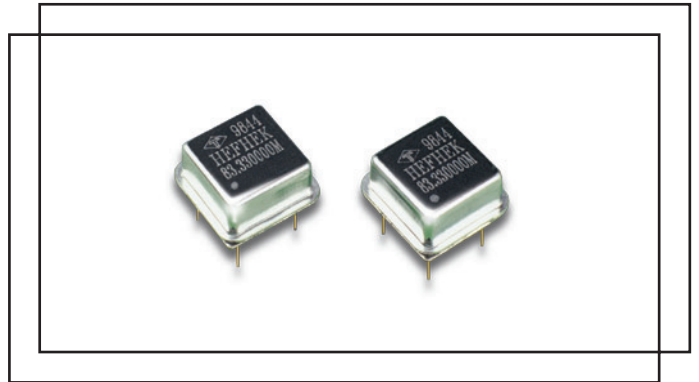


Type VH-W 4pin(8 pin DIL layout) (1.5 ~ 50)MHz

- # wide pulling range
- # good linearity
- # +3.3Vd.c., +5.0Vd.c. supply



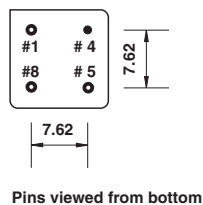
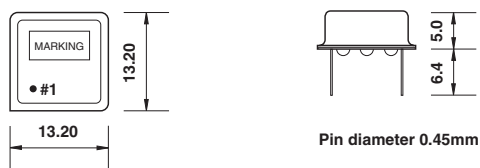
Electrical specification

Case style	4 pin(8 pin DIL layout): (13.2 x 13.2)mm, height 5.0mm		
Frequency range	(1.5 ~ 50)MHz		
Stability *	±(25 ~ 50)ppm, temperature range dependent		
Pulling range	±(100ppm ~ 200)ppm, customer specified		
Control voltage V_t	(±2.5 ±2.0)Vd.c., $V_{cc} = +5.0Vd.c.$, (+1.65 ±1.35)Vd.c., $V_{cc} = +3.3Vd.c.$		
Supply voltage V_{cc}		+3.3Vd.c.	+5.0Vd.c.
Supply current max.	(1.5 ~ 20)MHz	20mA	30mA
	(20 ~ 50)MHz	30mA	40mA
Rise and fall time max. **	(1.5 ~ 20)MHz	8ns	8ns
	(20 ~ 50)MHz	5ns	5ns
Operating temperature	(-20 +70)°C ~ (-40 +85)°C		
Storage temperature	(-55 +125)°C		
Output	TTL, CMOS		
Symmetry	(45 ~ 55)%, (40 ~ 60)%		
Ageing	±5ppm first year max.		

* inclusive of calibration tolerance at +25°C, temperature tolerance, supply voltage variation, load variation, first year ageing, shock and vibration.

** measured with an output load of 15pF, between (10 ~ 90)% V_{cc}

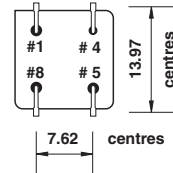
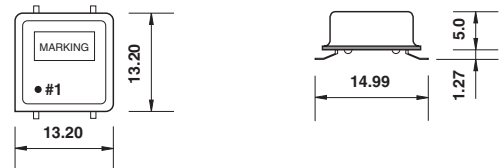
VF-W dimensions(mm), through hole



Pin connections

- # 1 voltage control
- # 4 case and ground
- # 5 output
- # 8 V_{cc}

VF-W dimensions(mm), gull wing



Pad connections

- # 1 voltage control
- # 4 case and ground
- # 5 output
- # 8 + V_{cc}

Type VH-W

Ordering information

Example type VH-W vcxo oscillator, 40.00MHz, $\pm 25\text{ppm}(-20 +70)^\circ\text{C}$ frequency stability, $\pm 100\text{ppm}$ pulling range, +3.3Vd.c., 8 pin DIL package, output CMOS 15pF, symmetry (45 ~ 55)%

TFC PART NUMBER VH 40.0M E W M C J

'VH' type number: VH = vcxo clock oscillator type VH-W

'40.0M' frequency: 40.0M = 40.00MHz, frequency range from (1.5 ~ 50)MHz

'E' supply voltage and package combination: E = +3.3Vd.c., 8 pin DIL through hole package

'W' VCXO designator

'M' frequency stability/pulling range combination: M = $\pm 25\text{ppm}$ frequency stability, $\pm 100\text{ppm}$ pulling range

'C' temperature range: C = $(-20 +70)^\circ\text{C}$

'J' output logic and symmetry: J = CMOS 15pF, (45 ~ 55)

Supply voltage and package combination

T: +5Vd.c., 8 pin DIL through hole
 G: +5Vd.c., gull wing package
 E: +3.3Vd.c., 8 pin DIL through hole
 F: +3.3Vd.c., gull wing package

Frequency stability/pulling range combination	frequency stability	pulling range
M:	$\pm 25\text{ppm}$	$\pm 100\text{ppm}$
G:	$\pm 35\text{ppm}$	$\pm 100\text{ppm}$
P:	$\pm 50\text{ppm}$	$\pm 100\text{ppm}$
R:	$\pm 50\text{ppm}$	$\pm 150\text{ppm}$
T:	$\pm 25\text{ppm}$	$\pm 150\text{ppm}$
K:	$\pm 50\text{ppm}$	$\pm 200\text{ppm}$

Temperature range

C: $(-20 +70)^\circ\text{C}$
 D: $(-30 +80)^\circ\text{C}$
 L: $(-40 +85)^\circ\text{C}$

Output logic and symmetry

A: TTL(45 ~ 55)%
 B: TTL(40 ~ 60)%
 R: TTL 50pF(40 ~ 60)%
 E: TTL 50pF(45 ~ 55)%
 J: CMOS 15pF(45 ~ 55)%
 K: CMOS 15pF(40 ~ 60)%
 F: CMOS 50pF(45 ~ 55)%
 G: CMOS 50pF(40 ~ 60)%

Environmental test conditions

Mechanical shock	1500g, half sine wave, 0.5ms, 3 directions	MIL STD 883D 2002.3, condition A
Thermal shock	$(-55 \sim +125)^\circ\text{C}$, 20 cycles	MIL STD 883D 1011.9, condition B
Vibration	(10 ~ 2000)Hz, 1.25mm, sine wave, 20g, each of three planes, duration 4 hours	MIL STD 883D 2005.2, condition B
Solderability	$+245^\circ\text{C} \pm 5^\circ\text{C}$, 5 seconds ± 0.5 seconds	MIL STD 883D 2003.7
Fine leak	Mass spectrometer leak rate less than 2^{10-8} atm.cc/sec. helium	MIL STD 883D 1014.9, condition A
Gross leak	Leak test in de-ionised water, vacuum 70cm/Hg	
Humidity	85% relative humidity, $+85^\circ\text{C}$, 500 hours	JIS-C 7022 B-5, condition C