Approved by: 黄灏东
Checked by: 杨霞
Issued by: 玉静霞

SPECIFICATION

SJK P/N: S70600000133J

深圳市晶科鑫实业有限公司
SHENZHEN CRYSTAL TECHNOLOGY INDUSTRIAL CO., LTD.

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Tel: (86) 755 88352809 88352810 Fax: (86) 755 88353718 88352499
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High Frequency, Low Power Oscillator
7.0*5.0 mm

Applications

- Ideal for GPON/GPON, network switches, routers. servers, embedded systems
- Ideal for Ethernet, PCI-E, DDR, etc.

ELECTRICAL SPECIFICATIONS

No	Parameters	Symbol	Condition	Electrical Specifications			
				MIN	TYP	MAX	UNITS
1	Nominal Frequency	-		60.000000			MHz
2	Output		CMOS				
3	Operating Temperature	Topr		-20	~	70	°C
4	Storage Temperature	Tstg		-40	~	85	°C
5	Frequency Stability	-		±50			ppm
6	Supply Voltage	VDD		2.97	3.3	3.63	V
7	**Current Consumption**	Idd			6.2	7.5	mA
8	**OE Disable Supply Current**	I_OE	Vdd = 2.5V to 3.3V, OE = GND, Output in high-Z state			4	mA
9	**Standby Current**	I_std	ST = GND, Vdd = 2.8V to 3.3V, Output is weakly pulled down		2.6	4.3	μA
10	**Duty Cycle**	DC	All Vdds	45		55	%
11	**Rise/Fall Time**	Tr, Tf	Vdd = 3.3V, 20% - 80%		1	2	ns
12	**Input Voltage High**	VIH	Pin 1, OE or ST	70%			VDD
13	**Input Voltage Low**	VIL	Pin 1, OE or ST	-	-	30%	VDD
14	Output Voltage High	VoH	IOH = -4 mA (Vdd = 3.0V or 3.3V)	90%VDD	-	-	V
15	Output Voltage Low	VoL	IOL = 4 mA (Vdd = 3.0V or 3.3V)	-	-	10%VDD	V
16	Input Pull-up Impedence	Z_in	Pin 1, OE logic high or logic low, or ST logic high		87	100	KΩ
			Pin 1, ST logic low	2			MΩ
17	Startup Time	T_start	Measured from the time Vdd reaches its rated minimum value			5	mS
18	RMS Period Jitter	T_jitt	f = 75 MHz, Integration bandwidth = 12 kHz to 20 MHz		1.93	3	ps
19	Aging	-	1st.Year at 25℃	±3			ppm

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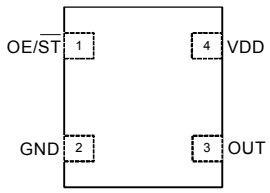
Pin Description

Pin	Symbol	Functionality	
1	OE/ $\overline{ST}$	Output Enable	H or Open[2]: specified frequency output L: output is high impedance. Only output driver is disabled.
		Standby	H or Open[2]: specified frequency output L: output is low (weak pull down). Device goes to sleep mode. Supply current reduces to I_std.
2	GND	Power	Electrical ground[3]
3	OUT	Output	Oscillator output
4	VDD	Power	Power supply voltage[3]

Top View



Notes:

2. A pull-up resistor of <10 kΩ between OE/ $\overline{ST}$ pin and Vdd is recommended in high noise environment.
3. A capacitor value of 0.1 µF between Vdd and GND is recommended.

Absolute Maximum

Attempted operation outside the absolute maximum ratings of the part may cause permanent damage to the part. Actual performance of the IC is only guaranteed within the operational specifications, not at absolute maximum ratings.

