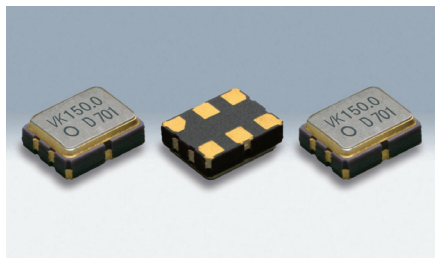


SMD Differential Output Voltage Controlled Crystal Oscillators

DSV323SV/DSV323SK/DSV323SJ/DSV323SD



Actual size

Features

- Available with four types of output functions: CMOS, LV-PECL, LVDS, HCSL
- Differential output (LV-PECL, LVDS, HCSL)
- Low jitter
- 3-state function

Applications

- Optical transmission device, radio transmitter-receiver equipment, digital image devices, and HDTV.



Pb-Free



RoHS Compliant

Standard Specification

Item	Type	Legend	DSV323SV	DSV323SK	DSV323SJ	DSV323SD
Output Specification		—	CMOS	LV-PECL	LVDS	HCSL
Output Frequency Range		f_0	6.75 to 170MHz		80 to 170MHz	
Supply Voltage		V_{CC}			$+3.3V \pm 0.165V$	
Frequency Control Voltage		V_{cont}			$+1.65V \pm 1.65V$	
Storage Temperature Range		T_{stg}			-40 to $+85^\circ C$	
Operating Temperature Range		T_{use}			-10 to $+70^\circ C$ / -40 to $+85^\circ C$	
Frequency Tolerance		f_{tol}			$\pm 50 \times 10^{-6}$ max.	
Frequency Adjustment Range		f_{cont}			$\pm 100 \times 10^{-6}$ min. [Positive Slope]	
Current Consumption		I_{CC}	12mA 6.75MHz $\leq f_0 \leq 90$ MHz 25mA 80MHz $\leq f_0 \leq 186$ MHz [No Load]	50mA max.	30mA max.	40mA max.
Stand-by Current (#1 pin "L" Level)		I_{std}	5mA 6.75MHz $\leq f_0 \leq 90$ MHz 30μA 80MHz $\leq f_0 \leq 186$ MHz		30μA	
Output Load		Load	15pF max.	50Ω to $V_{CC} - 2V$	100Ω (Output – OutputN)	50Ω
Symmetry		SYM	40 to 60% [50% V_{CC} Level]		40 to 60% [at outputs cross point]	
0 Level Output Voltage		V_{OL}	$V_{CC} \times 0.1$ max.	$V_{CC} - 1.81$ to $V_{CC} - 1.62V$	—	-150 to $150mV$
1 Level Output Voltage		V_{OH}	$V_{CC} \times 0.9$ min.	$V_{CC} - 1.025$ to $V_{CC} - 0.88V$	—	600 to 850mV
Rise and Fall Time		$t_{r,tf}$	10ns max.(6.75MHz $\leq f_0 \leq 40$ MHz) 6ns max.(40MHz $< f_0 \leq 54$ MHz) 4ns max.(54MHz $< f_0 \leq 90$ MHz) 2ns max.(80MHz $\leq f_0 \leq 186$ MHz) [10 to 90% V_{CC}]	0.5ns max. [20 to 80% Output, OutputN]	0.5ns max. [20 to 80% Output – OutputN]	0.5ns max. [0.175 to 0.525V Level]
Differential Output Voltage		V_{OD1}, V_{OD2}	—	—	0.247 to 0.454V	—
Change to V_{OD}		ΔV_{OD}	—	—	50mV [$\Delta V_{OD} = V_{OD1} - V_{OD2} $]	—
Offset Voltage		V_{OS}	—	—	1.125 to 1.375V	—
Offset to V_{OS}		ΔV_{OS}	—	—	50mV	—
Crossing Point Voltage		V_{cr}	—	—	—	250 to 550mV
OE Pin 0 Level Input Voltage		V_{IL}			$V_{CC} \times 0.3$ max.	
OE Pin 1 Level Input Voltage		V_{IH}			$V_{CC} \times 0.7$ min.	
Output Disable Time		t_{PLZ}	150ns max. (6.75MHz $\leq f_0 \leq 90$ MHz) 200ns max. (80MHz $\leq f_0 \leq 186$ MHz)		200ns max.	
Output Enable Time		t_{PZL}	150ns max. (6.75MHz $\leq f_0 \leq 90$ MHz) 2ms max. (80MHz $\leq f_0 \leq 186$ MHz)		2ms max.	
Period Jitter (1)		t_{RMS}			2.3ps typ. (σ)	
		t_{p-p}			22ps typ. (Peak to peak)	
Total Jitter (1)		t_{TL}			32ps typ. [$t_{DJ} + n \times t_{RJ}$ $n=14.1$ (BER=1 $\times 10^{-13}$) (2)]	
Phase Jitter		t_{pj}			1ps max. [13.5MHz $\leq f_0 < 40$ MHz, f_0 offset: 12kHz to 5MHz $f_0 \geq 40$ MHz, f_0 offset: 12kHz to 20MHz]	
Packing Unit (3)		—			2000pcs/reel(180 ϕ)	

(1) Measured WAVECREST DTS-2075

(2) tDJ : Deterministic jitter tRJ : Random jitter

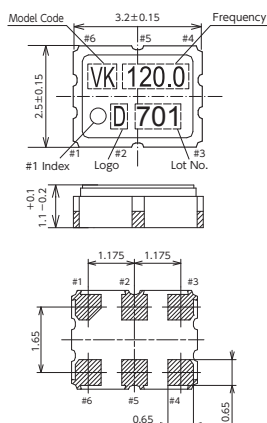
(3) Moisture prevention packing is unnecessary.

Moisture Sensitivity Level : Level 1 (IPC/JEDEC J-STD-033)

Consult our sales representative for other specifications.

[mm]

Dimensions



Model Code	DSV323SV : VV DSV323SK : VK DSV323SJ : VJ DSV323SD : VD
Pin Connections	
Pin No.	Connection
#1	V_{cont}
#2	OE(Output Enable)
#3	GND
#4	Output
#5	NC OutputN DSV323SV OutputN DSV323SK OutputN DSV323SJ OutputN DSV323SD
#6	V_{CC}
Function	
#2 Input	#4,#5 Output condition
H	Oscillation out
Open	Oscillation out
L	High Z

Recommended Land Pattern

<Top View>

