

# MHz Range Crystal unit

# FA-20H

SEIKO EPSON CORPORATION

Product name FA-20H 24.000000 MHz 10.0 +10.0-10.0

Product Number / Ordering code Q24FA20H00092xx

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

Pb free / Complies with EU RoHS directive

Reference weight Typ. 11 mg

## 1. Absolute maximum ratings

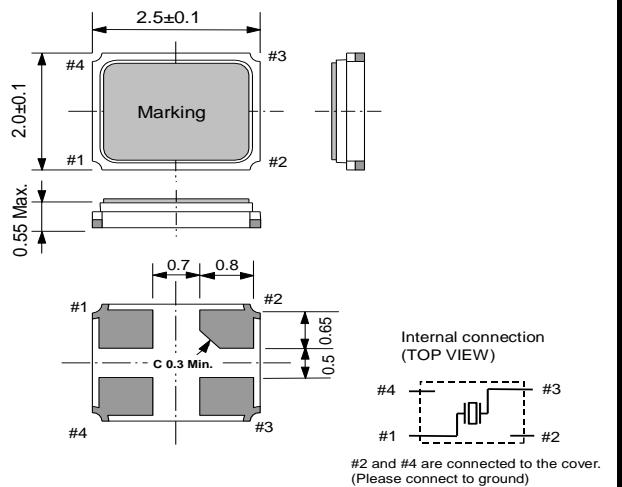
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Storage temperature	T_stg	-40	-	+125	°C	Storage as single product
Operating temperature	T_use	-40	-	+105	°C	

## 2.Specifications(characteristics)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Nominal frequency	f_nom	—	24.000000	—	MHz	Fundamental
Frequency tolerance	f_tol	-10	-	+10	$\times 10^{-6}$	@+25°C
Frequency Stability over temperature	f_tem	-20	-	+20	$\times 10^{-6}$	-40°C to +85°C
Operating temperature	T_use	-40	-	+85	°C	
Level of drive	DL	10	-	100	µW	
Load capacitance	CL	—	10	—	pF	
Motional resistance (ESR)	R1	-	-	80	Ω	
Motional capacitance	C1	-	2.71	-	fF	
Motional inductance	L1	-	16.23	-	mH	
Shunt capacitance	C0	-	1.01	-	pF	
Frequency aging	f_age	-1	—	+1	$\times 10^{-6}$ /yea	@+25°C, First year

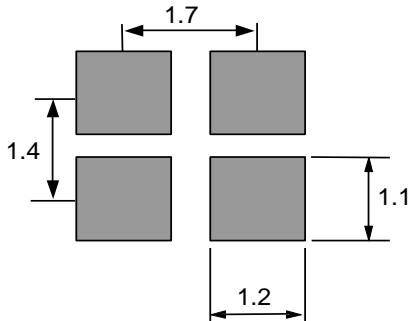
## 3.External dimensions

(Unit: mm)



## 4.Footprint(Recommended)

(Unit: mm)



## 5.Packing information

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

Q24FA20H00092xx

The recommended code is "18"

Code	Condition	Code	Condition
01	Any Q'ty vinyl bag(Tape cut)	00	3000pcs / Reel
11	Any Q'ty / Reel	18	5000pcs / Reel
12	250pcs / Reel		
14	1000pcs / Reel		

