

Product name FA-238 27.000000 MHz 18.0 +50.0-50.0

Product Number / Ordering code Q22FA23800028xx

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

Pb free / Complies with EU RoHS directive

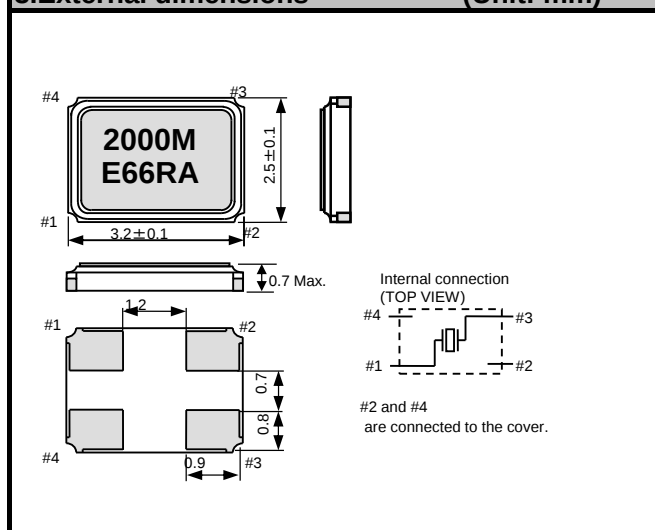
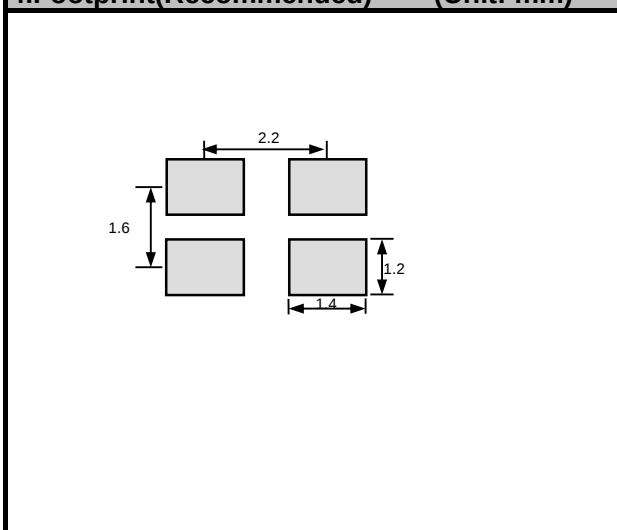
Reference weight Typ. 16 mg

**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  | -    | 27.000000 | -    | MHz                     | Fundamental          |
| Frequency tolerance                  | f_tol  | -50  | -         | +50  | x 10 <sup>-6</sup>      | @+25°C               |
| Frequency Stability over temperature | f_tem  | -30  | -         | +30  | x 10 <sup>-6</sup>      | -20°C to +70°C       |
| Operating temperature                | T_use  | -20  | -         | +70  | °C                      |                      |
| Level of drive                       | DL     | 10   | 100       | 200  | μW                      |                      |
| Load capacitance                     | CL     | -    | 18        | -    | pF                      |                      |
| Motional resistance (ESR)            | R1     | -    | -         | 50   | Ω                       |                      |
| Motional capacitance                 | C1     | -    | 3.23      | -    | fF                      |                      |
| Motional inductance                  | L1     | -    | 10.75     | -    | mH                      |                      |
| Shunt capacitance                    | C0     | -    | 1.07      | -    | pF                      |                      |
| Frequency aging                      | f_age  | -5   | —         | +5   | 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"

Q22FA23800028xx

| Code | Condition                    | Code | Condition      |
|------|------------------------------|------|----------------|
| 01   | Any Q'ty vinyl bag(Tape cut) | 14   | 1000pcs / Reel |
| 11   | Any Q'ty / Reel              | 15   | 2000pcs / Reel |
| 12   | 250pcs / Reel                | 00   | 3000pcs / Reel |
| 13   | 500pcs / Reel                | 17   | 4000pcs / Reel |

