MC-146

SEIKO EPSON CORPORATION

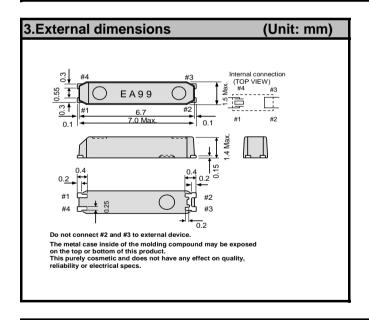
Product name Product Number / Ordering code MC-146 32.768000 kHz 9.0 +20.0-20.0 Q13MC14620004xx

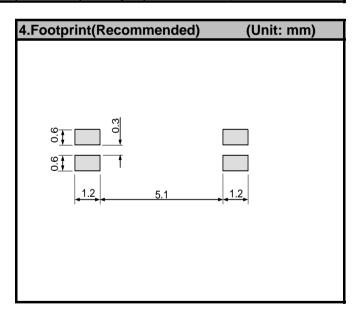
Please refer to the 5.Packing information about xx (last 2 digits)

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	°C	Storage as single product
Maximum drive level	GL	-	-	1.0	μW	

2.Specificatoins(characteristics)						
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 ⁻⁶	+25°C DL=0.1µW
Turnover temperature	Ti	20	25	30	۰C	
Parabolic coefficient	В	-	-	-0.04	x 10 ⁻⁶ /°C ²	
Load capacitance	CL	-	9.0	-	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	x10 ⁻⁶ /yea	@+25°C, First year





5.Pa	acking	ı info	rmat	ion

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

The recommended code is "0X"

Q13MC14620004xx

Q10W014020004XX					
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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[2] Taping specification Subject to EIA-481 & IEC-60286 (1) Tape dimensions TE1604L Material of the Carrier Tape: PS Material of the Top Tape : PET+PE Unit: mm 1.7 ± 0.1 $10P: 40 \pm 0.1$ (0.2)+0.1 2.0 ± 0.1 4.0 ± 0.1 0.3 ± 0.05 7.5 ± 0.1 Ó Φ Φ Top Tape φ 1.0 1.7 ± 0.1 4.0 ± 0.1 (2) Reel dimensions Material of the Reel: PS Unit: mm Ø21±0.8 \$80±1or100± 17.5±1 21.5±1

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Reflow profile

Pre Heating Temperature

 $Tp1 \sim Tp2 = + 170 °C$

Heating Temperature

TMIt = + 220 °C

Peek Temperature

TMax. = + 260 °C

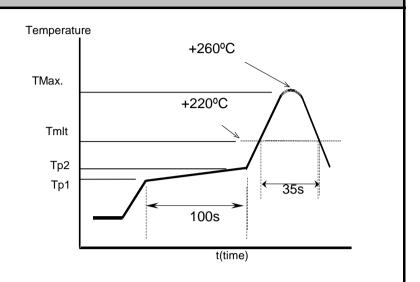
Point of measuring

In case of Solder ability

Terminal.

In case of Resistance to soldering heat

Surface.



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