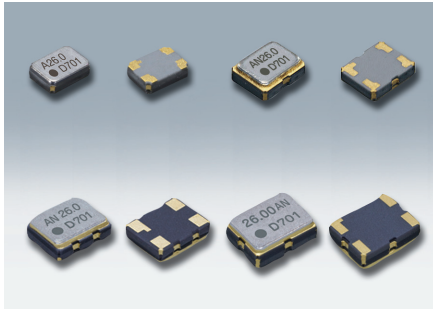


# High-precision SMD VC-TCXO/TCXO (For Automotive)

DSA1612SDN/DSA211SDN/DSA221SDN/DSA321SDN  
 DSB1612SDN/DSB211SDN/DSB221SDN/DSB321SDN/DSB1612SDNB/DSB211SDNB/DSB221SDNB/DSB321SDNB



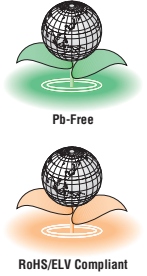
Actual size DSA1612SDN DSA211SDN   
 DSA221SDN DSA321SDN

## Features

- Low phase noise
- Single packaged structure
- Moisture prevention packing is unnecessary.  
Moisture Sensitivity Level: LEVEL 1 (IPC/JEDEC J-STD-033)
- AEC-Q100 Compliant

## Applications

- Telematics, Satellite radio



[Type]

VC-TCXO	TCXO	TCXO(Stand-by Function)	Size
DSA1612SDN	DSB1612SDN	DSB1612SDNB	1612 size
DSA211SDN	DSB211SDN	DSB211SDNB	2016 size
DSA221SDN	DSB221SDN	DSB221SDNB	2520 size
DSA321SDN	DSB321SDN	DSB321SDNB	3225 size

## Standard Specification

Item	Type	VC-TCXO				TCXO							
		DSA1612SDN	DSA211SDN	DSA221SDN	DSA321SDN	DSB1612SDN	DSB211SDN	DSB221SDN	DSB321SDN	DSB1612SDNB (Stand-by Function)	DSB211SDNB (Stand-by Function)	DSB221SDNB (Stand-by Function)	DSB321SDNB (Stand-by Function)
Frequency Range		16 to 60MHz	12.288 to 52MHz	9.6 to 52MHz	16 to 60MHz	12.288 to 52MHz	9.6 to 52MHz	16 to 60MHz	12.288 to 52MHz	9.6 to 52MHz	16 to 60MHz	12.288 to 52MHz	9.6 to 52MHz
Standard Frequency		19.2MHz/26MHz/38.4MHz/40MHz/52MHz				16.3676MHz/16.367667MHz/16.368MHz/16.369MHz/16.8MHz/26MHz/33.6MHz							
Supply Voltage Range		+1.68 to +3.5V											
Supply Voltage(Vcc)		+1.8V/+2.6V/+2.8V/+3.0V/+3.3V											
Current Consumption		+1.5mA max.(f≤26MHz)/+2.0mA max.(26MHz<f≤52MHz)/+2.5mA max.(f≤60MHz)											
Stand-by Current		-								+3μA max.			
Output Level		0.8Vp-p min.(f≤52MHz)(Clipped Sinewave/DC-coupled)											
Output Load		10kΩ//10pF											
Frequency Stability													
Tolerance		±1.5×10 <sup>-6</sup> max.(After 2 reflows)											
vs. Temperature		±0.5×10 <sup>-6</sup> max./-40 to +85°C											
vs. Supply Voltage		±0.2×10 <sup>-6</sup> max.(Vcc ±5%)											
vs. Load Variation		±0.2×10 <sup>-6</sup> max.(10kΩ//10pF±10%)											
vs. Aging		±1.0×10 <sup>-6</sup> max./year											
Frequency Control													
Control Sensitivity		±3.0×10 <sup>-6</sup> to ±5.0×10 <sup>-6</sup> /Vcont=+1.4V±1V @Vcc±2.6V				-							
Response Slope		Positive				-							
Start up Time		2.0ms max.											
Output Enable Time		-								2.0ms max.			
Phase Noise		[f≤26MHz]				[26MHz<f≤40MHz]				[40MHz<f≤52MHz]			
Offset 100Hz		-115dBc/Hz				-110dBc/Hz				-105dBc/Hz			
Offset 1kHz		-130dBc/Hz				-130dBc/Hz				-125dBc/Hz			
Offset 10kHz		-150dBc/Hz				-150dBc/Hz				-145dBc/Hz			
Offset 100kHz		-155dBc/Hz				-155dBc/Hz				-150dBc/Hz			
Reliability		AEC-Q100											
Packing Unit		DSA1612SDN/DSA211SDN/DSA221SDN, DSB1612SDN/DSB211SDN/DSB221SDN, DSB1612SDNB/DSB211SDNB/DSB221SDNB: 3000pcs./reel(φ180) DSA321SDN, DSB321SDN, DSB321SDNB: 2000pcs./reel(φ180)											

Consult our sales representative for other specifications.

