

RoHS Compliant

PROPOSED SPECIFICATION

Issued No. : _____

DESCRIPTION : SMD 9x14mm VCTCXO
NOMINAL FREQ. : 100.000000 MHz
TAITIEN P/N : _____
TAITIEN MODEL : TKCABLJTDD-100.000000MHz
REVISION : 1
DATE : 10/09/2018

QA	Checked	Prepared
		

CUSTOMER : _____
CUSTOMER P/N : _____

Customer Signature
Approved:
Date:

REVISION HISTORY

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■ ELECTRICAL SPECIFICATIONS

➤ FREQUENCY CHARACTERISTICS

	Parameter	Min.	Typ.	Max.	Units	Test Condition
1-1	Nominal Frequency	100.000000			MHz	
1-2	Nominal Frequency Tolerance	-1.0		+1.0	ppm	Frequency at 25 °C, before reflow.
1-3	Frequency stability over temperature	-1.0		+1.0	ppm	Referenced to the frequency at 25°C.
1-4	Temperature range	-40		+85	°C	The operating temperature range over which the frequency stability is measured
1-5	Supply voltage stability	-0.1		+0.1	ppm	Supply voltage varied $\pm 5\%$ at 25 °C
1-6	Load sensitivity	-0.1		+0.1	ppm	$\pm 10\%$ load change
1-7	Frequency vs Temp slope	-0.1		+0.1	ppm/°C	
1-8	G-Sensitivity		1	1.5	ppb/G	each axis
1-9	Aging	-0.8		+0.8	ppm	first year at 25 °C
		-5.0		+5.0	ppm	10 years at 25 °C

➤ POWER SUPPLY

	Parameter	Min.	Typ.	Max.	Units	Test Condition
2-1	Supply voltage	4.75	5	5.25	V	
2-2	Current			40	mA	At maximum supply voltage

➤ CONTROL VOLTAGE

	Parameter	Min.	Typ.	Max.	Units	Test Condition
3-1	Control voltage range	0.5	2.5	4.5	V	
3-2	Pulling range	± 5			ppm	Referenced to VCON at 2.5V
3-3	Control voltage impedance	100			Kohm	
3-4	Modulation bandwidth (3dB)	10			Hz	
3-5	Transfer function / Linearity			10	%	positive

➤ OSCILLATOR OUTPUT

	Parameter	Min.	Typ.	Max.	Units	Test Condition
4-1	Output waveform	CMOS				
4-2	Output voltage level high	4.5			V	
4-3	Output voltage level low			0.5	V	
4-4	Output load capacitance	1KΩ//15pF				Operating range
4-5	Duty cycle	40	50	60	%	Measured at 50% VDD trigger level
4-6	Rise and fall times			3.0	ns	CMOS logic output at 10% to 90%
4-7	Start time			2.0	ms	

➤ PHASE NOISE

	Parameter	Min.	Typ.	Max.	Units	Test Condition
5-1	10Hz offset		-90	-85	dBc/Hz	
5-2	100Hz offset		-120	-116	dBc/Hz	
5-3	1KHz offset		-143	-141	dBc/Hz	
5-4	10KHz offset		-151	-149	dBc/Hz	
5-5	100KHz offset		-159	-157	dBc/Hz	
5-6	1MHz offset		-160	-158	dBc/Hz	
5-7	10MHZ offset		-162	-161	dBc/Hz	

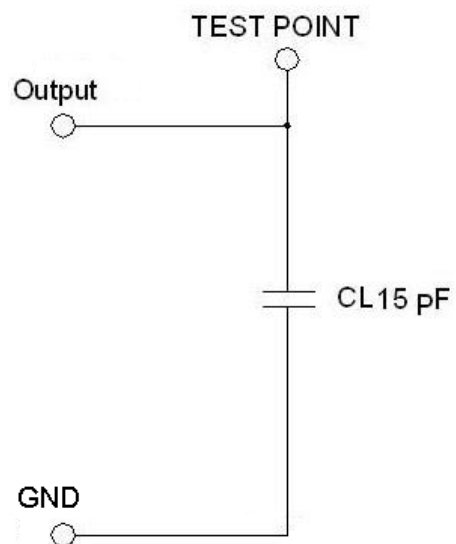
➤ CUSTOMER SPECIAL REQUIREMENT

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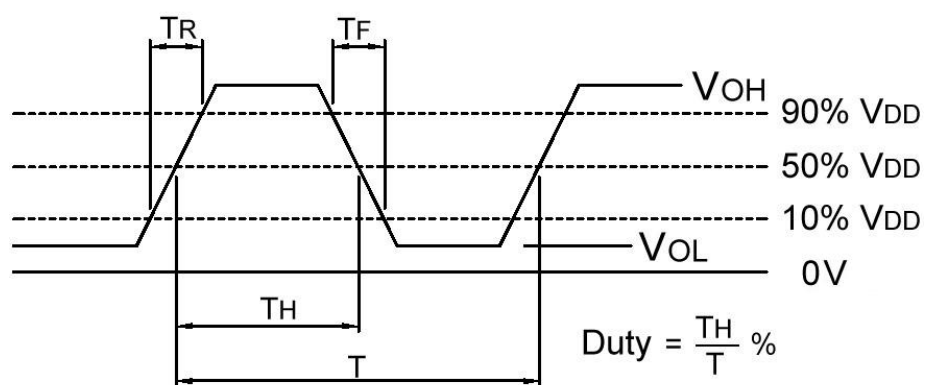
➤ ENVIRONMENTAL

