

Product name FA-238V 12.000000 MHz 10.0 +50.0-50.0 (Custom products for IC reference)

Product Number / Ordering code Q22FA23V00019xx

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

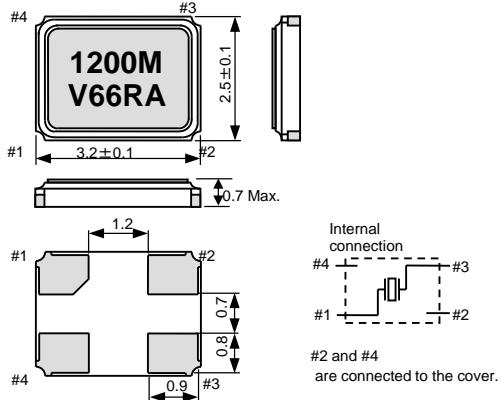
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Storage temperature	T_stg	-40	-	+125	°C	Storage as single product
Operating temperature	T_use	-40	-	+105	°C	

2.Specifications(characteristics)

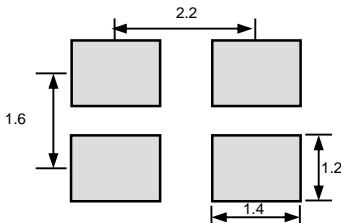
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Nominal frequency	f_nom	—	12.000000	—	MHz	Fundamental
Frequency tolerance	f_tol	-50	-	+50	$\times 10^{-6}$	@+25°C
Frequency Stability over temperature	f_tem	-30	-	+30	$\times 10^{-6}$	-20°C to 70°C
Operating temperature	T_use	-20	-	+70	°C	
Level of drive	DL	10	100	200	µW	
Load capacitance	CL	—	10	—	pF	
Motional resistance (ESR)	R1	-	-	100	Ω	
Motional capacitance	C1	-	2.01	-	fF	
Motional inductance	L1	-	87.68	-	mH	
Shunt capacitance	C0	-	0.96	-	pF	
Frequency aging	f_age	-5	—	+5	$\times 10^{-6}$ /yea	@+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

Q22FA23V00019xx

The recommended code is "17"

