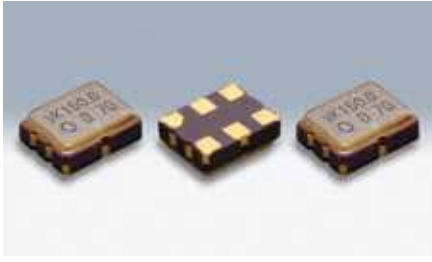


# SMD Voltage Controlled Crystal Oscillators

## DSV323S SERIES



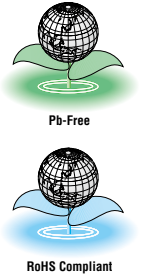
Actual size

### ■ Features

- Available with four types of output functions: CMOS, LV-PECL, LVDS and 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 related equipment.



### ■ Standard Specification

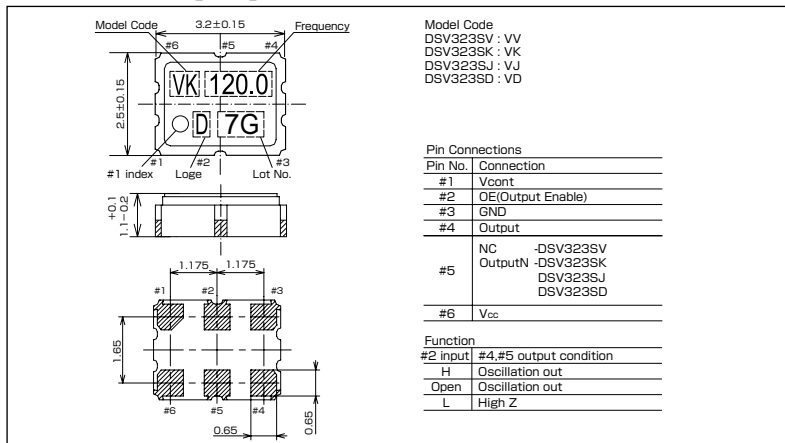
Item	Type	Legend	DSV323SV	DSV323SK	DSV323SJ	DSV323SD
Output Specification		—	CMOS	LV-PECL	LVDS	HCSL
Output Frequency Range		fo	6.75~186MHz	40~170MHz	80~170MHz	
Supply Voltage		V <sub>cc</sub>	+3.3V±0.165V			
Frequency Control Voltage		V <sub>cont</sub>	+1.65V±1.65V			
Storage Temperature Range		T <sub>stg</sub>	-40°C~+85°C			
Operating Temperature Range		T <sub>use</sub>	-10°C~+70°C / -40°C~+85°C			
Frequency Tolerance		f <sub>tol</sub>	±50×10 <sup>-6</sup> max.			
Frequency Adjustment Range		f <sub>cont</sub>	±100×10 <sup>-6</sup> min. [Positive Slope]			
Current Consumption		I <sub>cc</sub>	12mA 6.75≤fo≤90MHz 25mA 80≤fo≤186MHz [No Load]	50mA max.	30mA max.	40mA max.
Stand-by Current(#1 pin "L" Level)		I <sub>std</sub>	5mA 6.75≤fo≤90MHz 30μA 80≤fo≤186MHz	30μA		
Output Load		Load	15pF max.	50Ω to V <sub>cc</sub> -2V	100Ω (Output-OutputN)	50Ω
Symmetry		SYM	40%~60% [50% V <sub>cc</sub> Level]	40%~60% [at outputs cross point]		
0 Level Output Voltage		V <sub>OL</sub>	V <sub>cc</sub> ×0.1 max.	V <sub>cc</sub> -1.81V~V <sub>cc</sub> -1.62V	—	-150mV~150mV
1 Level Output Voltage		V <sub>OH</sub>	V <sub>cc</sub> ×0.9 min.	V <sub>cc</sub> -1.025V~V <sub>cc</sub> -0.88V	—	600mV~850mV
Rise and Fall Time		tr,tf	10ns max.(6.75≤fo≤40MHz)	0.5ns max. [20~80% Output,OutputN]	0.5ns max. [20~80% Output-OutputN]	0.5ns max. [0.175~0.525V Level]
			6ns max.(40<fo≤54MHz)			
			4ns max.(54<fo≤90MHz)			
			2ns max.(80≤fo≤186MHz)			
			[10~90% V <sub>cc</sub> ]			
Differential Output Voltage		V <sub>OD1</sub> , V <sub>OD2</sub>	—	—	0.247V~0.454V	—
Change to V <sub>OD</sub>		ΔV <sub>OD</sub>	—	—	50mV[ΔV <sub>OD</sub> = V <sub>OD1</sub> -V <sub>OD2</sub>  ]	—
Offset Voltage		V <sub>OS</sub>	—	—	1.125V~1.375V	—
Offset to V <sub>OS</sub>		ΔV <sub>OS</sub>	—	—	50mV	—
Crossing Point Voltage		V <sub>cr</sub>	—	—	—	250~550mV
OE Pin 0 Level input Voltage		V <sub>IL</sub>	V <sub>cc</sub> ×0.3max.			
OE Pin 1 Level input Voltage		V <sub>IH</sub>	V <sub>cc</sub> ×0.7min.			
Output Disable Time		tPLZ	150ns max. (6.75≤fo≤90MHz)	200ns max.		
			200ns max. (80≤fo≤186MHz)			
Output Enable Time		tPZL	150ns max. (6.75≤fo≤90MHz)	2ms max.		
			2ms max. (80≤fo≤186MHz)			
Period Jitter(1)		tRMS	2.3ps typ. (σ)			
			tp-p	22ps typ. (Peak to peak)		
Total Jitter(1)		tTL	32ps typ. [tDJ + n * tRJ n=1.4.1(BER=1 * 10 <sup>-12</sup> )(2)]			
Phase Jitter		tpj	1ps max. [13.5≤fo<40MHz, fo offset:12kHz~5MHz fo≥40MHz, fo offset:12kHz~20MHz]			
Packing Unit		—	2000pcs/reel(180 φ)			

(1) Measured WAVECREST DTS-2075

(2) tDJ: Deterministic jitter tRJ: Random jitter

Consult our sales representative for other specifications.

### ■ Dimensions [mm]



### ■ Recommended Land Pattern [mm]

