MC-146

## **SEIKO EPSON CORPORATION**

Product name

Product Number / Ordering code

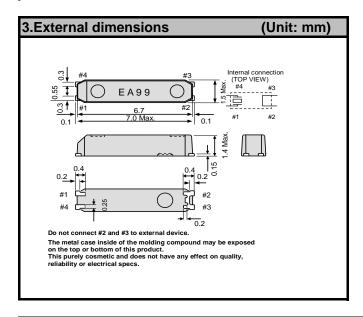
MC-146 32.768000 kHz 12.5 +20.0-20.0 Q13MC14620002xx

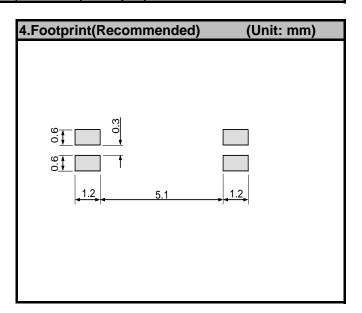
Please refer to the 5.Packing information about xx (last 2 digits)

Complies with EU RoHS directive Reference weight Typ. 29 mg

1.Absolute maximum ratings						
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions / Remarks
Storage temperature	T_stg	-55	-	+125	٥C	Storage as single product
Maximum drive level	GL	-	-	1.0	μW	

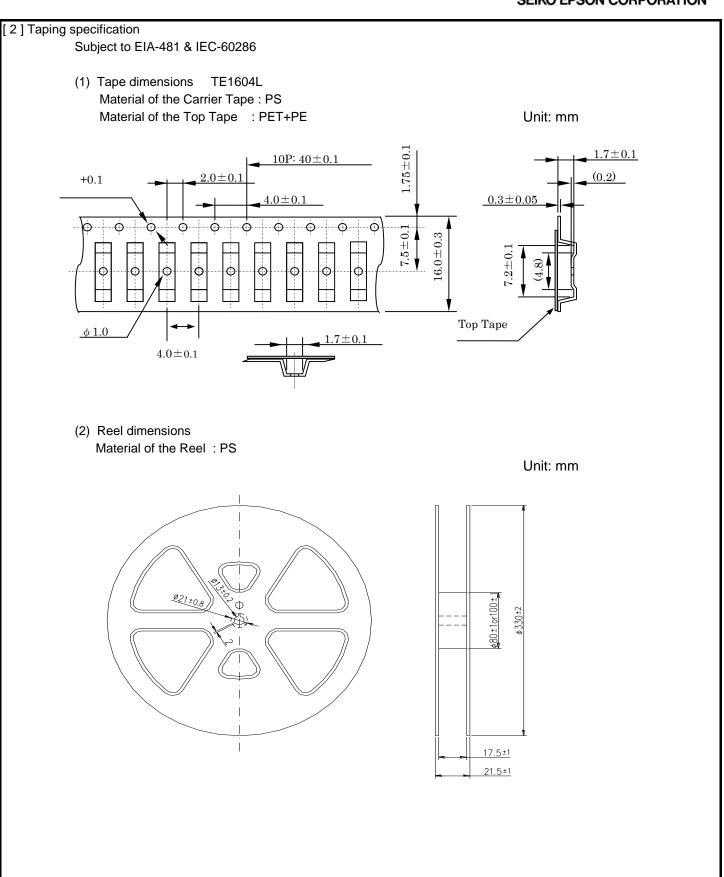
2.Specificatoins(characteri	istics)					
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions / Remarks
Nominal frequency	f_nom	-	32.768	-	kHz	
Operating temperature	T_use	-40	-	+85	۰C	
Level of drive	DL	-	-	1.0	μW	
Frequency tolerance	f_tol	-20.0	-	+20.0	x 10 <sup>-6</sup>	+25°C DL=0.1μW
Turnover temperature	Ti	+20	+25	+30	۰C	
Parabolic coefficient	В	-	-	-0.04	x 10 <sup>-6</sup> /°C <sup>2</sup>	
Load capacitance	CL	-	12.5	-	pF	
Motional resistance (ESR)	R1	-	45	65	kΩ	
Motional capacitance	C1	-	1.9	-	fF	
Shunt capacitance	C0	-	0.8	-	pF	
Motional inductance	L1	-	11.7	-	kH	
Frequency aging	f_age	-3	-	+3.0	x10 <sup>-6</sup> /yea	@+25°C, First year





5.Packing	information	on		
[ 1 ]Product number last 2 digits code (xx) description		The recommended code is "0X"		
	Q13MC14	620002xx		
	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	0X	9000pcs / Reel

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## Reflow profile

Pre Heating Temperature

Tp1 ~ Tp2 = + 170 °C

Heating Temperature

TMIt = + 220 °C

Peek Temperature

TMax. = + 260 °C

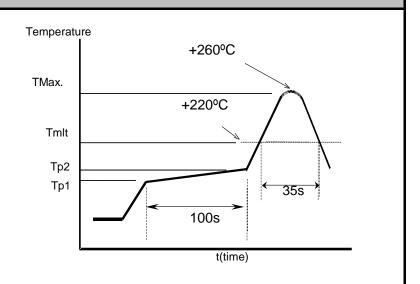
Point of measuring

In case of Solder ability

Terminal.

In case of Resistance to soldering heat

Surface.



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