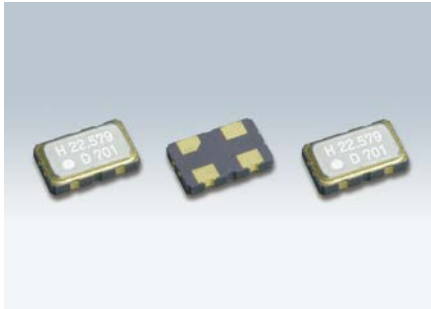


SMD Low Phase Noise Crystal Oscillators

DSO531SHH



Actual size

■ Features

- Supply Voltage: 1.8V/2.5V/2.8V/3.3V
- Ultra low phase noise: $f_{out} \pm 1\text{kHz}$ -160 dBc/Hz(Typ.)
 $f_{out} \pm 100\text{kHz}$ -172 dBc/Hz(Typ.)
- Available frequency range: 20 to 50MHz
- Low profile: 1.1 mm
- 3-state function

■ Applications

- High quality audio equipment, Communication equipment and visual applications

[Function Code]

DSO531SHH

A	3.3V	A	$\pm 100 \times 10^{-6}$
B	2.8V	B	$\pm 50 \times 10^{-6}$
C	2.5V	C	$\pm 30 \times 10^{-6}$
D	1.8V	D	$\pm 25 \times 10^{-6}$

When requesting the product, please select the model and function code of your request.



■ Standard Specification

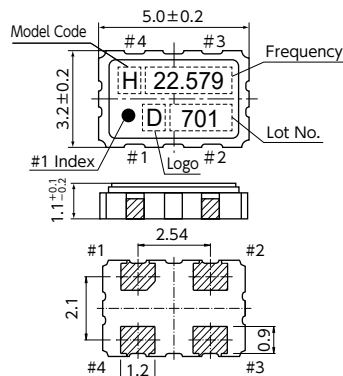
Item	Function Code		Output Frequency Range (MHz)	Legend	Spec.				Condition	
	Supply Voltage	Frequency tolerance			min.	typ.	max.	Unit		
Supply Voltage	A	*	20≤f _o ≤50	V _{cc}	+3.0	+3.3	+3.6	V		
	B				+2.6	+2.8	+3.0			
	C				+2.25	+2.5	+2.75			
	D				+1.62	+1.8	+2.0			
Frequency Tolerance (Includes frequency tolerance at room temperature.)	*	A	*	f _{tol}	-100	—	+100	×10 ⁻⁶	-40 to +85℃	-10 to +70℃ (Standard Operating Temperature Range)
		B			-50	—	+50		-20 to +70℃	
		C			-30	—	+30		-10 to +70℃	
		D			-25	—	+25			
Current Consumption	A	*	20≤f _o ≤50	I _{cc}	—	—	7.7	mA	No Load	
	B				—	—	5.5			
	C				—	—	4.8			
	D				—	—	2.9			
Stand-by Current (#1 pin "L" Level)	A	*	20≤f _o ≤50	I _{std}	—	—	35	μA		
	B				—	—	32			
	C				—	—	30			
	D				—	—	25			
Symmetry	*	*	*	SYM	45	50	55	%	50% V _{cc} Level	
0 Level Output Voltage	*	*	*	V _{OL}	—	—	V _{cc} ×0.1	V		
1 Level Output Voltage	*	*	*	V _{OH}	V _{cc} ×0.9	—	—			
Rise and Fall Time	A	*	*	tr,tf	—	—	2.1	ns	10 to 90% V _{cc} Level	
	B				—	—	2.5			
	C				—	—	2.7			
	D				—	—	4.7			
Load Condition	*	*	*	L _{CMOS}	—	—	15	pF		
OE Pin 0 Level Input Voltage	*	*	*	V _{IL}	—	—	V _{cc} ×0.3	V		
OE Pin 1 Level Input Voltage	*	*	*	V _{IH}	V _{cc} ×0.7	—	—			
Output Enable Time	*	*	*	tPZL	—	—	1	ms		
Output Disable Time	*	*	*	tPLZ	—	—	10	μs		
Phase Noise	A	*	20≤f _o ≤50	—	—	-160	—	dBc/Hz	Offset 1kHz	
	D	*			—	-158	—			
	A	*			—	-172	—		Offset 100kHz	
	D	*			—	-166	—			
Packing Unit (1)	1000pcs./reel(φ180)									

(1) Moisture prevention packing is unnecessary.
Moisture Sensitivity Level : Level 1 (IPC/JEDEC J-STD-033)

Consult our sales representative for other specifications.

[mm]

■ Dimensions



Pin Connections

Pin No.	Connection
#1	OE(Output Enable)
#2	GND
#3	Output
#4	V _{cc}

Function

#1 Input	#3 Output condition
H	Oscillation out
Open	Oscillation out
L	High Z

■ Recommended Land Pattern

<Top View>

