ROHS-Compliant Product

T-53S3 Series

SMD TCXO according to Telcordia GR-1244 and GR-253-Core Stratum 3, ANSI Clock T1.101, ITU-T G.812 Type IV and G.813 Option 1

1. Specification

Frequency range:	10.0 … 52.0 MHz
Standard frequencies:	10.0, 12.8, 19.2, 20.0, 26.0, 40.0 MHz
Supply voltage V_S (nominal values ±5%): +3.3 V : +5.0 V :	 **A** **B**
Current consumption for: **H**CMOS : **C**lipped Sine wave:	 ≤ 8.0 mA ≤ 3.5 mA
Temperature range options: 0 °C to +50 °C : -10 °C to +60 °C : 0 °C to +70 °C : -20 °C to +70 °C : -30 °C to +85 °C : -40 °C to +85 °C :	 **0050** **1060** **0070** **2070** **3085** **4085**
Frequency stability options: ± 0.05 ppm (available for temp.range 1060 and below): ± 0.10 ppm (available for temp.range 2070 and below): ± 0.14 ppm (available for temp.range 2070 and below): ± 0.20 ppm: ± 0.28 ppm: ± 0.37 ppm: ± 0.5 ppm: ± 1.0 ppm:	 **G** **H** **L** **I** **M** **T** **J** **K**
Initial frequency tolerance (T_A = +25 °C; V_C = +1.5 V): 24 h after reflow (T_{peak} = +260 °C for 10 sec max):	≤ ± 1.00 ppm ≤ ± 1.50 ppm
Freq.stability vs. supply voltage changes V_S ± 5 %:	≤ ± 0.3 ppm
Freq. stability vs. load changes ± 10 %:	≤ ± 0.2 ppm
24 hours aging @ 25 °C after 10 days continuous operation:	≤ ± 0.02 ppm

ED	Description	Date	Name
6	Frequ. stab. vs. supply voltage	26.04.2019	Schweickert
5	Operable Temperature Range	06.02.2019	Rudolph
4	Frequ. stab. vs. supply voltage	05.12.2018	Rudolph
3	Tuning range option +/-8 ppm amended	26.09.2017	Rudolph

KVG Quartz Crystal Technology GmbH
P.O. Box 61
D-74924 Neckarbischofsheim
Tel. +49 (0) 7263 / 648-0
Fax. +49 (0) 7263 / 6196

Subject to technical modification

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1. Specification continued

Overall stability: (incl. nominal frequency tolerance, frequency stab. vs. temp., vs. supply voltage, vs. load changes and 20 years aging)	≤ ± 4.6 ppm	
Holdover stability: (incl. frequency stab. vs. temp and 24 hours aging, for stability option **H** and **L**)	≤ ± 0.30 ppm	
Frequency control options : Fixed frequency oscillator: Controll range ≥ ± 5 ppm (standard): Controll range ≥ ± 8 ppm (on request):	 **X** **F** **E**	
Control voltage range V_C:	+0.5 V to +2.5 V	
Control voltage input impedance:	≥ 100 kOhm	
Transfer function / Linearity:	positive / 10 %	
Phase Noise	typ. for 10.0 MHz	typ. for 20.0 MHz
100 Hz: 1 kHz: 10 kHz:	-125 dBc/Hz -145 dBc/Hz -153 dBc/Hz	-117 dBc/Hz -137 dBc/Hz -150 dBc/Hz
Output signal type options:		
Output signal option **H**: level: load:	(LV)**H**CMOS V_{OL} ≤ 10% V_S; V_{OH} ≥ 90% V_S 1 kOhm // 15 pF	
Output signal option **C**: level: load:	**C**lipped Sine wave ≥ 0.8 V_{PP} 10 kOhm // 10 pF	

2. Marking

ww KVG yy
Frequency

3. Environmental Conditions

Operable Temperature Range: -40 °C to +85 °C

According to KVG Product Qualification Procedure **AA-QM-202**

Moisture Sensitivity Level (IPC/JEDEC *J-STD-020E)***:** MSL 1

ESD Protection Level (ANSI/ESD STM5.2):HBM: Class 2; MM: Class M2

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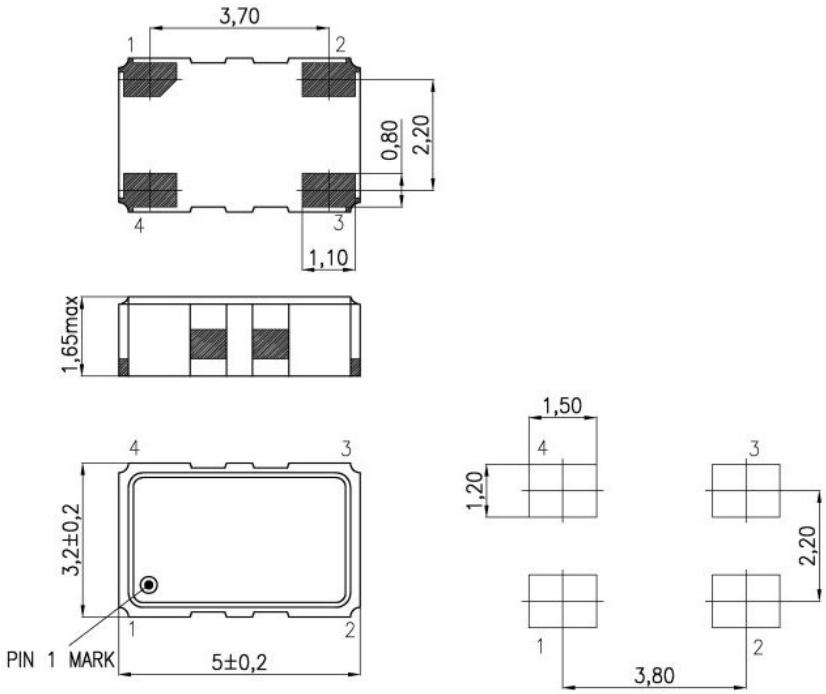
4. Case

