



High Frequency and Ultra Low Noise 5.0 x 3.2 mm VCXO

DESCRIPTION:

V-53HF- series is a high performance VCXO in 5.0 x 3.2 Ceramic SMD-package offering exceptional low Phase jitter values in the frequency range from 15 MHz up to 2.1 GHz



FEATURES:

- 15 MHz ... 2.1 GHz output signal
- Output: LVPECL, CML, HCSL and LVCMOS
- Supply voltage: 3.3V, 2.5V and 1.8V
- Phase jitter < 300 fs, typical 150 fs at 12 kHz to 20 MHz offset
- Pulling range APR > +/- 50 ppm
- Tri-state enable / disable mode

APPLICATIONS:

- High-Speed/High-Volume Data Transmissions
- Set-top Box
- HDTV
- xDSL/VoIP, Cable modems
- Jitter attenuator, ADC



KVG Quartz Crystal Technology GmbH

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ROHS-Compliant Product

V-53HF-series



1. Specification						
Frequency range:	15 MHz 2.1 GHz					
Supply voltage V_S :	Option A 3.3 V \pm 5 %	Option D 2.5 V \pm 5 %	Option E 1.8 V \pm 5 %			
Temperature range options:	1060 -10°C to +60°C	2070 -20°C to +70°C	4085 -40°C to +85°C			
Freq. stability - vs. temperature range	A = \pm 20 ppm B = \pm 25 ppm C = \pm 30 ppm D = \pm 50 ppm	B = \pm 25 ppm C = \pm 30 ppm D = \pm 50 ppm	B = \pm 25 ppm C = \pm 30 ppm D = \pm 50 ppm			
Control voltage range V_C :	0.3 V to +3.0 V	0.25 V to +2.25 V	0.18 V to +1.62 V			
Absolute Pulling Range (APR):	$\geq \pm$ 50 ppm					
Modulation bandwidth	\geq 5 kHz (3dB cut-off freq.)					
Control voltage input impedance:	\geq 5 MOhm					
Transfer function / linearity:	Positive / 10 %					
Output voltage: level: high low load:	LVPECL V_S -1.165V V_S -2.0V 50 Ohm	LVDS +1.6V, +0.9V 100 Ohm between Out and OutN	CML V_S -0.085V V_S -0.6V 50 Ohm to V_S	HCSL +0.66 V 0 V 50 Ohm to ground	LVCMOS 0.9 x V_S , 0.1 x V_S 15 pF	
duty cycle: rise time, fall time 20 % / 80 % Start up time:	45/55% \leq 0.35 ns 8 ms	45/55% \leq 0.35 ns 8 ms	45/55% \leq 0.35 ns 8 ms	45/55% \leq 0.40 ns 8 ms	40/60% \leq 1.2 nsec 8 ms	
Stand by Current	at 3.3V at 2.5V at 1.8V	120 mA 85 mA	90 mA 80 mA 75 mA	90 mA 80 mA 70 mA	115 mA 100 mA 94 mA	90 mA 80 mA 70 mA
TriState function for output signal Enable Disable	70% V_S 30% V_S					
Typical Phase noise @ offset freq. 1 kHz: 10 kHz: 100kHz: 1 MHz: 10 MHz:	(Fn 873.515 MHz): \leq -87 dBc/Hz \leq -110 dBc/Hz \leq -127 dBc/Hz \leq -138 dBc/Hz \leq -153 dBc/Hz					
RMS Phase Jitter / 12 kHz to 20 MHz)	typ. 150 fs , max 300 fs					
Period Jitter	50 ps					
Storage temperature range:	-45 °C ... +90 °C					

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2. Environmental conditions

According to KVG Product Qualification Procedure AA-QM-202

3. Marking

KVG
Center frequency

4. Case

Dimensions in mm

[TOP VIEW]

[BOTTOM VIEW]

[SIDE VIEW]

PIN#	FUNCTION	
	LVPEQL/LVDS/GML/HCSL	CMOS
1	Vcon	Vcon
2	OE	OE
3	GND	GND
4	Output	Output
5	Comp.Output	NC
6	VDD	VDD
7	NC	NC
8	NC	NC

Solder pattern

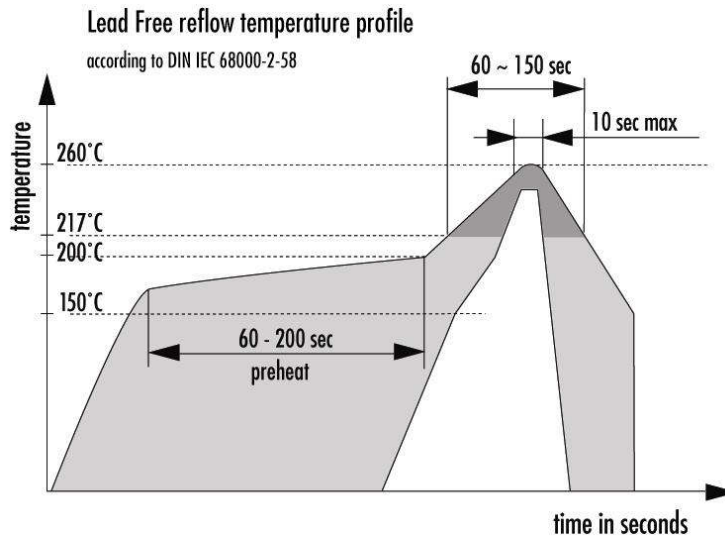
4				KVG Quartz Crystal Technology GmbH P.O. Box 61 D-74924 Neckarbischofsheim Tel. +49 (0) 7263 / 648-0 Fax. +49 (0) 7263 / 6196
3				
2				
1		28.05.2019	Balzer	
ED	Description	Date	Name	



V-53HF-series



5. Reflow soldering profile



6. Ordering Information

Type & Package code	Supply voltage	Temperature range LOW/HIGH	Freq. stability vs temp. range	Output signal	RoHS compl	Nominal frequency
V-53HF: BF157-5.5B	A: 3.3V D: 2.5V E: 1.8V	1060: -10 / +60 °C 2070: -20 / +70 °C 4085: -40 / +85 °C	A: ± 20 ppm B: ± 25 ppm C: ± 30 ppm D: ± 50 ppm	P: LVPECL; L LVDS CL CML H HCSL LV LVCMOS	-LF	- XX.YYY MHz

Example: V-53HFA4085BP-LF-850.000MHz

Not all combinations of options are available. Other specifications may be available on request

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