	Parameter	Reference Std.	Test Condition
5-1	Vibration Test	MIL-STD-883 2007 Condition A JESD22-B103 Condition 1	10~2000Hz, 1.52mm, 20G, each axis for 4 hrs
5-2	Thermal Shock	MIL-STD-883 1010 Condition B JESD22-A104 Condition B	-55 °C , 125 °C ; soak time is 10 mins, with total 200 cycles
5-3	Mechanical Shock	MIL-STD-883 2002 Condition B JESD22-B104 Condition B	1500G, half-sine, 0.5ms, each axis for 3 times.

■ TEST CIRCUIT

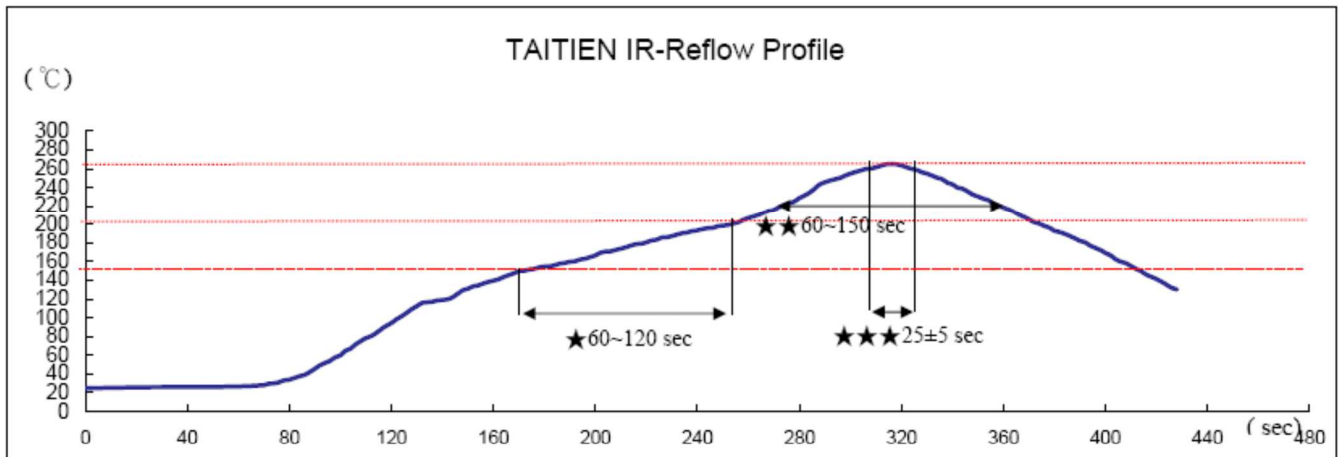


■ OUTPUT WAVEFORM



RECOMMENDED IR REFLOW PROFILE

➤ IR REFLOW PROFILE OF CERAMIC SMD PRODUCTS FOR Pb FREE PROCESS



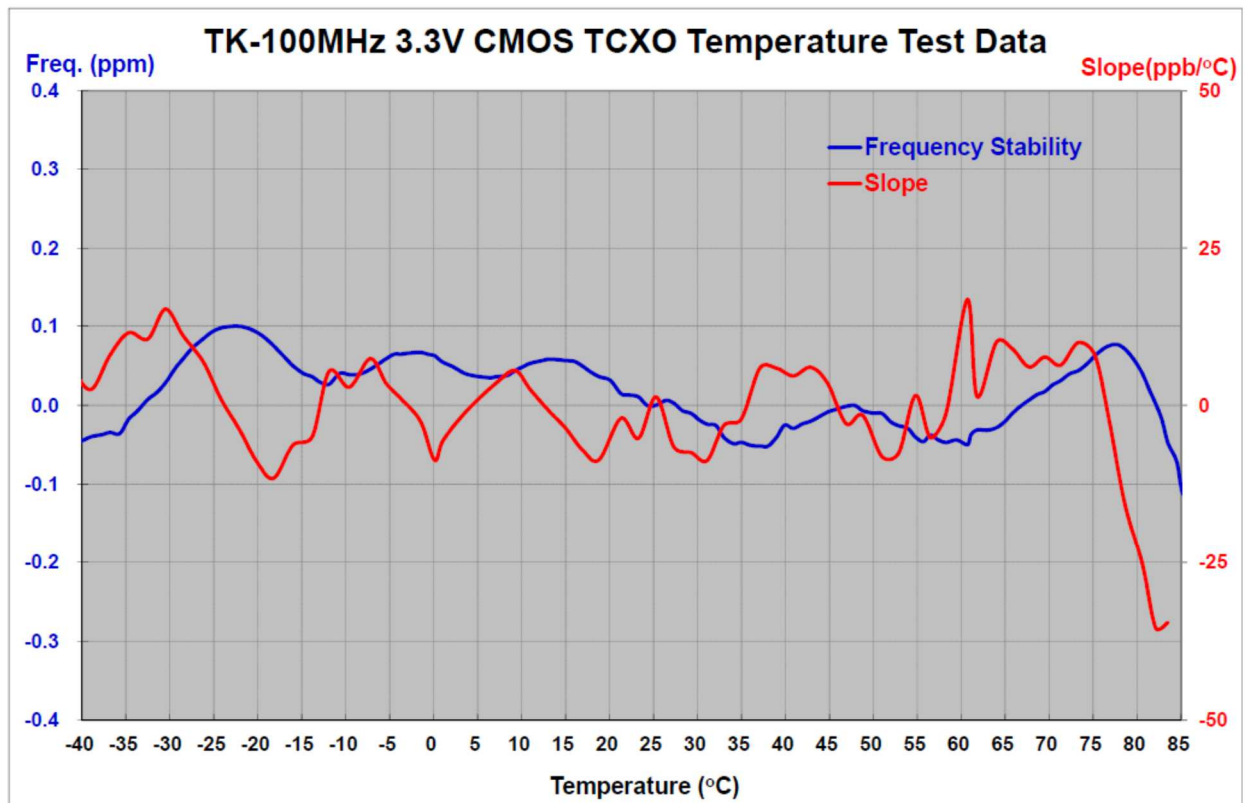
