

SMD Crystal Oscillators (For Automotive)

DSO211SXF/DSO221SXF

NEW



Actual size DSO211SXF DSO221SXF

Features

- Supply Voltage: 1.8V/2.5V/2.8V/3.3V
- Available frequency range: 1 to 125MHz
- Low profile: 0.7mm (DSO211SXF), 0.8mm (DSO221SXF)
- CMOS Level Output
- Capable of operating over a wide temperature range, from -40 to 125°C
- 3-state function
- AEC-Q200 Compliant (Option: Equivalent to AEC-Q100)

Applications

- Multimedia devices such as car navigation systems and car audio
- Automotive camera



[Function Code]

DSO***SXF

	A Z
A : 3.3V	A : $\pm 100 \times 10^{-6}$
B : 2.8V	Z : $\pm 80 \times 10^{-6}$
C : 2.5V	B : $\pm 50 \times 10^{-6}$
D : 1.8V	C : $\pm 30 \times 10^{-6}$
	D : $\pm 25 \times 10^{-6}$
	E : $\pm 20 \times 10^{-6}$

[Type]

DSO211SXF	2016 size
DSO221SXF	2520 size

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	*	1 ≤f ₀ ≤125	V _{CC}	+3.0	+3.3	+3.6	V	-40 to +125℃ -10 to +70℃ (Standard Operating Temperature Range)			
	B				+2.6	+2.8	+3.0					
	C		+2.25		+2.5	+2.75						
	D		1 ≤f ₀ ≤100		+1.6	+1.8	+2.0					
Frequency Tolerance (includes frequency tolerance at room temperature)	*	A	*	f _{tol}	—	—	±100	×10 ⁻⁶			-40 to +125℃	
		Z			—	—	±80				-40 to +85℃	
		B			—	—	±50					
		C			—	—	±50					
		D			—	—	±30					
		E			—	—	±25					
Current Consumption	A	*	1 ≤f ₀ ≤40	I _{CC}	—	—	2.4	mA			No Load	
			40 <f ₀ ≤100		—	—	4.2					
	100 <f ₀ ≤125		—		—	10.0						
	1 ≤f ₀ ≤40		—		—	2.2						
	40 <f ₀ ≤100		—		—	3.7						
	100 <f ₀ ≤125		—		—	9.0						
	1 ≤f ₀ ≤40		—		—	2.0						
	40 <f ₀ ≤100		—		—	3.4						
	100 <f ₀ ≤125		—		—	8.0						
	D		1 ≤f ₀ ≤40		—	—	1.7					
			40 <f ₀ ≤100		—	—	2.7					
	Stand-by Current (#1 pin "L"Level)		*		*	*	I _{std}		—	—		10
Load Condition	*	*	*	L _{CMOS}	—	—	15	pF				
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	—	—	V				
Rise and Fall Time	A, B, C D	*	*	tr, tf	—	—	3	ns	10 to 90% V _{CC} Level			
5												
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	—	—	V				
Output Disable Time	*	*	*	tPLZ	—	—	200	ns				
Output Enable Time	*	*	*	tPZL	—	—	2	ms				
Period Jitter (1)	*	*	*	tRMS	—	2.4	—	ps	σ			
Total Jitter (1)	*	*	*	tp-p	—	23	—	ps	Peak to peak			
Phase Jitter	*	*	40≤f ₀ ≤125	tTL	—	34	—	ps	tDJ+n×tRJ n=14.1(BER=1×10 ⁻¹²) (2)			
			10≤f ₀ <40	tpj	—	—	1	ps	f ₀ offset:12kHz to 20MHz			
Reliability	AEC-Q100/AEC-Q200											
Packing Unit (3)	3000pcs./reel (φ 180)											

(1) Measured WAVECREST DTS-2075

(2) tDJ: Deterministic jitter tRJ: Random jitter

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

Consult our sales representative for other specifications.

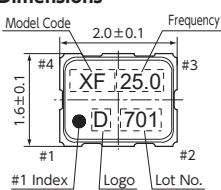
DSO211SXF

[mm]

DSO221SXF

[mm]

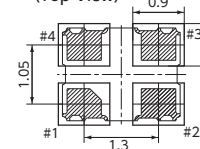
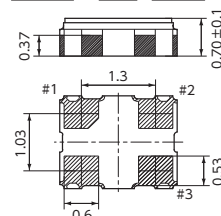
Dimensions



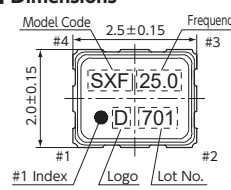
Pin Connections	
Pin No.	Connection
#1	OE (Output Enable)
#2	GND
#3	Output
#4	V _{CC}

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

Recommended Land Pattern (Top View)



Dimensions



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