# High-precision SMD VC-TCXO/TCXO (For Automotive)

For Automotive Applications

## ■ Dimensions

[mm]

### ■ DSA1612SDN/DSB1612SDN/DSB1612SDNB

Model Code

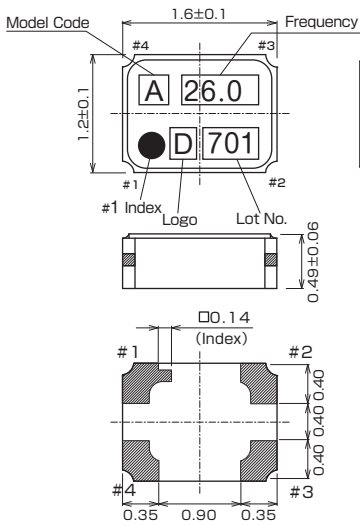
A: VC-TCXO (DSA1612SDN)

B: TCXO (DSB1612SDN)

C: TCXO (DSB1612SDNB Stand-by Function)

Pin Connections

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



### ■ Recommended Land Pattern <Top View>

### ■ DSA211SDN/DSB211SDN/DSB211SDNB

Model Code

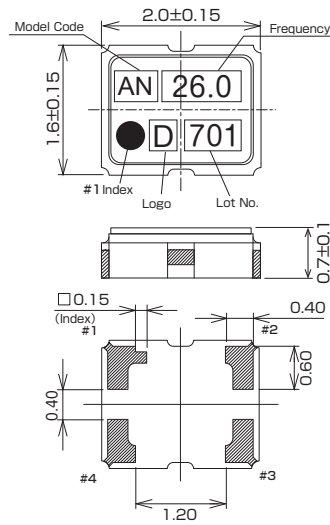
AN : VC-TCXO (DSA211SDN)

BN : TCXO (DSB211SDN)

CN : TCXO (DSB211SDNB Stand-by Function)

Pin Connections

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



### ■ Recommended Land Pattern <Top View>

### ■ DSA221SDN/DSB221SDN/DSB221SDNB

Model Code

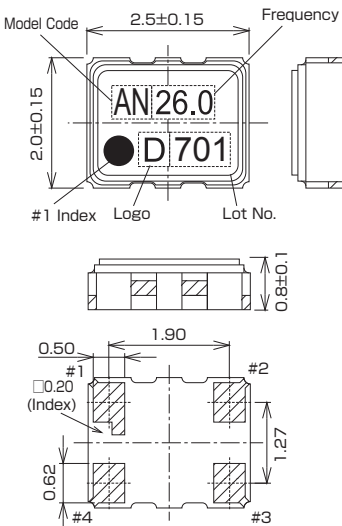
AN : VC-TCXO (DSA221SDN)

BN : TCXO (DSB221SDN)

CN : TCXO (DSB221SDNB Stand-by Function)

Pin Connections

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



### ■ Recommended Land Pattern <Top View>

### ■ DSA321SDN/DSB321SDN/DSB321SDNB

Model Code

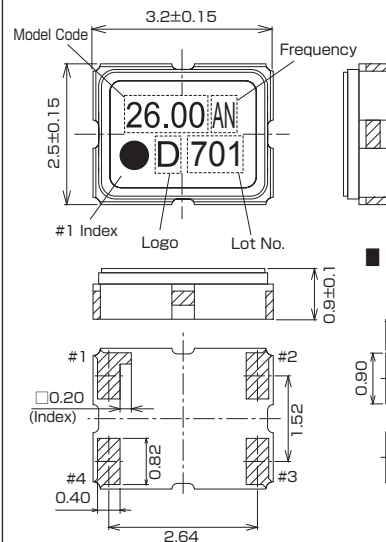
AN : VC-TCXO (DSA321SDN)

BN : TCXO (DSB321SDN)

CN : TCXO (DSB321SDNB Stand-by Function)

Pin Connections

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



### ■ Recommended Land Pattern <Top View>

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