Parameter	Min.	Max.	Unit
Storage Temperature	-65	150	°C
VDD	-0.5	4	V
Electrostatic Discharge	–	2000	V
Soldering Temperature (follow standard Pb free soldering guidelines)	–	260	°C
Junction Temperature	–	150	°C

Thermal Consideration

Package	θJA, 4 Layer Board (°C/W)	θJA, 2 Layer Board (°C/W)	θJC, Bottom (°C/W)
7050	191	263	30

Environmental Compliance

Parameter	Condition/Test Method
Mechanical Shock	**MIL-STD-883F, Method 2002**
Mechanical Vibration	**MIL-STD-883F, Method 2007**
Temperature Cycle	**JESD22, Method A104**
Solderability	**MIL-STD-883F, Method 2003**
Moisture Sensitivity Level	**MSL1 @ 260°C**

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Test Circuit and Waveform

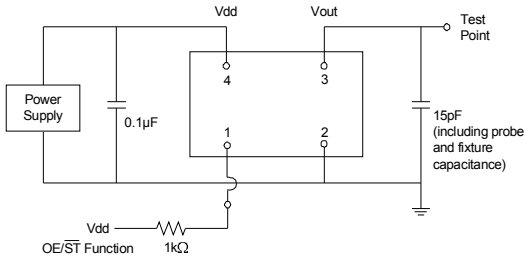

Figure 1. Test Circuit

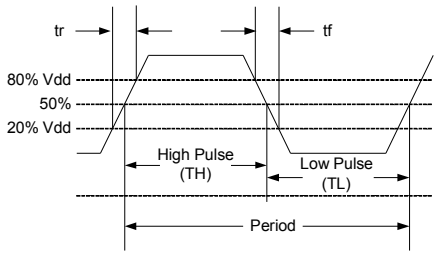

Figure 2. Waveform

Note:

1. Duty Cycle is computed as Duty Cycle = TH/Period.

Timing Diagrams

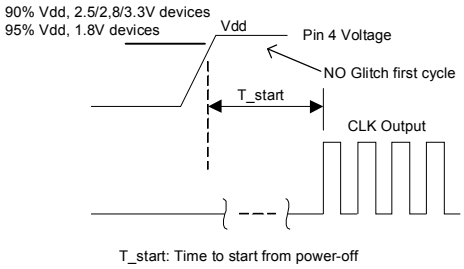

Figure 3. Startup Timing (OE/$\overline{ST}$ Mode)

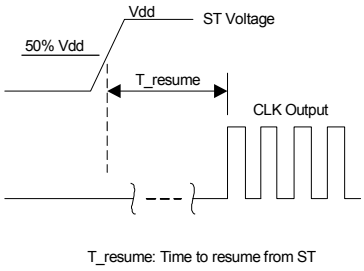

Figure 4. Standby Resume Timing ($\overline{ST}$ Mode Only)

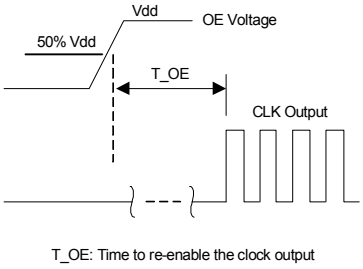

Figure 5. OE Enable Timing (OE Mode Only)

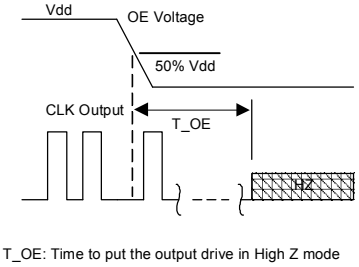

Figure 6. OE Disable Timing (OE Mode Only)

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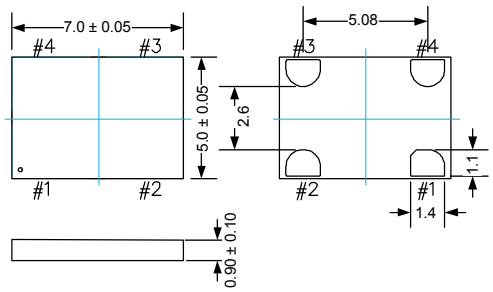
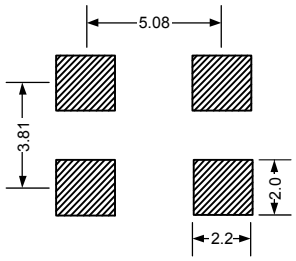
Dimensions and Patterns

Package Size – Dimensions (Unit: mm)	Recommended Land Pattern (Unit: mm)
7.0 x 5.0 x 0.90 mm 	

Notes:

A.capacltor of value 0.1uF between Vdd and GND is recommended

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