

See table 1

# HIGH FREQUENCY, LEADED, INDUSTRIAL GRADE WASHABLE CERAMIC RESONATORS HWZT Series

## FEATURES:

- Low resonant impedance.
- High stability washable type.
- Small size, Light weight.
- Excellent environmental resistance.
- Low cost timing solution.

## APPLICATIONS:

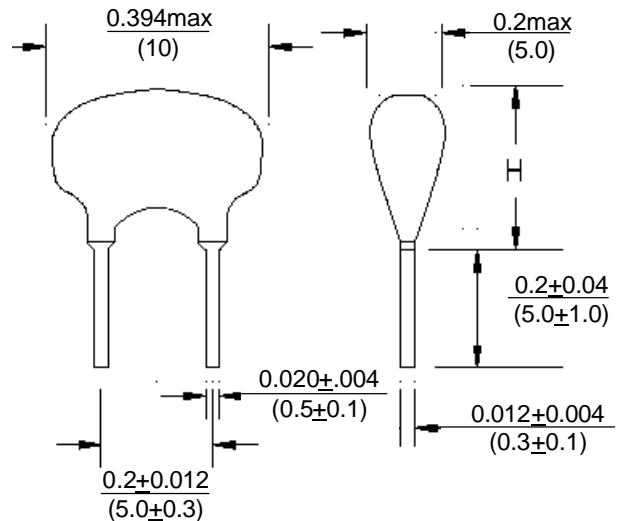
- Remote control systems in vehicles.
- Industrial controllers.
- Electric appliances.
- Clock oscillation for microcontrollers.
- Household electric appliances.
- Automotive controllers.

## STANDARD SPECIFICATIONS

Frequency Range (MHz)	Frequency Tolerance (at 25°C)	Frequency Stability (at -20°C to 80°C)	Resonant Impedance ( $\Omega$ ) max.	Operating temperature	Aging (10 yrs)	IC Tested	Vdd
1.8 ~ 6.00	$\pm 0.5\%$	$\pm 0.3\%$	100 for $1.80 \leq F < 3.0$ 50 for $3.0 \leq F < 3.5$ 30 for $3.5 \leq F \leq 6.0$	See table 2	$\pm 0.3\%$	MC14069UBP	5V
6.01 ~ 13.00	$\pm 0.5\%$	$\pm 0.3\%$	30	See table 2	$\pm 0.3\%$	MC14069UBP	12V
13.01 ~ 50.00	$\pm 0.5\%$	$\pm 0.3\%$	40	See table 2	$\pm 0.3\%$	TC74HCU04	5V

We can characterize your IC to meet exact oscillating conditions.  
Contact Abracon for details.

Storage temperature: -40°C to +125°C  
 Packaging: Bulk: Plastic packing 500pcs. See appendix H.  
 Ammo pack (Taping): carton box packing: 1,500pcs. See appendix H  
 Environmental and mechanical specification, see appendix C. Group 6.  
 Marking, see appendix G. Application notes, see appendix A.  
 Recommended handling, see appendix F.



## ORDERING OPTIONS

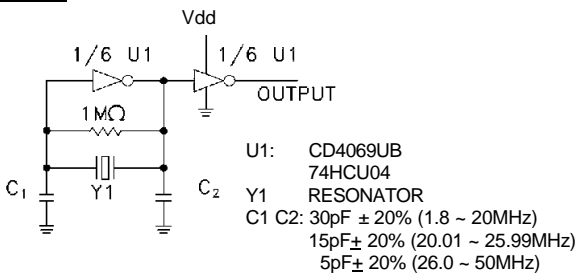
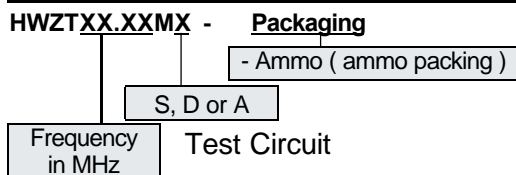


Table 1

Freq. (MHz)	H (max.)
1.8 ~ 13.0	0.295 (7.5)
13.01 ~ 23.99	0.395 (10)
24.0 ~ 50.0	0.295 (7.5)

Table 2

Series	Operating temperature
MS	-20°C to +80°C
MD	-40°C to +85°C
MA	-40°C to +125°C

(Freq.stability ~  $\pm 0.5\%$  typ.)  
 (Freq.stability ~  $\pm 0.7\%$  typ.)

Dimensions: Inches (mm)

NOTE: Left blank if standard • All specifications and markings subject to change without notice

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## **Washability Specification**

**This product can be washed using the following solvents  
under the suggested conditions:**

<b>Solvents:</b>
HCFC, Isopropyl Alcohol, Trichloroethane, Tap water, Demineralized Water, Pine Alpha ST-100S
<b>Ultrasonic Wash:</b>
Less than 1 min. (Frequency:28KHz,Ouput:20W/L) Immersion Wash or others: Less than 5 min.
<b>Solvents temperature should be at 60°C or under 60°C</b>
<b>Drying:</b>
By air blow at 80°C max.