

SMD Crystal Oscillators

DSO221SHF



Actual size

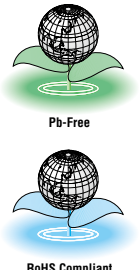
Features

- Supply Voltage: 1.8V/2.5V/2.8V/3.0V/3.3V/5.0V
- Low phase noise: $f_{out} \pm 1\text{kHz} - 145 \text{ dBc/Hz (Typ.)}$
 $f_{out} \pm 100\text{kHz} - 158 \text{ dBc/Hz (Typ.)}$

- Low profile: 0.8mm
- 3-state function
- AEC-Q100 compliant

Applications

- WiLAN, WiMAX, Bluetooth
- DVC, HDTV, Blu-ray Disk
- PC peripherals, gaming equipment, audio equipment
- Camera module
- Automotive multimedia device



[Function Code]

DSO***SHF Y A

Y : 5.0V	A : $\pm 100 \times 10^{-6}$
A : 3.3V	B : $\pm 50 \times 10^{-6}$
M : 3.0V	C : $\pm 30 \times 10^{-6}$
B : 2.8V	D : $\pm 25 \times 10^{-6}$
C : 2.5V	E : $\pm 20 \times 10^{-6}$
D : 1.8V	

Standard Specification

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

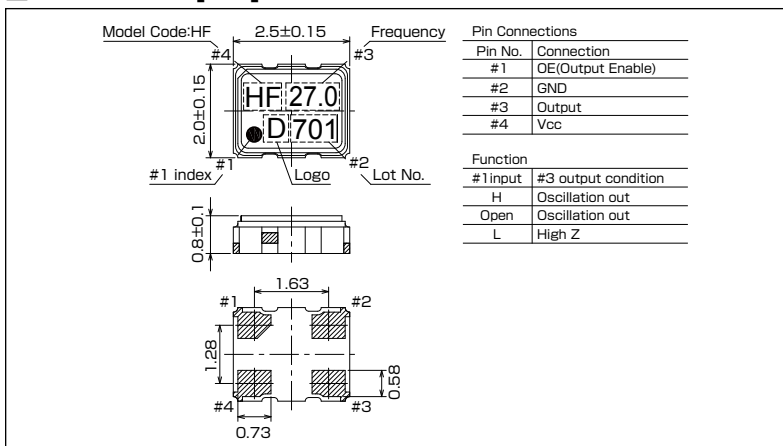
Item	Function Code		Output Frequency Range (MHz)	Legend	Spec.				Condition	
	Supply Voltage	Frequency tolerance			min.	Typ.	max.	Unit		
Supply Voltage	Y	*	Supply Voltage: Y 1.5~48MHz Supply Voltage: A·M·B·C·D 1.5~60MHz	V _{cc}	+4.5	+5.0	+5.5	v		
	A				+3.0	+3.3	+3.6			
	M				+2.7	+3.0	+3.3			
	B				+2.6	+2.8	+3.0			
	C				+2.25	+2.5	+2.75			
	D				+1.6	+1.8	+2.0			
Frequency Tolerance (Includes frequency tolerance at room temperature.)	*	A B C D E	Supply Voltage: Y 1.5~48MHz Supply Voltage: A·M·B·C·D 1.5~60MHz	f _{tol}	-100	-	+100	X10 ⁻⁶	-40~+85°C	-10~+70°C
					-50	-	+50		(Standard Operating Temperature Range)	
					-30	-	+30			
					-25	-	+25			
					-20	-	+20			
Current Consumption	Y	*	Supply Voltage: Y 1.5~48MHz Supply Voltage: A·M·B·C·D 1.5~60MHz	I _{cc}	-	-	8.0	mA	No Load	
	A·M				-	-	4.0			
	B				-	-	3.6			
	C				-	-	3.4			
	D				-	-	2.8			
Stand-by Current(#1 pin "L" Level)	*	*		I _{std}	-	-	10	μA		
Load Condition	Y·A	*		L _{CMOS}	-	-	30	pF		
	M·B·C·D	*			-	-	15			
Symmetry	*	*		SYM	45	50	55	%	at 50% V _{cc}	
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	Y·A·M·B	*	1.5~48MHz	tr,rf	-	-	5(4)	ns	-40~+85°C	10~90% V _{cc} Level (20~80% V _{cc} Level) L _{CMOS} =15pF
	D				-	-	6(5)		-40~+105°C	
	A·M·B·C·D				-	-	8(6)		-40~+85°C	10~90% V _{cc} Level (20~80% V _{cc} Level) L _{CMOS} =30pF
	Y·A				-	-	10(8)			
OE Pin 0 Level Input Voltage	*	*		V _{IL}	-	-	V _{cc} ×0.2	v		
OE Pin 1 Level Input Voltage	*	*		V _{IH}	V _{cc} ×0.8	-	-			
Output Disable Time	*	*		t _{PLZ}	-	-	150	ns		
Output Enable Time	*	*		t _{PZL}	-	-	1	ms		
Phase Noise	Y·A·M·B·C	*	Supply Voltage: Y 1.5~48MHz Supply Voltage: A·M·B·C·D 1.5~60MHz	PHN	-	-145	-	dBc/Hz	Offset 1kHz	
	D				-	-140	-		Offset 100kHz	
	Y·A·M·B·C				-	-158	-			
	D				-	-152	-			
Period Jitter (1)	*	*		t _{RMS}	-	-	2.4	ps	σ	
Total Jitter (1)	*	*		t _{p-p}	-	-	20	ps	Peak to peak	
Phase Jitter	*	*		t _{TJ}	-	-	34	ps	IDJ+n*IRJ n=14.2(BER=1*10 ⁻¹⁵) (2)	
	*	*	40 ≤ f _o ≤ 60	tpj	-	-	1	ps	f _o offset 12kHz ~ 20MHz f _o offset 12kHz ~ 5MHz	
Packing Unit					2000pcs./reel (φ 180)					

(1) Measured WAVECREST DTS-2075

(2) tDJ: Deterministic jitter tRJ: Random jitter

Consult our sales representative for other specifications.

Dimensions [mm]



Recommended Land Pattern [mm]