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

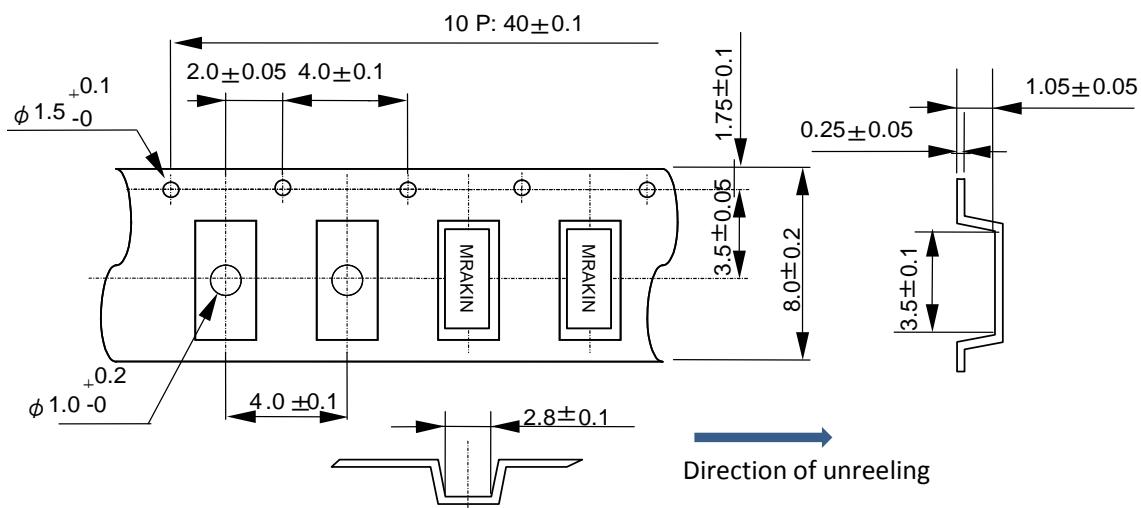
Subject to EIA-481 & IEC-60286

(1) Tape dimensions TE0804L

Material of the Carrier Tape : PS

Material of the Top Tape : PET+PE

Unit: mm

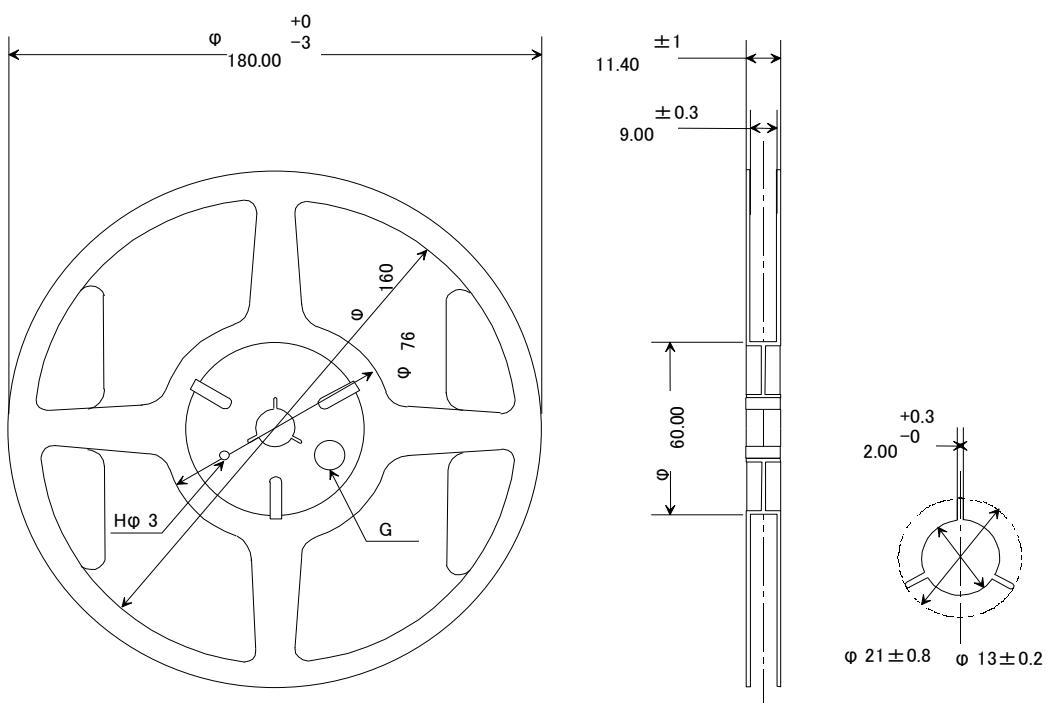


(2) Reel dimensions

Center material : PS

Material of the Reel : PS

Unit: mm



6.Reflow profile

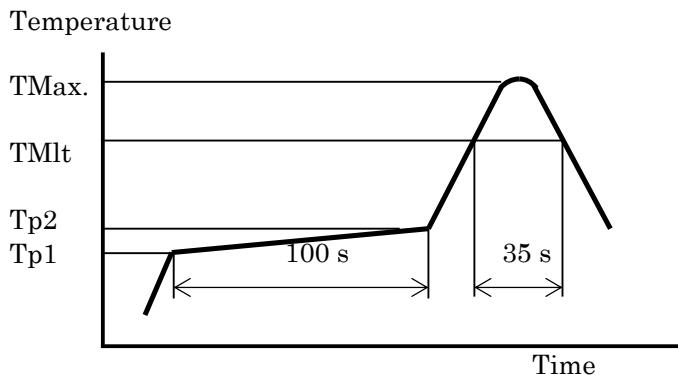
Reflow condition

Pre Heating Temperature
 $T_{p1} \sim T_{p2} = + 170^{\circ} \text{ C}$

Heating Temperature
 $T_{Mlt} = + 220^{\circ} \text{ C}$

Peek Temperature
 $T_{Max.} = + 260^{\circ} \text{ C}$

Point of measuring
 In case of Solderability
 Terminal.
 In case of Resistance to soldering heat
 Surface.



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