



# 4 Frequencies Switchable Crystal Oscillators [ 15 ~ 2,100 MHz ]



**HC\_JF**  
CMOS / Differential

**4 Frequencies**  
**Switchable**

**SMD**

**1.8 V**   **2.5 V**   **3.3 V**

Min.  
**15**  
MHz

Max.  
**2,100**  
MHz

### Part Number Format and Example

Example : 3HCTJF578 - E - 156 / 250 / 622 / 1024

3	HCTJF	578	-	E	-	156	/	250	/	622	/	1024
Supply Voltage "3" for 3.3V "25" for 2.5V "18" for 1.8V	HCTJF : <b>CMOS</b> HCPJF : <b>PECL</b> HCDJF : <b>LVDS</b> HCCJF : <b>HCSL</b> HCQJF : <b>CML</b>	Package Size "578" (7.0 * 5.0 mm)  8pad		Freq. Stability Code E : ±50 ppm over -40 to +85°C Other temperature stabilities are available.		Freq. 1 (MHz)	/	Freq. 2 (MHz)	/	Freq. 3 (MHz)	/	Freq. 4 (MHz)

### Outline Dimensions ( Unit : mm ) , Suggested pad Layout for SMDs , Test Circuits

HC\_JF5781

Top View

Suggested Land Pattern

Side View

**Pad Connection :**  
 Pad 1 : FS0 Control  
 Pad 2 : FS1 Control  
 Pad 3 : Ground  
 Pad 4 : CMOS : Output  
           Differential : Output  
 Pad 5 : CMOS : No Used For CMOS  
           Differential : Complementary Output  
 Pad 6 : Supply Voltage  
 Pad 7 : Do Not Connect  
 Pad 8 : Do Not Connect

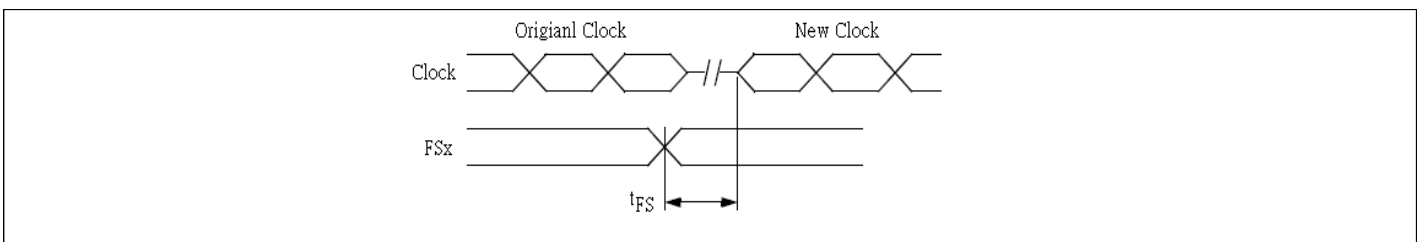
**Frequency selection configurations**

FS1	FS0	Freq. output
0	0	Freq. 1
0	1	Freq. 2
1	0	Freq. 3
1	1	Freq. 4

Table 1

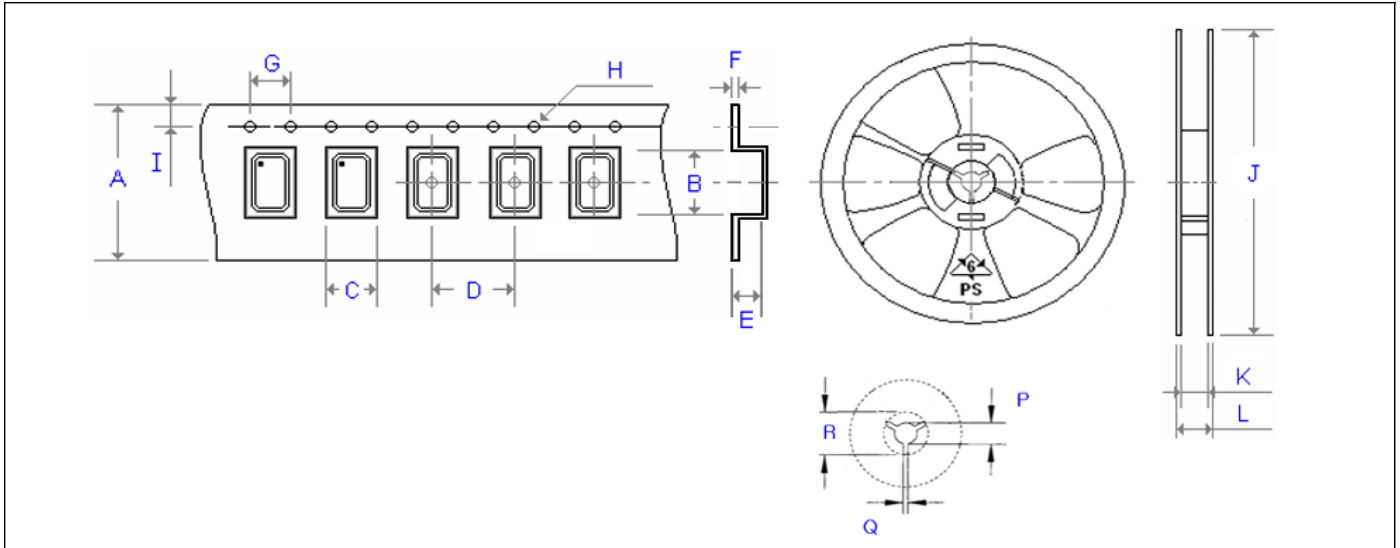
CMOS Test Circuits	CML Test Circuits	PECL Test Circuits
		<p style="text-align: center;">V<sub>DD</sub> = 3.3 V : R1 = R3 = 127 Ω ; R2 = R4 = 82.5 Ω              V<sub>DD</sub> = 2.5 V : R1 = R3 = 250 Ω ; R2 = R4 = 62.5 Ω</p>
LVDS Test Circuits for 2.5V and 3.3V	LVDS Test Circuits for 1.8V only (*)	HCSL Test Circuits

