



ROHS-Compliant Product

T-74000 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

Test conditions: $V_S = 3.3\text{ V}$ (5.0 V); $V_C = 1.5\text{ V}$; $T_A = +25\text{ °C}$ if not stated otherwise.

Type:	T-74XYZ
Frequency range:	5.0 ... 52.0 MHz
Supply Voltage V_S (nominal values $\pm 5\%$): +3.3 V : +5.0 V :	X 3 5
Initial frequency tolerance ($T_A = +25\text{ °C}$; $V_C = +1.5\text{ V}$): 24 h after reflow ($T_{\text{peak}} = +260\text{ °C}$ for 10 sec max):	$\leq \pm 1.0\text{ ppm}$ $\leq \pm 2.0\text{ ppm}$
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 :	Y 1 2 3 4 5 6
Frequency stability options: $\pm 0.05\text{ ppm}$ (available for temp.range 1 to 2): $\pm 0.10\text{ ppm}$ (available for temp.range 1 to 4): $\pm 0.14\text{ ppm}$ (available for temp.range 1 to 4): $\pm 0.20\text{ ppm}$: $\pm 0.28\text{ ppm}$: $\pm 0.50\text{ ppm}$: $\pm 1.00\text{ ppm}$:	Z 1 2 3 4 5 6 7
Frequ. stability vs. supply voltage changes $V_S \pm 5\%$: Clipped Sinewave output: LVHCMOS output:	$\leq \pm 0.02\text{ ppm}$ $\leq \pm 0.02\text{ ppm}$
Frequ. stability vs. load changes $\pm 10\%$:	$\leq \pm 0.05\text{ ppm}$
24 hours aging at +25 °C after 10 days continuous operation:	$\leq \pm 0.02\text{ ppm}$
Overall stability incl. nominal freq. tol., frequency stab. vs. temp., vs. supply voltage, vs. load changes and 15 years aging :	$\leq \pm 4.6\text{ ppm}$
Holdover Stability incl. frequency stab. vs. temp, vs. supply voltage changes and 24-hours aging (available for stability option 1 to 5) :	$\leq \pm 0.32\text{ ppm}$

4				KVG Quartz Crystal Technology GmbH
3	Freq. ext and 1.00ppm variant added	04.09.2013	Dannenmaier	P.O. Box 61
2	Tape and reel added	06.03.2013	Dannenmaier	D-74924 Neckarbischofsheim
1		06.12.2012	Rudolph	Tel. +49 (0) 7263 / 648-0
ED	Description	Date	Name	Fax. +49 (0) 7263 / 6196



ROHS-Compliant Product

T-74000 Series



1. Specification continued

Frequency Control Options : Fixed frequency oscillator: ± 5 ppm:	Suffix X F	
Control voltage range V_C :	+0.5 V to +2.5 V	
Transfer function / Linearity:	positive / 10 %	
Output signal Option H : Output level: Nominal output load:	(LV)HCMOS $V_{OL} \leq 10\% V_S$; $V_{OH} \geq 90\% V_S$ 1 kOhm // 15 pF	
Current consumption for HCMOS :	≤ 6 mA	
Output signal Options S : Output level: Nominal output load:	Clipped Sine wave $\geq 0.8 V_{PP}$ 10 kOhm // 10 pF	
Current consumption for Clipped Sine wave :	≤ 3.5 mA	
Phase Noise 100 Hz: 1 kHz: 10 kHz: 100 kHz:	(typ. for 12.8 MHz) ≤ -130 dBc/Hz ≤ -145 dBc/Hz ≤ -154 dBc/Hz ≤ -156 dBc/Hz	(typ. for 26.0 MHz) ≤ -120 dBc/Hz ≤ -138 dBc/Hz ≤ -153 dBc/Hz ≤ -156 dBc/Hz
Storage Temperature Range:	-55 °C to +105 °C	