Reference Standard: JEDEC-STD 020

Test conditions: ★ Pre-heating : 150°C to 200°C, 60~120secs.

★★ Heating : 217°C, 60~150sec.

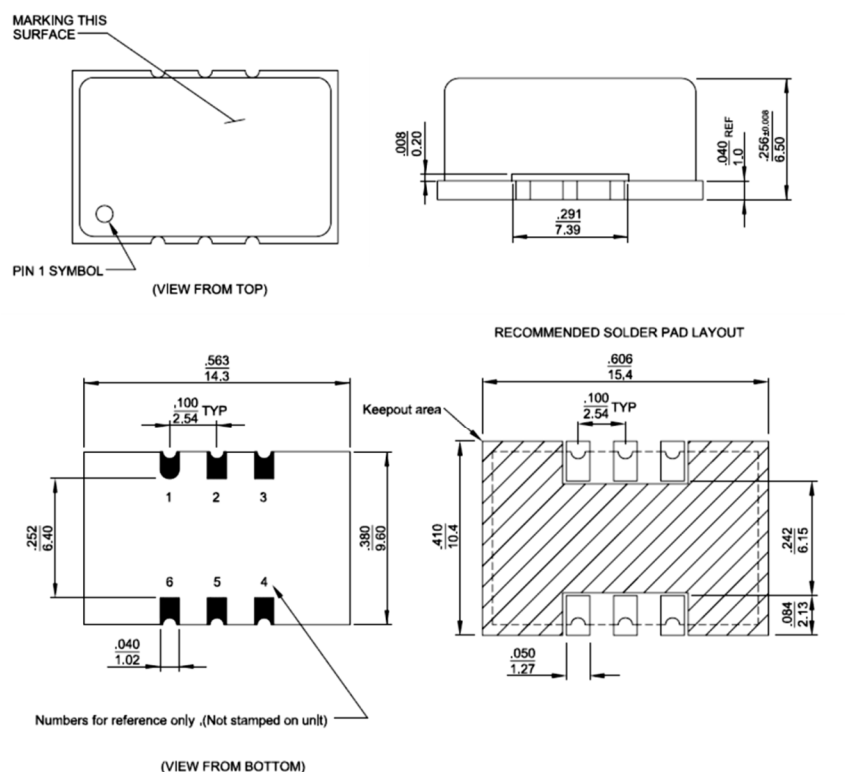
★★★ Peak temperature : 260±5°C, 25±5sec.

TEMPERATURE TEST DATA



PRODUCT DIMENSIONS

DIMENSIONS

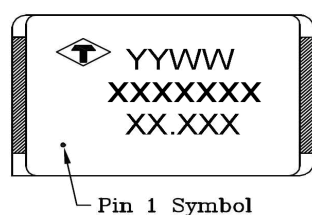


PIN FUNCTIONS

Pin	Function
#1	VCON
#2	NC/Tri-Stage
#3	GND
#4	Output
#5	NC
#6	VDD

PRODUCT IDENTIFICATION (MARKING)

Procedure: Laser



Date Code YYWW Year of Manufacture (17=2017, 18=2018)
Week No. (2 digits)

Part No Information

Frequency Code
XX.XXX MHz
6 digits (Including decimal point)