

# Shoulder



## **CRYSTAL** Data Sheet

PRODUCT 产 品: CRYSTAL

MODEL NO 型 号: SOC7

DATE 日 期: 2008-01-25



**Indian Technological Products Private Limited**

22-23, Type-B, Hartron Complex, Electronic City, Sector-18, Udyog Vihar, Gurgaon -122 016, Haryana (India)

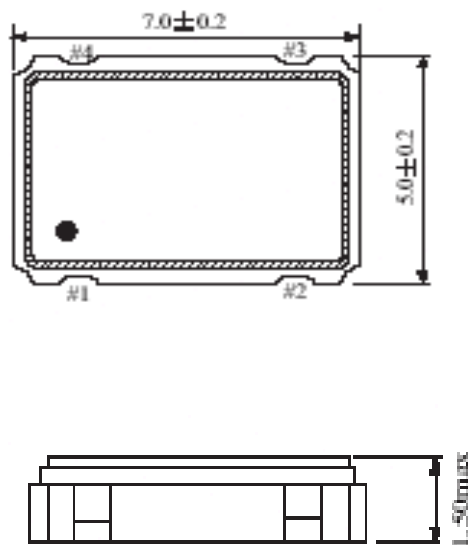
Telephone: +91-124-4013646, 4013647 • Fax: +91-124-2398277

Email: sales@itpindia.in • [www.itpindia.com](http://www.itpindia.com) • CIN: U74899DL1986PTC023265

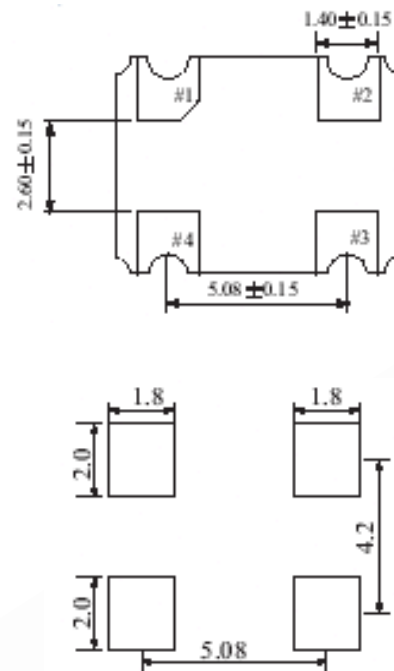
## 1. Electrical characteristics

Parameter		Condition
Frequency range :		1.000-100.000MHZ
Frequency stability vs.	Make tolerance: (25°C±3°C)	±100ppm max
	Operating temperature:	±100ppm max
	Power change: (±10%)	≤±5ppm
	Load change: (±10%)	≤±5ppm
Temperature range	Operation:	-10°C~+60°C
	Storage:	-30°C~+85°C
Power Supply	Voltage:	+3.3V <sub>DC</sub> ±10%
	Current:	≤30mA
Output	Symmetry: (at 50% V <sub>DD</sub> )	40%~60% (1/2 V <sub>DD</sub> )
	Load:	CL=15Pf / 1-10LS TTL
	Rise time: (10% V <sub>DD</sub> ~90% V <sub>DD</sub> )	10ns Max
	Fall time: (90% V <sub>DD</sub> ~10% V <sub>DD</sub> )	10ns Max
	V <sub>OH</sub> :	≥90% V <sub>DD</sub>
	V <sub>OL</sub> :	≤10% V <sub>DD</sub>
Aging:		≤±3ppm/first year
Start-up time :		10ms(Max)