2. Marking

ww KVG yy
Frequency

3. Environmental conditions

According to KVG Product Qualification Procedure AA-QM-202

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	Freq. ext and 1.00ppm variant added	04.09.2013	Dannenmaier	
2	Tape and reel added	06.03.2013	Dannenmaier	
1		06.12.2012	Rudolph	
ED	Description	Date	Name	



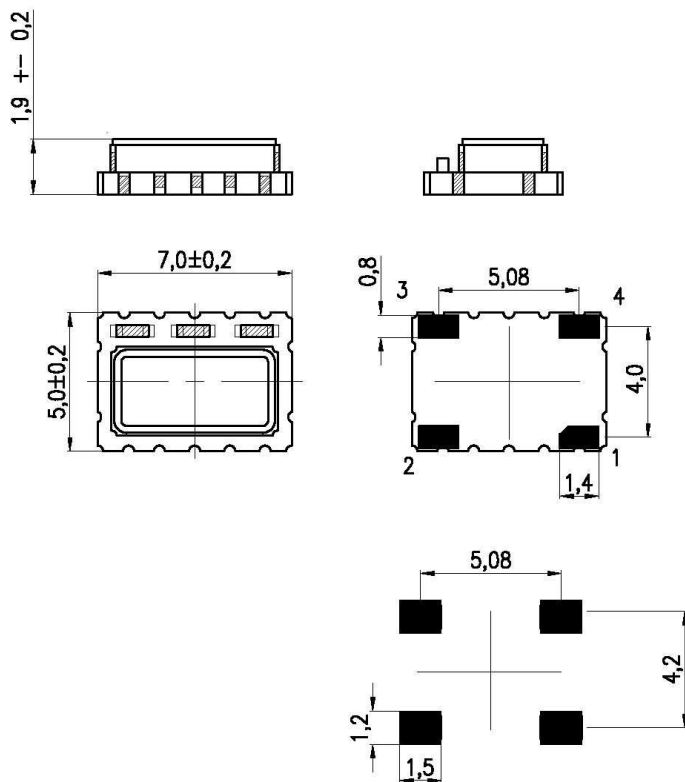
ROHS-Compliant Product

T-74000 Series



4. Case

Case Style: BF189-2.0F



Recommended Soldering Pattern

Pin configuration

1. Control voltage V_C (VC-TCXO) or grounded (TCXO)
2. GND
3. RF Output
4. Supply Voltage V_S

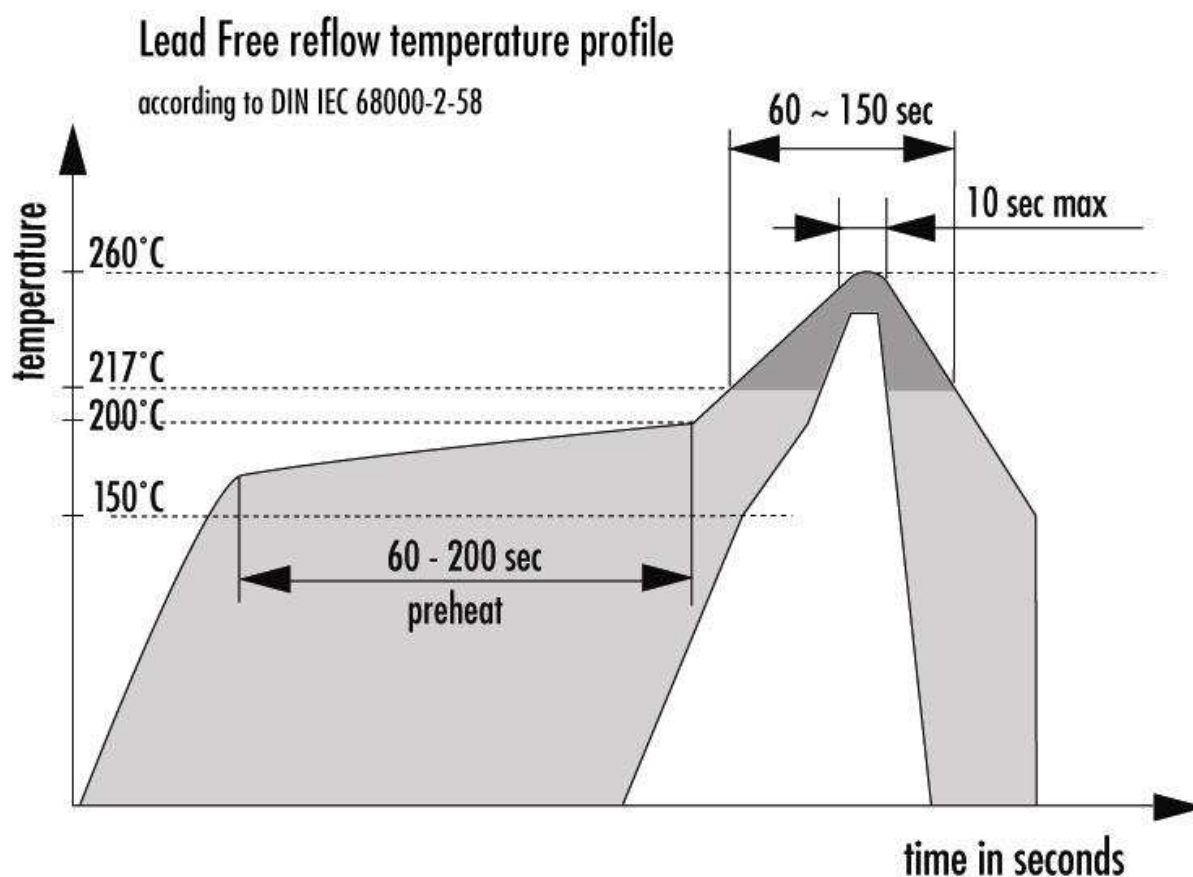
Moisture Sensitivity Level: 1

