

Product name TSX-3225 16.000000 MHz 9.0 +10.0-10.0

Product Number / Ordering code X1E0000210112xx

Please refer to the 5.Packing information about xx (last 2 digits)

Pb free / Complies with EU RoHS directive

Reference weight Typ. 17 mg

**1.Absolute maximum ratings**

| Parameter             | Symbol | Min. | Typ. | Max. | Unit | Conditions / Remarks      |
|-----------------------|--------|------|------|------|------|---------------------------|
| Storage temperature   | T_stg  | -40  | —    | +125 | °C   | Storage as single product |
| Operating temperature | T_use  | -40  | —    | +105 | °C   |                           |

**2.Specifications(characteristics)**

| Parameter                            | Symbol | Min. | Typ.      | Max. | Unit                    | Conditions / Remarks |
|--------------------------------------|--------|------|-----------|------|-------------------------|----------------------|
| Nominal frequency                    | f_nom  | —    | 16.000000 | —    | MHz                     | Fundamental          |
| Frequency tolerance                  | f_tol  | -10  | —         | +10  | x 10 <sup>-6</sup>      | @+25°C               |
| Frequency Stability over temperature | f_tem  | -10  | —         | +10  | x 10 <sup>-6</sup>      | -20°C to +75°C       |
| Operating temperature                | T_use  | -20  | —         | +75  | °C                      |                      |
| Level of drive                       | DL     | 1    | 10        | 200  | μW                      |                      |
| Load capacitance                     | CL     | —    | 9         | —    | pF                      |                      |
| Motional resistance (ESR)            | R1     | —    | —         | 60   | Ω                       |                      |
| Motional capacitance                 | C1     | —    | 2.56      | —    | fF                      |                      |
| Motional inductance                  | L1     | —    | 38.65     | —    | mH                      |                      |
| Shunt capacitance                    | C0     | —    | 1.09      | —    | pF                      |                      |
| Frequency aging                      | f_age  | -1   | —         | +1   | x10 <sup>-6</sup> /year | @+25°C, First year   |

**3.External dimensions (Unit: mm)****4.Footprint(Recommended) (Unit: mm)****5.Packing information**

[ 1 ] Product number last 2 digits code (xx) description

The recommended code is "17"

X1E0000210112xx

| Code | Condition                    | Code | Condition      |
|------|------------------------------|------|----------------|
| 01   | Any Q'ty vinyl bag(Tape cut) | 00   | 2000pcs / Reel |
| 11   | Any Q'ty / Reel              | 16   | 3000pcs / Reel |
| 12   | 250pcs / Reel                | 17   | 4000pcs / Reel |
| 14   | 1000pcs / Reel               |      |                |

## [ 2 ] Taping specification

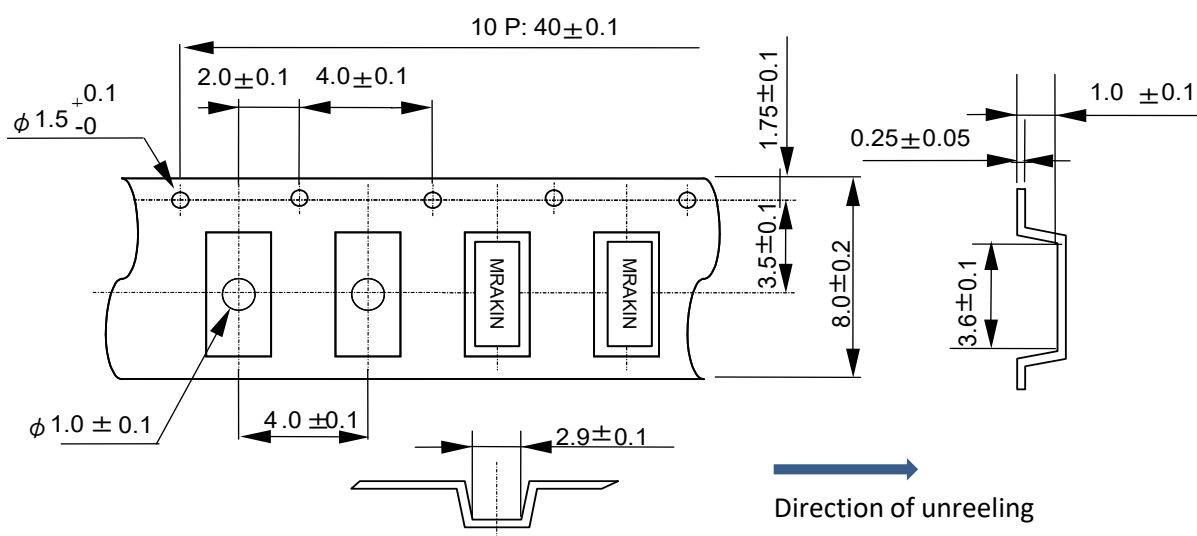
Subject to EIA-481 &amp; IEC-60286

## (1) Tape dimensions TE0804L

Material of the Carrier Tape : PS

Material of the Top Tape : PET+PE

Unit: mm



## (2) Reel dimensions

Center material : PS

Material of the Reel : PS

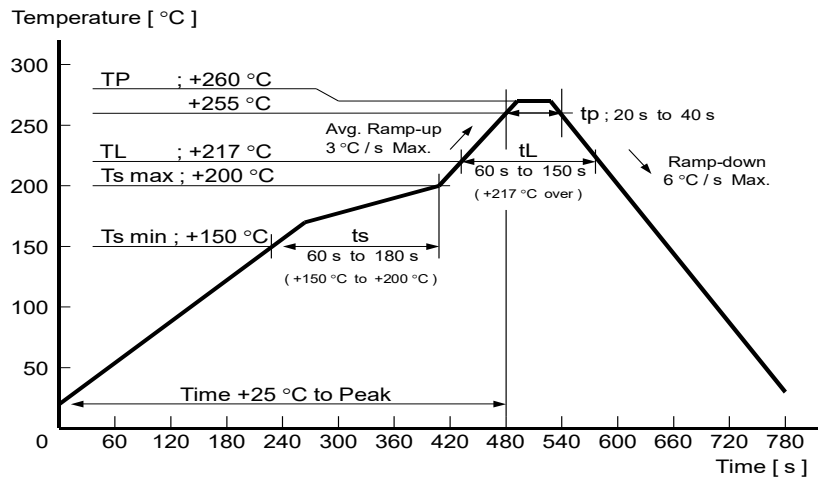
Unit: mm



| V(mm)         | W(mm)        |
|---------------|--------------|
| 9.0 $\pm$ 0.3 | 11.4 $\pm$ 1 |

## 6. Reflow profile

Reflow condition (Follow of JEDEC STD-020D.01)



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