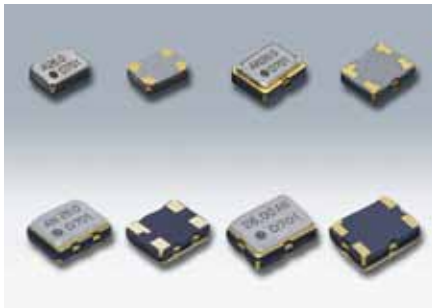


High-precision SMD VC-TCXO/TCXO

DSA1612SDN/DSA211SDN/DSA221SDN/DSA321SDN

DSB1612SDN, DSB1612SDNB/DSB211SDN, DSB211SDNB/DSB221SDN, DSB221SDNB/DSB321SDN, DSB321SDNB



Actual size DSA1612SDN □ DSA211SDN □
DSA221SDN □ DSA321SDN □

■ Features

- Low voltage operation
- Low phase noise
- Single package structure

■ Applications

- Mobile phones
- GPS/GNSS and Industrial radio communications



[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

Type Item		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	
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. (26<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 ⁻⁶ max. (After 2 reflows)																	
vs. Temperature	±1.0×10 ⁻⁶ ,±2.5×10 ⁻⁶ max./-30 to +85℃ ±1.0×10 ⁻⁶ ,±2.5×10 ⁻⁶ max./-40 to +85℃(Option)						±0.5×10 ⁻⁶ ,±2.5×10 ⁻⁶ max./-30 to +85℃ ±0.5×10 ⁻⁶ ,±2.5×10 ⁻⁶ max./-40 to +85℃(Option)											
vs. Supply Voltage	±0.2×10 ⁻⁶ max. (Vcc ±5%)																	
vs. Load Variation	±0.2×10 ⁻⁶ max. (10kΩ//10pF±10%)																	
vs. Aging	±1.0×10 ⁻⁶ max./year																	
Frequency Control																		
Control Sensitivity	±3.0×10 ⁻⁶ to ±5.0×10 ⁻⁶ /Vcont=+1.4V±1V @Vcc≥+2.6V ±3.0×10 ⁻⁶ to ±5.0×10 ⁻⁶ /Vcont=+0.9V±0.6V @Vcc=+1.8V						—											
Response Slope	Positive						—											
Start up Time	2.0ms max.																	
Output Enable Time	—												2.0ms max.					
Phase Noise																		
Offset 100Hz	[f≤26MHz]						[26MHz<f≤40MHz]						[40MHz<f≤52MHz]					
Offset 1kHz	-115dBc/Hz						-110dBc/Hz						-105dBc/Hz					
Offset 10kHz	-130dBc/Hz						-130dBc/Hz						-125dBc/Hz					
Offset 100kHz	-150dBc/Hz						-150dBc/Hz						-145dBc/Hz					
	-155dBc/Hz						-155dBc/Hz						-150dBc/Hz					
Packing Unit (1)	DSA1612SDN/DSA211SDN/DSA221SDN, DSB1612SDN/DSB211SDN/DSB221SDN, DSB1612SDNB/DSB211SDNB/DSB221SDNB: 3000pcs./reel (φ180) DSA321SDN, DSB321SDN, DSB321SDNB: 2000pcs./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.

High-precision SMD VC-TCXO/TCXO

For Mobile communications/Industrial system/GPS/GNSS

■ Dimensions

[mm]

■ DSA1612SDN/DSB1612SDN/DSB1612SDNB

Model Code

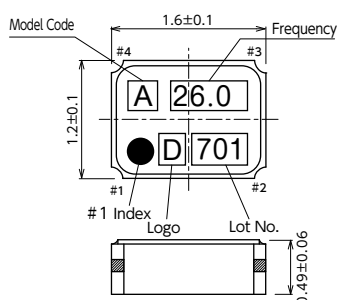
A: VC-TCXO (DSA1612SDN)

B: TCXO (DSB1612SDN)

C: TCXO (DSB1612SDNB Stand-by Function)

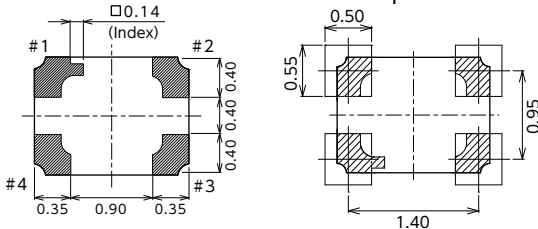
Pin Connections

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

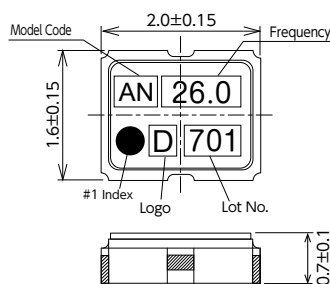
AN : VC-TCXO (DSA211SDN)

BN : TCXO (DSB211SDN)

CN : TCXO (DSB211SDNB Stand-by Function)

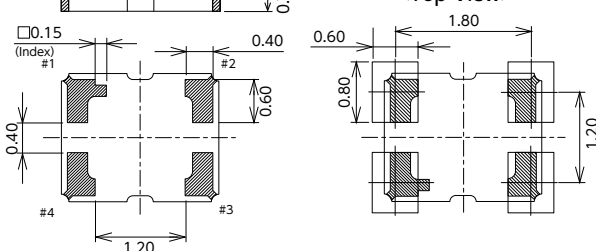
Pin Connections

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

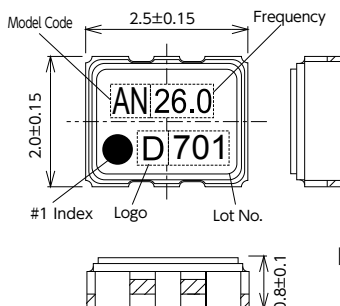
AN : VC-TCXO (DSA221SDN)

BN : TCXO (DSB221SDN)

CN : TCXO (DSB221SDNB Stand-by Function)

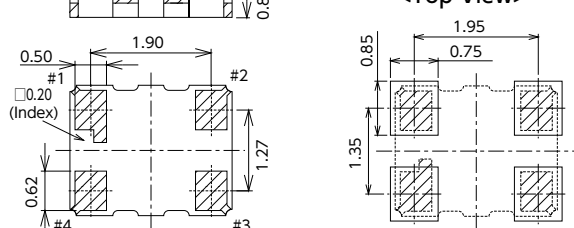
Pin Connections

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

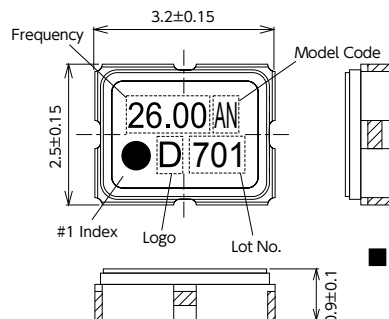
AN : VC-TCXO (DSA321SDN)

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>

