	$\pm 0.1$	$\pm 0.05$	$\pm 0.1$	$\pm 0.05$	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$
1210	2.75	3.55	8	1.75	3.5	4	2	4	1.55	1	0.25

### ■ Quantity ( 2500 pcs / reel )



### Certificates

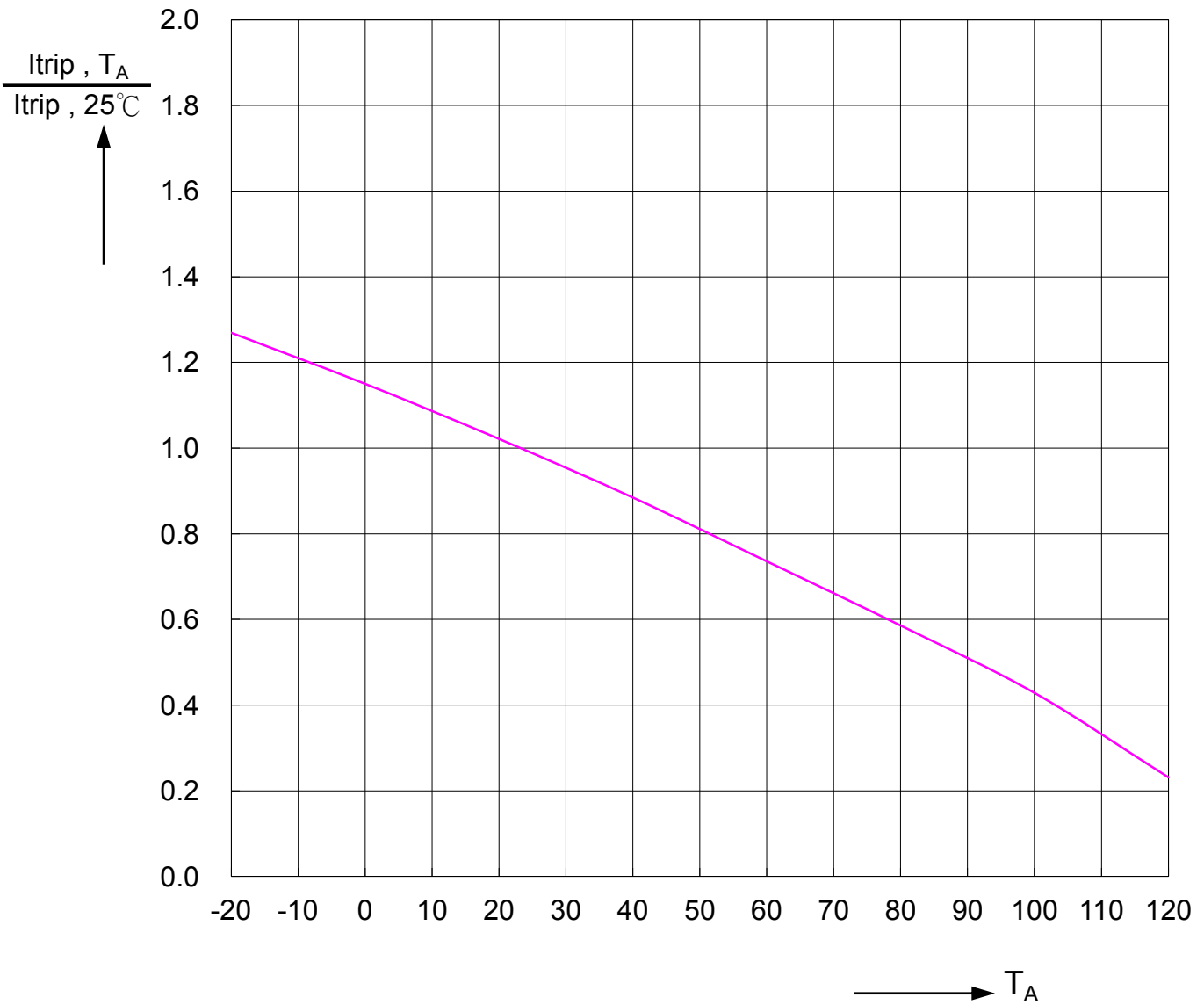
- (1) TS 16949 certificate
- (2) ISO 9001 certificate
- (3) QC 080000 certificate

### Test Report

- (1) RoHS test report
- (2) Halogen-free test report

Protective Threshold Current Range

TPM4P550H120R



$I_{trip}$  : Trip Current

$T_A$  : Ambient Temperature