[ 2 ] Taping specification

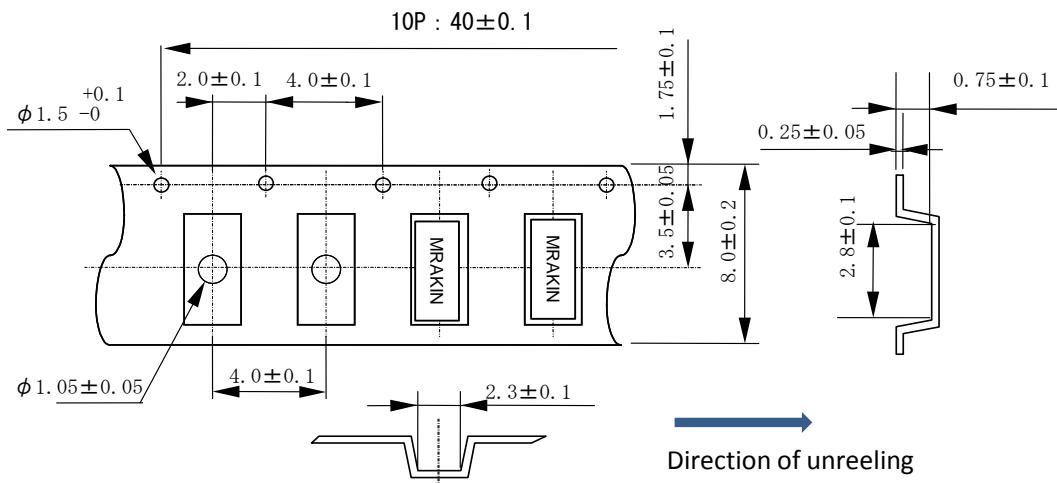
Subject to EIA-481 & IEC-60286

(1) Tape dimensions TE0804L

Material of the Carrier Tape : PS

Material of the Top Tape : PET+PE

Unit: mm

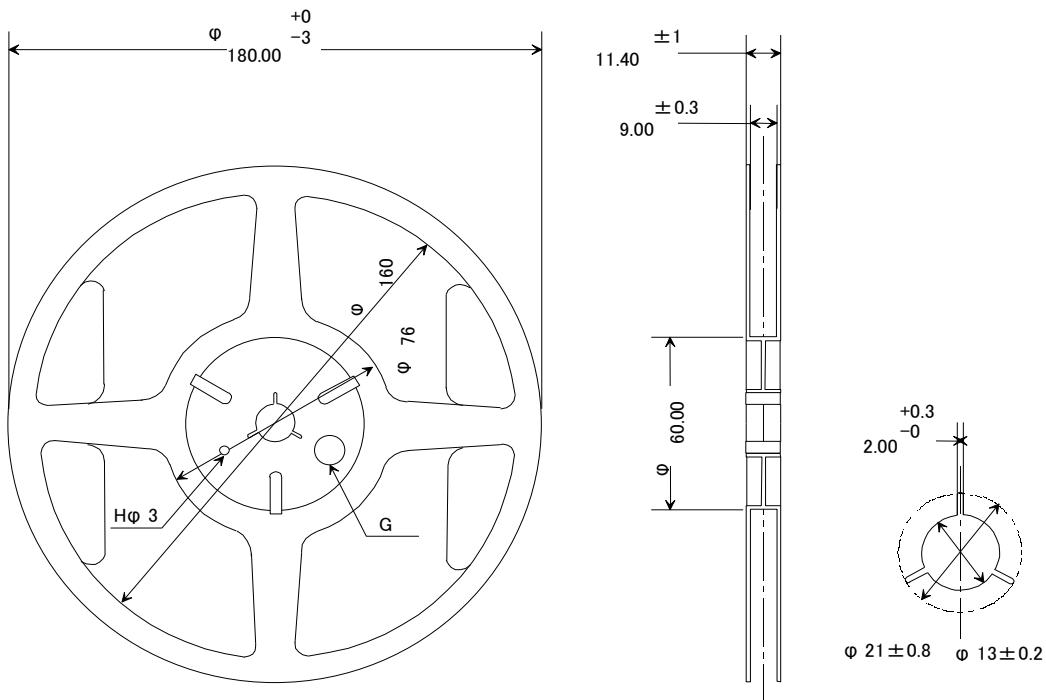


(2) Reel dimensions

Center material : PS

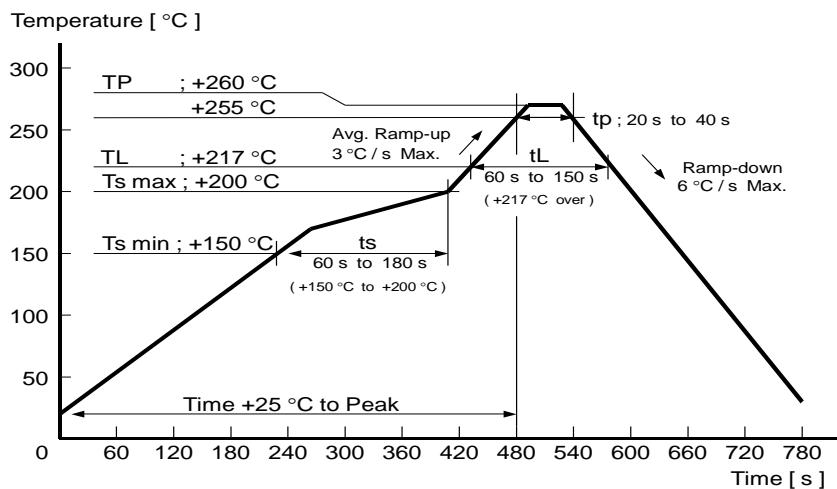
Material of the Reel : PS

Unit: mm



## 6.Reflow profile

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



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