## 2.Dimension (mm)



Bottom view

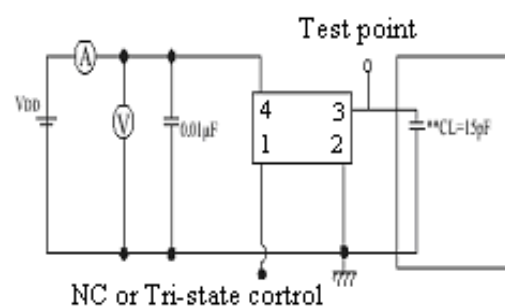
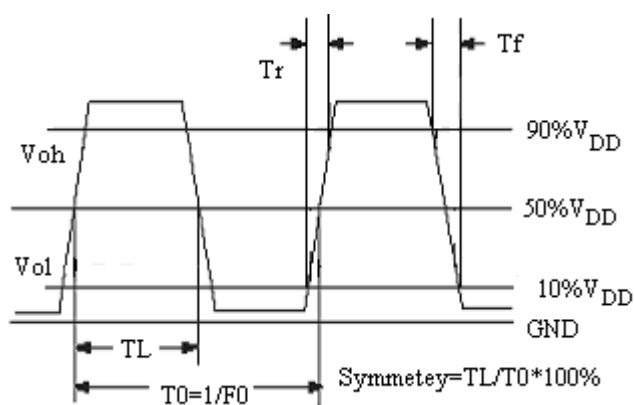


Note: A  $0.01\mu\text{F}$  bypass capacitor should be placed between  $V_{\text{DD}}$  and GND to minimize power supply line noise.

### Pin connection

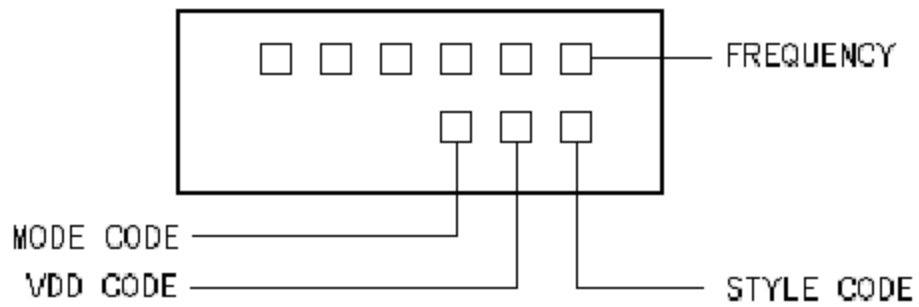
Pin	Connection
1	NC or Tri-state
2	Case GND
3	Output
4	$V_{\text{DD}}$

## Output waveform & test circuit



\*\* Include stray and probe capacitance

### 3. Marking



MODE CODE:

MODE	AT fund	AT 3rd	DIVIDED	TIMES
CODE	A	R	D	T

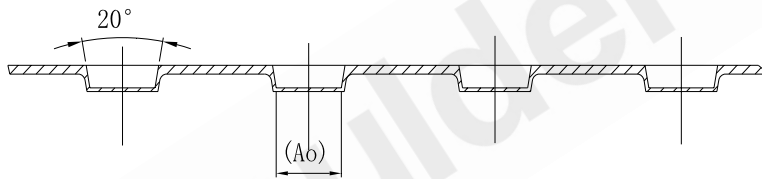
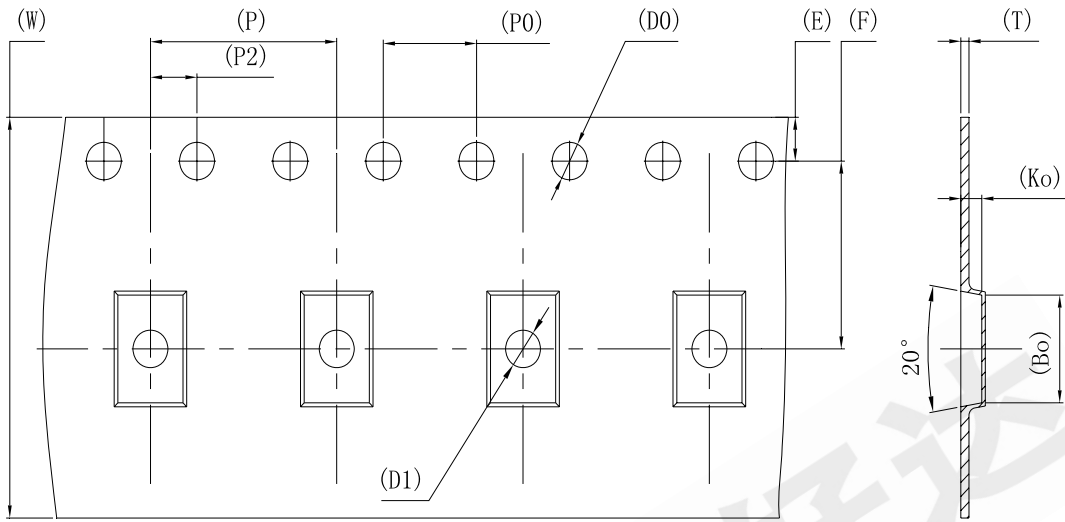
VDD CODE:

