MHz Range Crystal unit FA-20H **SEIKO EPSON CORPORATION**

Product name FA-20H 12.000000 MHz 10.0 +30.0-30.0
Product Number / Ordering code Q24FA20H00152xx

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

Pb free / Complies with EU RoHS directive
Reference weight Typ. 11 mg

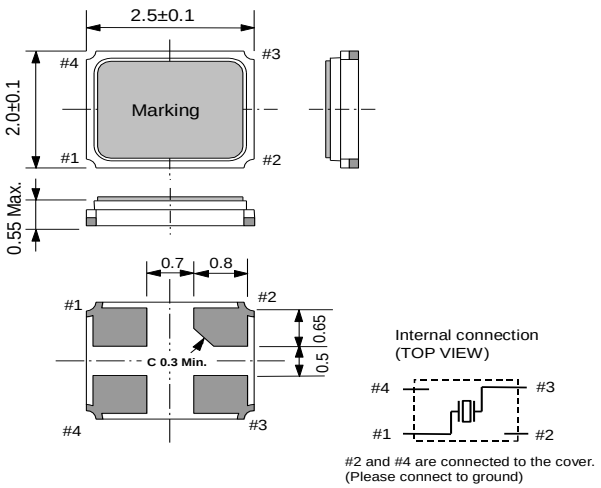
1.Absolute maximum ratings

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

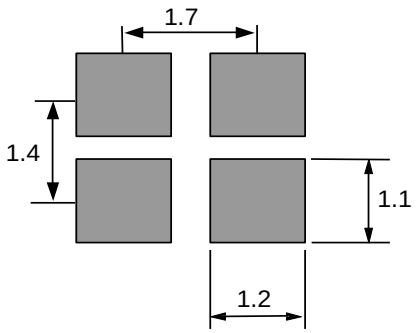
2.Specifications(characteristics)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Nominal frequency	f_nom	—	12.000000	—	MHz	Fundamental
Frequency tolerance	f_tol	-30	-	+30	x 10^{-6}	@+25ºC
Frequency Stability over temperature	f_tem	-30	-	+30	x 10^{-6}	-20ºC to +75ºC
Operating temperature	T_use	-20	-	+75	ºC	
Level of drive	DL	10	-	100	µW	
Load capacitance	CL	—	10	—	pF	
Motional resistance (ESR)	R1	-	-	150	Ω	
Motional capacitance	C1	-	1.46	-	fF	
Motional inductance	L1	-	120.10	-	mH	
Shunt capacitance	C0	-	0.75	-	pF	
Frequency aging	f_age	-1	—	+1	x10^{-6} /yea	@+25ºC, 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 "18"

