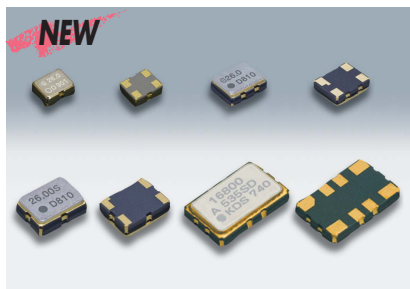


# High-precision SMD VC-TCXO/TCXO

DSA211SDA/DSA221SDA/DSA321SDA/DSA535SD/DSB211SDA/DSB221SDA/DSB321SDA/DSB221SDB/DSB321SDB/DSB535SD  
for Mobile communications / GPS / Industrial Radio system



Actual size DSA211SDA □ DSA221SDA □  
DSA321SDA □ DSA535SD □

## Features

- Low voltage, Supply voltage
- Low phase noise
- Single package structure
- Prevention of moisture packing is unnecessary.  
Moisture Sensitivity Level : LEVEL 1  
(IPC/JEDEC J-STD-033)



## Applications

- Mobile phones (W-CDMA HSPA)
- GPS and Industrial radio communications

[Type]

VC-TCXO	TCXO	Size
DSA211SDA	DSB211SDA	2016 size
DSA221SDA	DSB221SDA	2520 size
	DSB221SDB	
DSA321SDA	DSA321SDA	3225 size
	DSB321SDB	
DSA535SD	DSB535SD	5032 size

## Standard Specification

Item	Type	VC-TCXO				TCXO					
		DSA211SDA	DSA221SDA	DSA321SDA	DSA535SD	DSB211SDA	DSB221SDA	DSB321SDA	DSB221SDB (Stand-by Function)	DSB321SDB (Stand-by Function)	DSB535SD
Frequency Range		13~52MHz	9.6~52MHz		9.6~40MHz	13~52MHz	9.6~40MHz				
Standard Frequency		19.2/ 26/ 38.4/ 40/ 52MHz			13/ 19.2/ 26MHz	16.3676/ 16.367667/ 16.368/ 16.369/ 16.8/ 26/ 33.6MHz					
Operating Voltage Range		+1.7~+3.3V	+1.7~+3.6V		+2.3~+5.5V	+1.7~+3.3V	+1.7~+3.6V			+2.3~+5.5V	
Supply Voltage (Vdd)		+1.8V/ +2.8V/ +3.0V/ +3.3V									
Current Consumption		+1.5 mA max. (f≤26MHz) / +2.0 mA max. (f>26MHz)									
Stand-by Current (#1pin "L" Level)		-				-			1 μA max.		-
Output Level		0.8 Vp-p min. (Clipped Sinewave/ DC-coupled)									
Output Load		10kΩ//10pF									
Frequency Stability Tolerance		±1.5×10 <sup>-6</sup> max. (After 2 reflows)									
vs. Temperature		±1.0×10 <sup>-6</sup> max. / -30~+85°C				±0.5×10 <sup>-6</sup> max. / -30~+85°C					
		±1.0×10 <sup>-6</sup> max. / -40~+85°C (Option)				±0.5×10 <sup>-6</sup> max. / -40~+85°C (Option)					
vs. Supply Voltage		±0.2×10 <sup>-6</sup> max. (Vdd±5%)									
vs. Load Variation		±0.2×10 <sup>-6</sup> max. (10kΩ//10pF±10%)									
vs. Aging		±1.0×10 <sup>-6</sup> max. /year									
Start Up Time		2.0ms max.									
Output Enable Time		-				-			2.0ms max.		-
Frequency Control Control Sensitivity		±3.0×10 <sup>-6</sup> ~±5.0×10 <sup>-6</sup> / Vcont=+1.4±1V @Vdd≥+2.6V				-					
		±3.0×10 <sup>-6</sup> ~±5.0×10 <sup>-6</sup> / Vcont=+0.9±0.6V @Vdd=+1.8V				-					
Response Slope		Positive				-			-		
Phase Noise		[f≤15MHz]				[15MHz<f≤26MHz]		[26MHz<f≤40MHz]			
Offset 100Hz		-115dBc/Hz				-110dBc/Hz		-105dBc/Hz			
Offset 1kHz		-135dBc/Hz				-130dBc/Hz		-125dBc/Hz			
Offset 10kHz		-145dBc/Hz				-140dBc/Hz		-135dBc/Hz			
Offset 100kHz		-145dBc/Hz				-145dBc/Hz		-145dBc/Hz			
Packing Unit		2000pcs./reel (φ180)			4000pcs./reel (φ330)	2000pcs./reel (φ180)				4000pcs./reel (φ330)	

Consult our sales representative for other specifications.

# High-precision SMD VC-TCXO/TCXO

DSA211SDA/DSA221SDA/DSA321SDA/DSA535SD/DSB211SDA/DSB221SDA/DSB321SDA/DSB221SDB/DSB321SDB/DSB535SD  
for Mobile communications / GPS / Industrial Radio system

## Dimensions [mm]

### DSA211SDA/DSB211SDA

Model Code  
G : VC-TCXO (DSA211SDA)  
H : TCXO (DSB211SDA)

Pin Connections	
Pin No.	Connection
#1	Vcont(VC-TCXO)/GND(TCXO)
#2	GND
#3	Output
#4	Vdd

Model Code: 2.1±0.1, Frequency, 1.7±0.1, G 26.0, D 901, #1 INDEX, Logo, Lot No., #1, #2, #3, #4, 0.18, 0.53±0.07

Recommended Land Pattern (Top View)

### DSA221SDA/DSB221SDA/DSB221SDB

Model Code  
G : VC-TCXO (DSA221SDA)  
H : TCXO (DSB221SDA)  
L : TCXO (DSB221SDB Stand-by Function)

Pin Connections	
Pin No.	Connection
#1	Vcont(VC-TCXO)/GND(TCXO) ENABLE/DISABLE(Stand-by Function)
#2	GND
#3	Output
#4	Vdd

Model Code: 2.5±0.15, Frequency, 2.0±0.15, G 26.0, D 901, #1 INDEX, Logo, Lot No., #1, #2, #3, #4, 0.225, 0.8±0.1

Recommended Land Pattern (Top View)

### DSA321SDA/DSB321SDA/DSB321SDB

Model Code  
S : VC-TCXO (DSA321SDA)  
T : TCXO (DSB321SDA)  
U : TCXO (DSB321SDB Stand-by Function)

Pin Connections	
Pin No.	Connection
#1	Vcont(VC-TCXO)/GND(TCXO) ENABLE/DISABLE(Stand-by Function)
#2	GND
#3	Output
#4	Vdd

Model Code: 3.2±0.15, Frequency, 2.5±0.15, 26.00 S, D 901, #1 INDEX, Logo, Lot No., #1, #2, #3, #4, 0.50, 0.9±0.1

Recommended Land Pattern (Top View)

### DSA535SD/DSB535SD

Model Code  
A : VC-TCXO (DSA535SD)  
B : TCXO (DSB535SD)

Pin Connections	
Pin No.	Connection
#1	Vcont(VC-TCXO)/GND(TCXO)
#2	N.C.(Test Terminal)
#3	N.C.(Test Terminal)
#4	GND
#5	Output
#6	N.C.(Test Terminal)
#7	N.C.(Test Terminal)
#8	Vdd

Model Code: 5.0±0.15, Frequency, 3.2±0.15, 16800, A 535SD, KDS 740, #1 INDEX, Logo, Lot No., #1, #2, #3, #4, #5, #6, #7, #8, 1.05±0.15

Recommended Land Pattern (Top View)