### Frequency Select Timing



# Emboss Taping and Reel Specifications

[ Crystal Oscillator Units ]



Carrier Type Dimensions ( unit : mm ) ±0.3mm

	A	B	C	D	E	F	G	H	I	pcs / reel
H21	8.00	2.30	1.90	4.00	0.90	0.25	4.00	∅ 1.50	1.75	3000
H_22	8.00	2.80	2.25	4.00	1.10	0.30	4.00	∅ 1.50	1.75	3000
H_32	8.00	3.40	2.70	4.00	1.40	0.25	4.00	∅ 1.50	1.75	3000
H_53	12.00	5.30	3.60	8.00	1.40	0.30	4.00	∅ 1.50	1.75	1000
H_57	16.00	7.30	5.30	8.00	1.90	0.32	4.00	∅ 1.50	1.75	1000
SWO	16.00	7.20	5.40	8.00	1.80	0.32	4.00	∅ 1.50	1.75	1000
H_226	8.00	2.80	2.25	4.00	1.10	0.30	4.00	∅ 1.50	1.75	3000
H_326	8.00	3.40	2.70	4.00	1.40	0.25	4.00	∅ 1.50	1.75	3000
H_536	12.00	5.30	3.60	8.00	1.40	0.30	4.00	∅ 1.50	1.75	1000
H_576	16.00	7.30	5.30	8.00	1.90	0.32	4.00	∅ 1.50	1.75	1000
H_328	8.00	3.40	2.70	4.00	1.40	0.25	4.00	∅ 1.50	1.75	3000
H_538	12.00	5.40	3.60	8.00	1.70	0.30	4.00	∅ 1.50	1.75	1000
H_578	16.00	7.30	5.30	8.00	1.90	0.32	4.00	∅ 1.50	1.75	1000
H_43	24.00	11.80	10.00	16.00	5.00	0.30	4.00	∅ 1.50	1.75	500

Reel Dimensions ( unit : mm ) ±2mm

	J	K	L	P	Q	R	pcs / reel
H21	180.00	9.00	12.00	13.00	2.50	20.20	3000
H_22	180.00	8.40	11.40	13.00	2.50	20.20	3000
H_32	180.00	9.00	12.00	13.00	2.50	20.20	3000
H_53	180.00	13.00	16.00	13.00	2.50	20.20	1000
H_57	180.00	17.20	19.30	13.00	2.50	20.20	1000
SWO	180.00	17.20	19.30	13.00	2.50	20.20	1000
H_226	180.00	8.40	11.40	13.00	2.50	20.20	3000
H_326	180.00	9.00	12.00	13.00	2.50	20.20	3000
H_536	180.00	13.00	16.00	13.00	2.50	20.20	1000
H_576	180.00	17.20	19.30	13.00	2.50	20.20	1000
H_328	180.00	8.00	12.00	13.00	2.50	20.20	3000
H_538	180.00	13.00	16.00	13.00	2.50	20.20	1000
H_578	180.00	17.20	19.30	13.00	2.50	20.20	1000
H_43	330.00	24.50	29.10	13.00	2.50	20.20	500