VDD	3.3V	5.0V	2.5V	其它
CODE	3	5	2	Z

STYLE CODE:

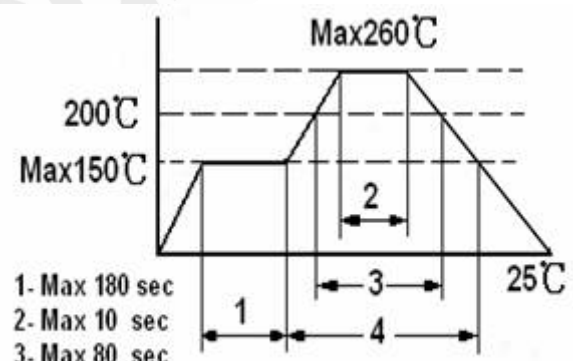
STYLE	OSCILLATOR	VCXO	TCXO	VC-TCXO
CODE	O	V	T	X

# 4.Packing Specification



W	16.00±0.05	P	8.00±0.10	A0	5.40±0.10	B0	7.40±0.10
S		P0	4.00±0.10	A1		B1	
E	1.75±0.10	P2	2.00±0.10			B2	
F	5.50±0.10	D0	$\phi 1.50 \pm_{0}^{0.10}$	K0	1.10±0.10		
T	0.35±0.05	D1	$\phi 1.50$ MIN	K1			

## 5. Reliability Specification

	Item	Condition	Standard
1.	Drop characteristics	Free drop from 50cm height on a hard wooden board for 3 times. (Board is thickness more than 30 mm.)	Frequency change: $\leq \pm 5\text{ppm}$
2..	Shake characteristics	Shake frequency 10~55Hz, cyc1~2 minutes, swing 1.5mm, direction x/y/z, all 30 minutes, test after 1 hours.	Frequency change: $\leq \pm 5\text{ppm}$
3.	Weld characteristics	235 $\pm$ 5 $^{\circ}$ C, 3 seconds	95% exhibit tin ok
4.	Humidity characteristics	+40 $\pm$ 2 $^{\circ}$ C & 90%~95% R.H. 250 hours	Frequency change: $\leq \pm 5\text{ppm}$
5.	Low temperature characteristics	-30 $\pm$ 2 $^{\circ}$ C, 250 hours, put in room temperature, test after 1 hours.	Frequency change: $\leq \pm 5\text{ppm}$
6.	High temperature characteristics	+85 $\pm$ 2 $^{\circ}$ C, 250 hours, put in room temperature, test after 1 hours.	Frequency change: $\leq \pm 5\text{ppm}$
7.	Temperature cycling	-30 $\pm$ 3 $^{\circ}$ C/30 $\pm$ 3 min~+85 $\pm$ 2 $^{\circ}$ C/30 $\pm$ 3min, 5 cycles	Frequency change: $\leq \pm 5\text{ppm}$
8.	Refluence examination	 <p>1- Max 180 sec 2- Max 10 sec 3- Max 80 sec 4- Max 90 sec</p>	Frequency change: $\leq \pm 5\text{ppm}$