Termination finish: Ni-Au
(0.5 to 1.5 μm Gold over Nickel)

Base Material: copper alloy

4				KVG Quartz Crystal Technology GmbH
3	Freq. ext and 1.00ppm variant added	04.09.2013	Dannenmaier	P.O. Box 61
2	Tape and reel added	06.03.2013	Dannenmaier	D-74924 Neckarbischofsheim
1		06.12.2012	Rudolph	Tel. +49 (0) 7263 / 648-0
ED	Description	Date	Name	Fax. +49 (0) 7263 / 6196

5. Reflow Soldering Profile



6. Ordering Information

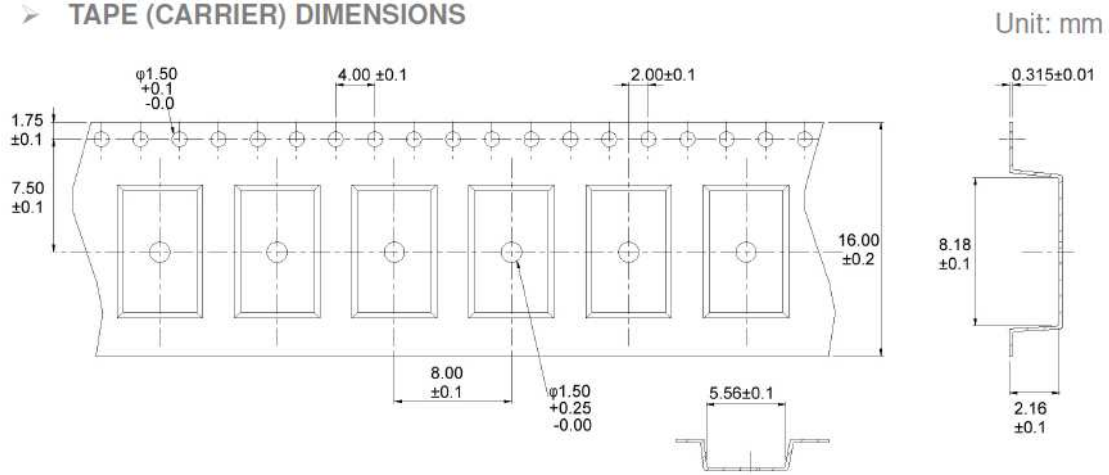
Package Code	Supply Voltage	Temp. Range	Frequ. Stability	Frequ. Control	Output Signal	RoHS compl.	Nominal Frequency
7.0 x 5.0 mm	3.3 V	-40/+85 °C	± 0.28 ppm	± 5 ppm	Sine		16.000
T-74	3	6	5	F	S	-LF	- XX.YYY MHz

