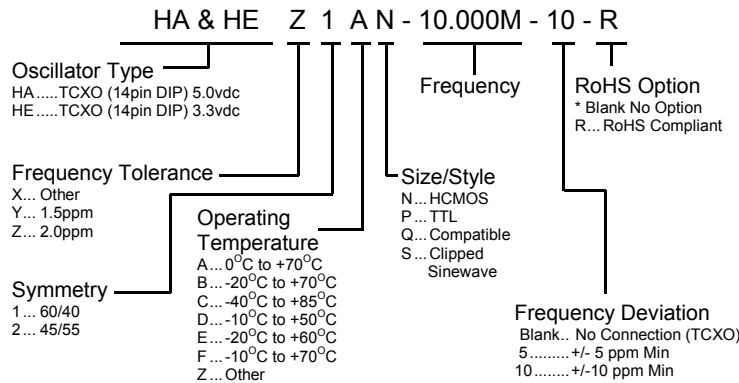




# TCXO & VCTCXO

HA / HE Series

HE - 3.3V<sub>DC</sub> & HA - 5.0V<sub>DC</sub> Hermetically Sealed



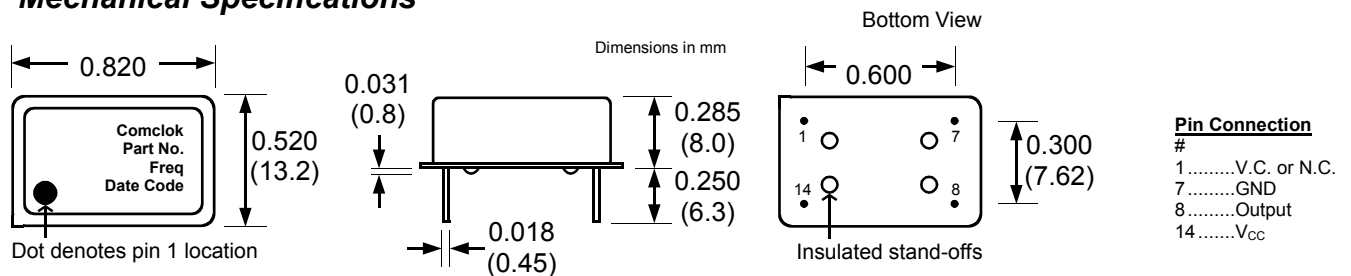
Operating Temperature	Range	Frequency Stability (*/- ppm)							
		1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
0 ~ 70°C		*	*	*	*	*	*	*	*
-10 ~ 60°C		*	*	*	*	*	*	*	*
-10 ~ 70°C		□	*	*	*	*	*	*	*
-20 ~ 70°C		□	*	*	*	*	*	*	*
-30 ~ 60°C			□	*	*	*	*	*	*
-30 ~ 70°C			□	*	*	*	*	*	*
-30 ~ 75°C				*	*	*	*	*	*
-40 ~ 80°C						*	*	*	*

\* Denotes Availability □ Not Available > 25MHz

## Electrical Specifications

Output		TTL / HCMOS		Clipped Sinewave	
Frequency Range		2.0MHz—35.0MHz		12.0MHz—35.0MHz	
Output	Load	2 TTL Load or 15pF HCMOS Load Max		20 Kohms // 5pF	
	Level	Hlgh	TTL : 2.4 V <sub>DC</sub> min CMOS : 90% of V <sub>DD</sub> min	1.0Vp-p min (V <sub>DD</sub> : 5.0V <sub>DC</sub> ) 0.8Vp-p min (V <sub>DD</sub> : 3.3V <sub>DC</sub> )	
Lo	TTL : 0.4 V <sub>DC</sub> Max CMOS : 10% of V <sub>DC</sub> Max				
Frequency Stability	Vs. Temp. Range	Calibration @ 25°C +/- 2ppm			
	Vs. Input Voltage +/-5%	+/- 0.5 ppm Max			
	Vs. Load +/-10%	+/- 0.3 ppm Max			
	Vs. Aging (@ 25°C)	+/- 1 ppm / Year Max			
Input	Voltage	+5.0 V <sub>DC</sub> +/-5%	+3.3 V <sub>DC</sub> +/-5%	+5.0V <sub>DC</sub> +/-5%	+3.3V <sub>DC</sub> +/-5%
	Current	20mA Max	15mA Max	2mA Max	1.5mA Max
Rise Time / Fall Time		5nS Max	4nS Max	-	
Duty Cycle		50% +/-10% Max			
Frequency Deviation (VCTCXO)		+/-5ppm or +/-10ppm Minimum Over Control Voltage			
Control Voltage (external)		2.5V <sub>DC</sub> +/-2.0V <sub>DC</sub> (5V <sub>DC</sub> ), 1.65V <sub>DC</sub> +/-1.0V <sub>DC</sub> (3.3V <sub>DC</sub> ) Positive Transfer Characteristic			

## Mechanical Specifications



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