Case Style: BF193-1.65



Pin configuration

1. N.C. or Control Voltage Vc
2. Ground, Case
3. RF Output
4. Supply Voltage V_S

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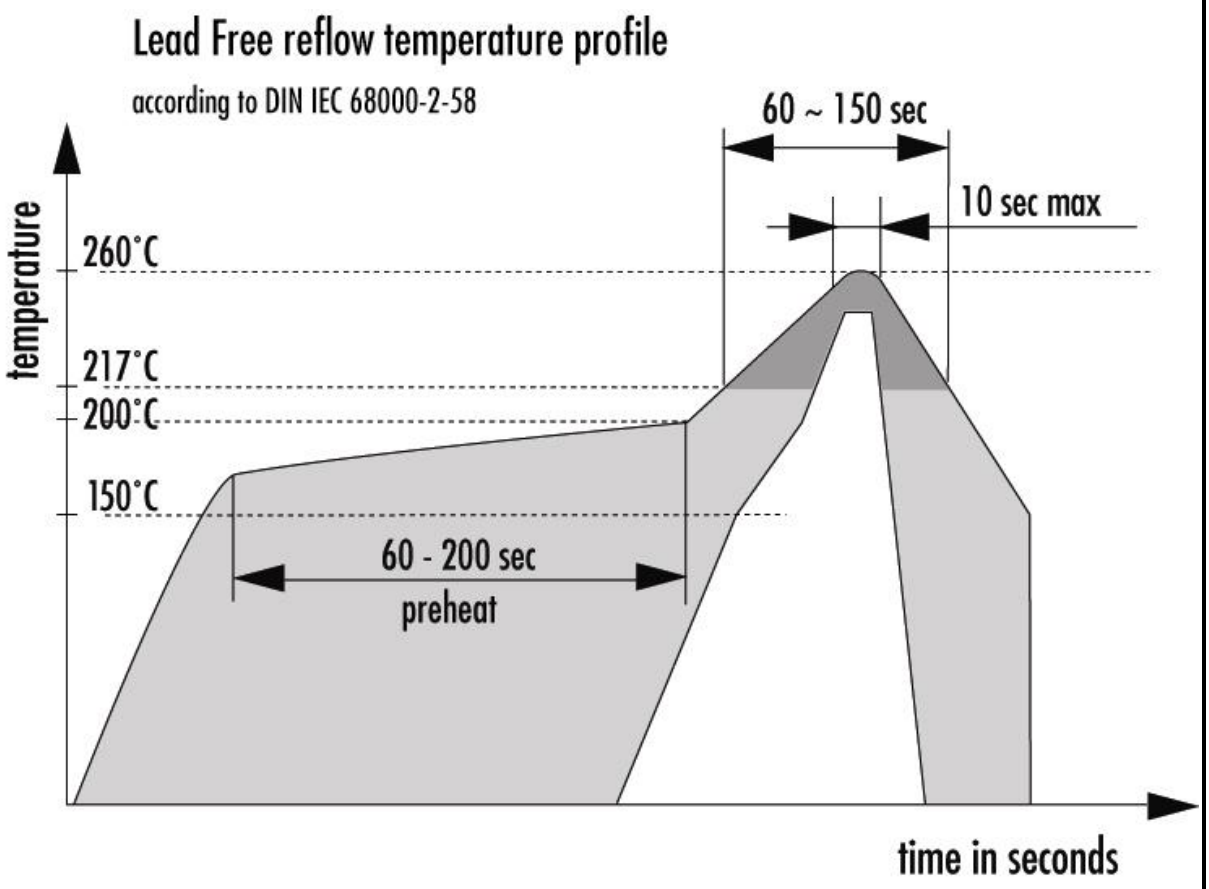
5. Reflow Soldering Profile



6. Ordering Information

Type & Package code	Supply voltage	Temperature range LOW/HIGH	Freq. stability	Freq. Tuning Range	Output signal	RoHS compl.	Nominal frequency
T-53S3: BF193-xx	**B:** 5.0 V **A:** 3.3 V	**2070**: -20 / +70 °C **4085**: -40 / +85 °C	**H….K**	**X, F, E**	**C, H**	**-LF**	– XX.YYY MHz

Example: T-53S3A2070JXH-LF - 26.000 MHz

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