



ROHS-Compliant Product

# V-650 Series



## 1. Specification

Specification:	V-650H	V-650A	V-650S	V-650P
Frequency range:	100kHz ... 90.0 MHz	90.0 ... 155.52 MHz	10.0 ... 155.52 MHz	44.736 ... 155.52 MHz
Nominal freq. Tolerance at $U_C = 2.5$ V, $T = 25 \pm 3^\circ\text{C}$ :	$< \pm 10$ ppm			
Temperature stability <b>Option 1</b> in the temp. range $-20^\circ\text{C}$ to $+70^\circ\text{C}$ :	<b>V-651H</b> $< \pm 15$ ppm	<b>V-651A</b> $< \pm 15$ ppm	<b>V-651S</b> $< \pm 15$ ppm	<b>V-651P</b> $< \pm 15$ ppm
Temperature stability <b>Option 2</b> in the temp. range $-40^\circ\text{C}$ to $+85^\circ\text{C}$ :	<b>V-652H</b> $< \pm 20$ ppm	<b>V-652A</b> $< \pm 20$ ppm	<b>V-652S</b> $< \pm 20$ ppm	<b>V-652P</b> $< \pm 20$ ppm
Frequency stability vs. supply voltage changes $U_B \pm 5\%$ : vs. load changes $\pm 5\%$ :	$< \pm 3$ ppm $< \pm 2$ ppm	$< \pm 1$ ppm $< \pm 2$ ppm	$< \pm 1$ ppm $< \pm 3$ ppm	$< \pm 1$ ppm $< \pm 0.5$ ppm
Aging @ $25^\circ\text{C}$ :	$< \pm 5$ ppm first year / $< \pm 2$ ppm / year following years			
Frequency control range / control voltage:	$\geq \pm 100$ ppm / 0.0 V to 3.3 V			
Transfer function / Linearity:	positive / 15 %			
Supply voltage $U_B$ :	$3.3$ V $\pm 5\%$			
Current consumption: $f \leq 68.736$ : $f > 68.736$	$\leq 40$ mA $\leq 50$ mA	$\leq 35$ mA	$\leq 35$ mA	$\leq 50$ mA
Output voltage : load : duty cycle :	LVHCMOS 1kOhm//15pF 40 / 60 %	LVHCMOS 1kOhm//10pF 45 / 55 %	Sine, $> 0$ dBm 50 Ohm	LVPECL 100k 50 Ohm 40 / 60%
Temperature ranges Operating: Operable: Storage:	$-40^\circ\text{C}$ ... $+85^\circ\text{C}$ $-45^\circ\text{C}$ ... $+85^\circ\text{C}$ $-45^\circ\text{C}$ ... $+105^\circ\text{C}$			

## 2. Environmental conditions

According to KVG Product Qualification Procedure AA-QM-200

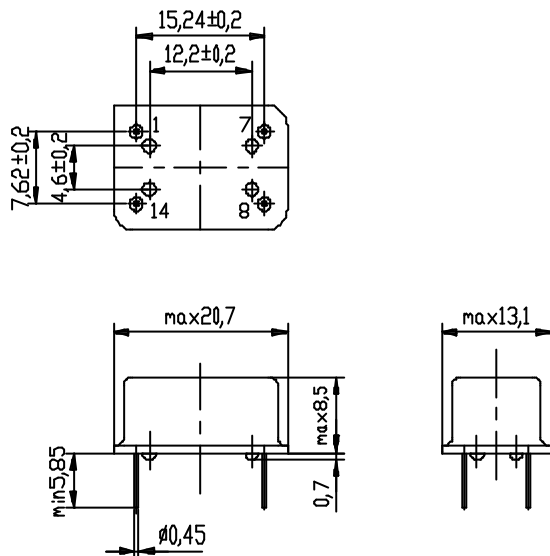
## 3. Marking

Manufacturer's name, date code(week/year); Specification; Center frequency

5	Temp.Opt $-40/+85^\circ\text{C}$ ; Frequ.Range V-650H	22.06.06	M. Zupan	KVG Quartz Crystal Technology GmbH P.O.Box 61 D-74924 Neckarbischofsheim Tel. +49 (0) 7263 / 648-0 Fax. +49 (0) 7263 / 6196
4	Test Circuit	07.08.00	H.-J. Herzog	
3	LVHCMOS load	12.01.00	H.-J. Herzog	
2	Current LVPECL	11.01.00	H.-J. Herzog	
ED	Description	Date	Name	

## 4. Case

Case style: BF-100 not hermetically sealed

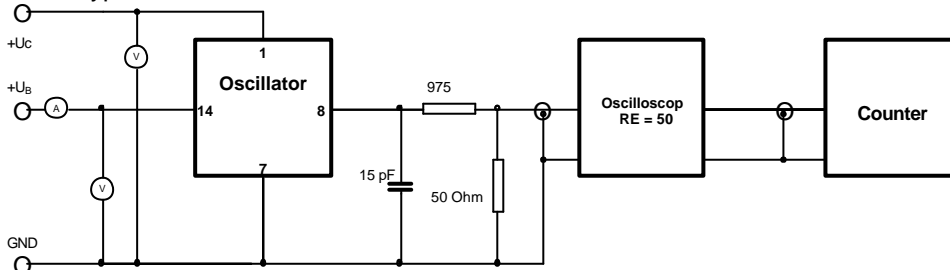


1.Pin configuration

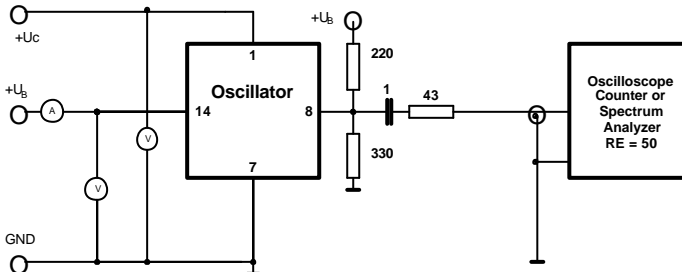
1. Control voltage  $U_C$
7. Ground, case
8. RF-output
14. Supply voltage  $U_B$

## 5. Test circuit

HCMOS Type H :



LVPECL Type P:



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