Q24FA20H00152xx

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

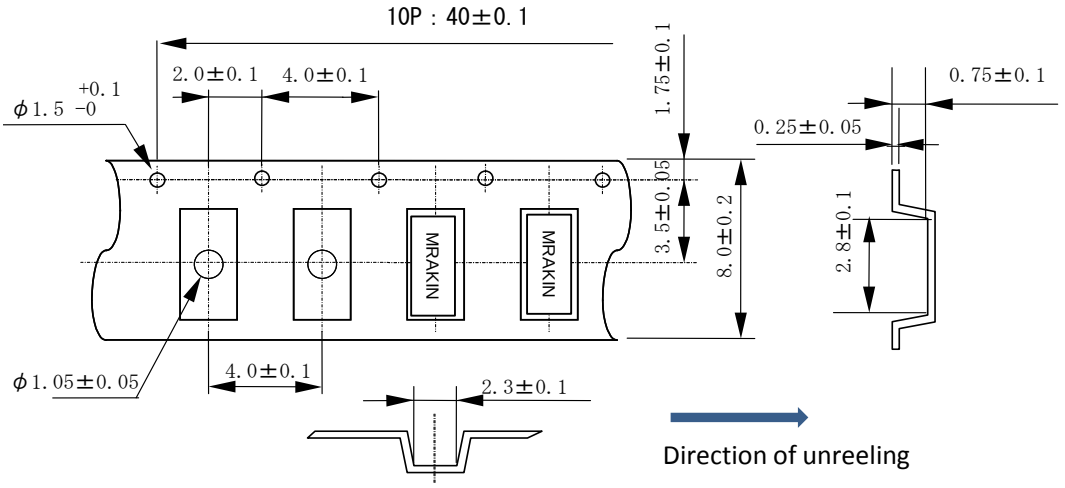
Subject to EIA-481 & IEC-60286

(1) Tape dimensions TE0804L

Material of the Carrier Tape : PS

Material of the Top Tape : PET+PE

Unit: mm

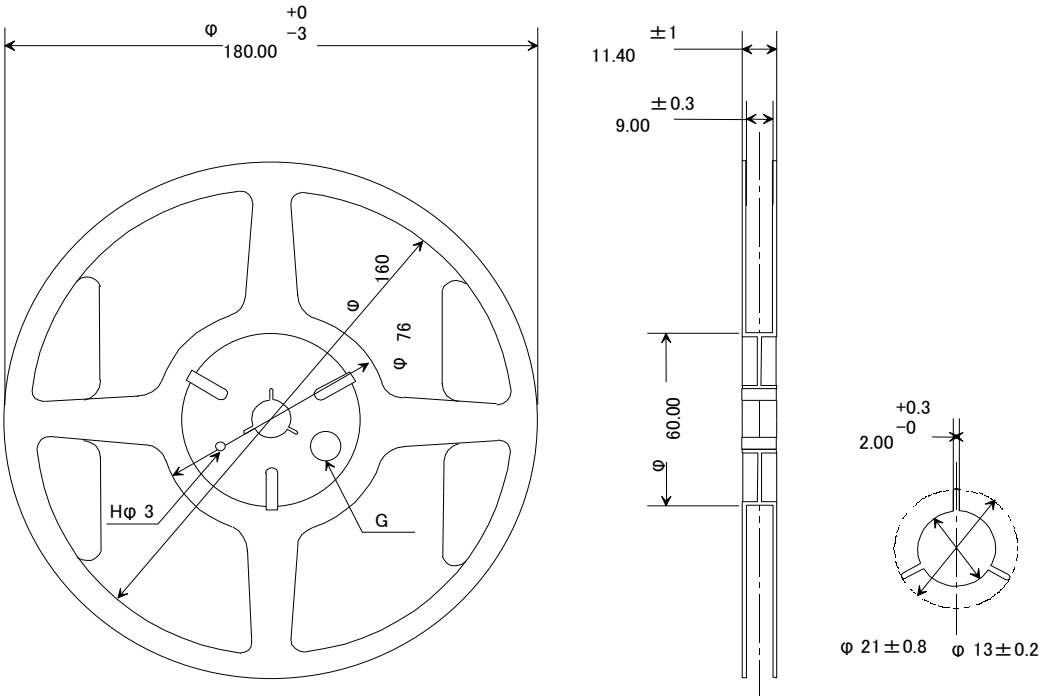


(2) Reel dimensions

Center material : PS

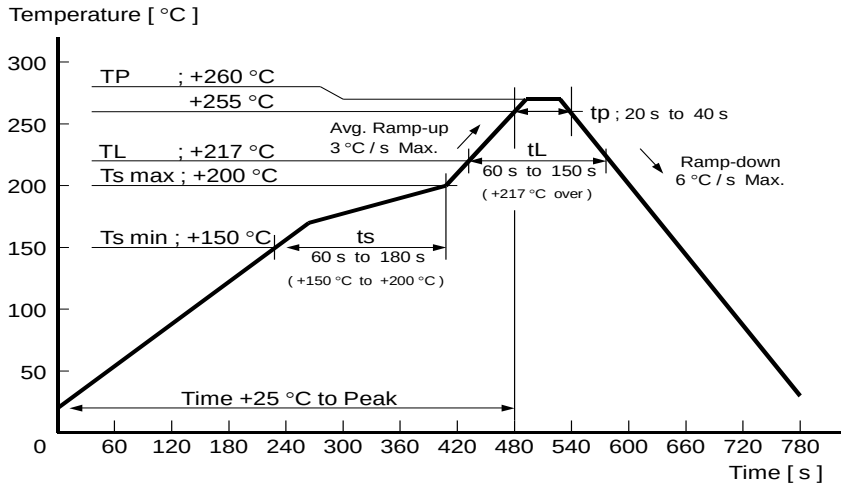
Material of the Reel : PS

Unit: mm



6.Reflow profile

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



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