## [ 2 ] Taping specification

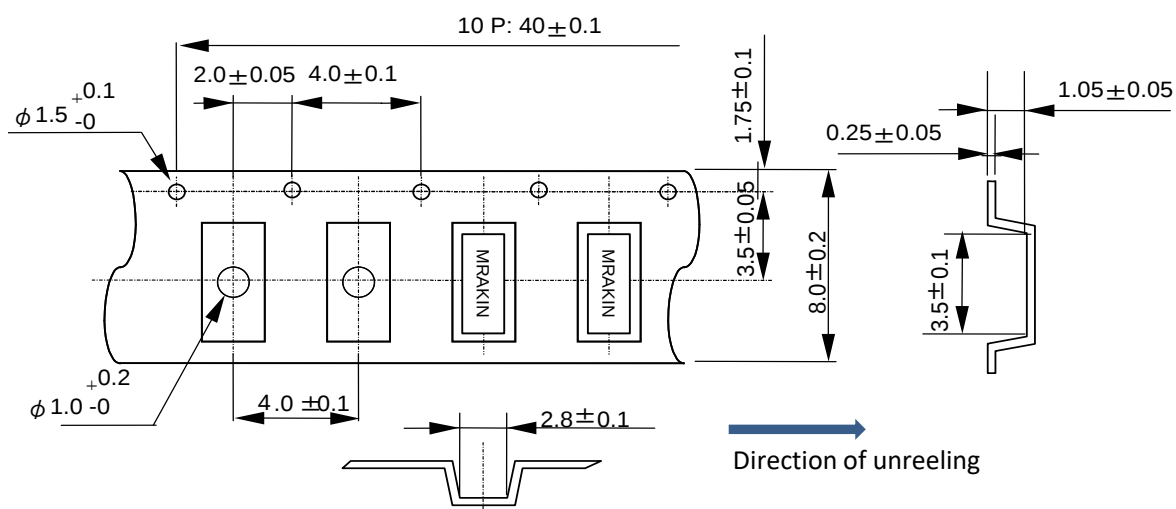
Subject to EIA-481 & IEC-60286

(1) Tape dimensions TE0804L

Material of the Carrier Tape : PS

Material of the Top Tape : PET+PE

Unit: mm

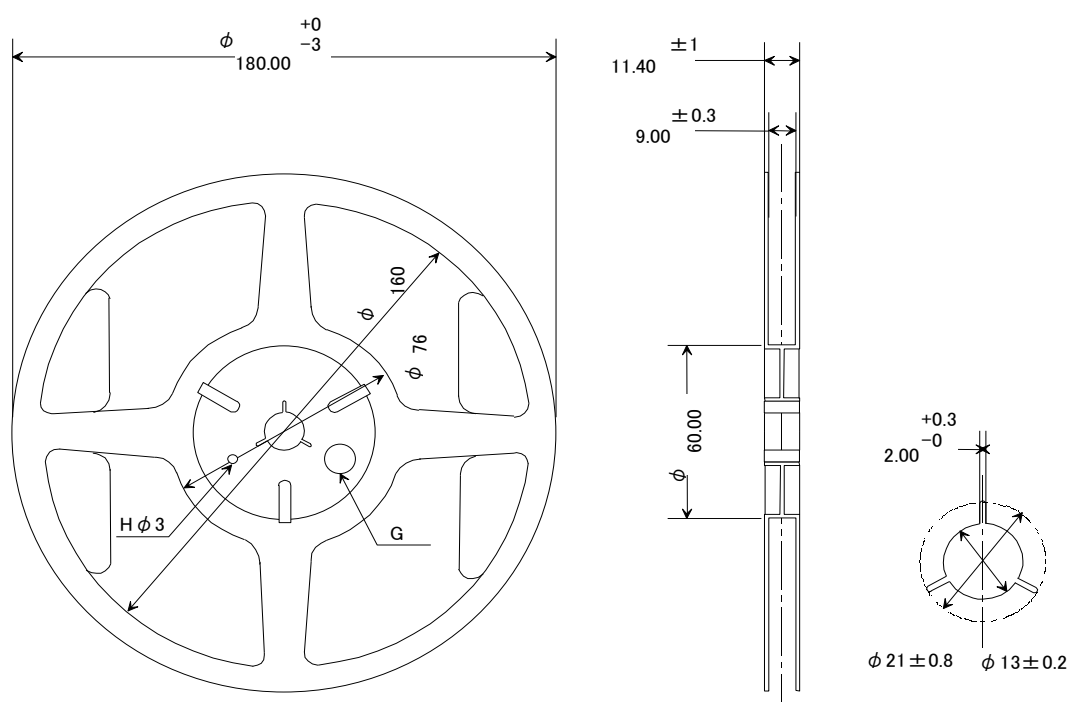


(2) Reel dimensions

Center material : PS

Material of the Reel : PS

Unit: mm



## 6. Reflow profile

### Reflow condition

Pre Heating Temperature

$Tp1 \sim Tp2 = +170^{\circ}C$

Heating Temperature

$TMit = +220^{\circ}C$

Peek Temperature

$TMax. = +260^{\circ}C$

Point of measuring

In case of Solderability  
Terminal.

In case of Resistance to soldering heat  
Surface.

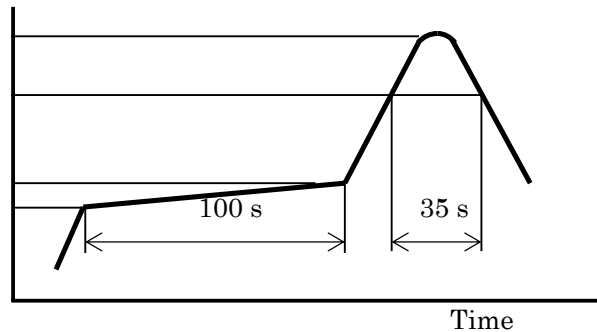
Temperature

$TMax.$

$TMit$

$Tp2$

$Tp1$



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