Example: T-74365FS-LF-26.000 MHz

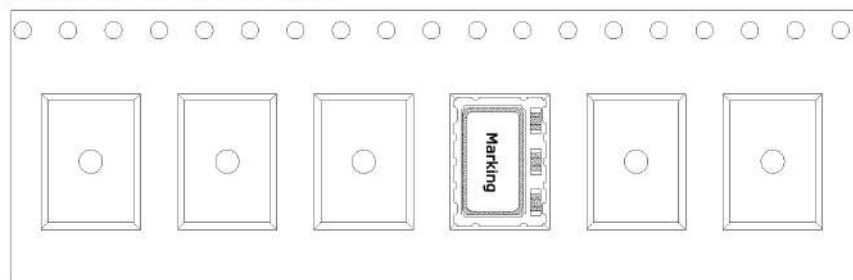
4				KVG Quartz Crystal Technology GmbH
3	Freq. ext and 1.00ppm variant added	04.09.2013	Dannenmaier	P.O. Box 61
2	Tape and reel added	06.03.2013	Dannenmaier	D-74924 Neckarbischofsheim
1		06.12.2012	Rudolph	Tel. +49 (0) 7263 / 648-0
ED	Description	Date	Name	Fax. +49 (0) 7263 / 6196

7. Tape and reel

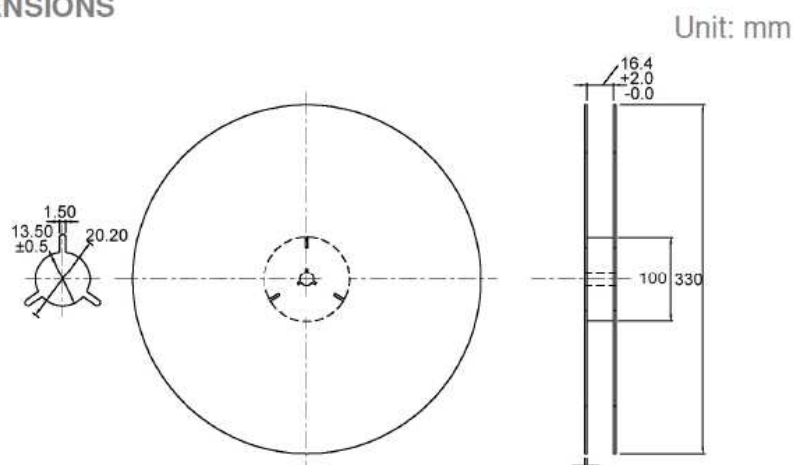
➤ TAPE (CARRIER) DIMENSIONS



➤ THE DIRECTION OF PACKING



➤ REEL DIMENSIONS



max. pcs per reel: 3000

4				KVG Quartz Crystal Technology GmbH
3	Freq. ext and 1.00ppm variant added	04.09.2013	Dannenmaier	P.O. Box 61
2	Tape and reel added	06.03.2013	Dannenmaier	D-74924 Neckarbischofsheim
1		06.12.2012	Rudolph	Tel. +49 (0) 7263 / 648-0
ED	Description	Date	Name	Fax. +49 (0) 7263 / 6196