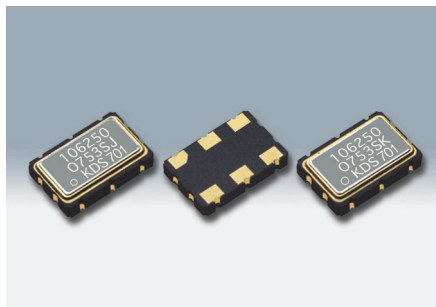


# SMD Differential Output Crystal Oscillators

## DSO753SK/DSO753SJ/DSO753SD



Actual size

### ■ Features

- Package size : 7.3×4.9×1.5mm
- 2.5V/3.3V operating voltage, High speed type (13.5 to 212.5MHz)
- 3-state function
- LV-PECL output (DSO753SK)
- LVDS output (DSO753SJ)
- HCSL output (DSO753SD)

### ■ Applications

- Server, FC-HBA



### ■ Standard Specification

Item	Type	Legend	DSO753SK	DSO753SJ	DSO753SD
Output Specification	-	-	LV-PECL	LVDS	HCSL
Output Frequency Range	$f_o$	-	13.5 to 212.5MHz		
Supply Voltage	$V_{cc}$	-	+2.5V±0.125V/+3.3V±0.165V		
Frequency Tolerance (Includes frequency tolerance at room temperature.)	$f_{tol}$	-	±50×10 <sup>-6</sup> max., ±100×10 <sup>-6</sup> max.		
Storage Temperature Range	$T_{stg}$	-	-40 to +85°C		
Operating Temperature Range	$T_{use}$	-	-10 to +70°C, -40 to +85°C		
Current Consumption	$I_{cc}$	-	45mA max. ( $f_o \leq 170$ MHz), 50mA max. (170MHz < $f_o \leq 212.5$ MHz)	20mA max.	30mA max. ( $f_o \leq 170$ MHz), 35mA max. (170MHz < $f_o \leq 212.5$ MHz)
Stand-by Current (#1 pin "L" Level)	$I_{std}$	-	10μA max.		
Load Condition	Load-R	-	50Ω to $V_{CC}-2V$	100Ω (Output-OutputN)	50Ω
Symmetry	SYM	-	45 to 55% [at outputs cross point]		
0 Level Output Voltage	$V_{OL}$	-	$V_{CC}-1.81$ to $V_{CC}-1.62V$	-	-0.15 to 0.15V
1 Level Output Voltage	$V_{OH}$	-	$V_{CC}-1.025$ to $V_{CC}-0.88V$	-	0.58 to 0.85V
Rise and Fall Time	$t_r, t_f$	-	0.5ns max. [20 to 80% Output, OutputN]	0.4ns 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 $V_{od}$	$\Delta V_{od}$	-	-	50mV [ $\Delta V_{od} =  V_{OD1} - V_{OD2} $ ]	-
Offset Voltage	$V_{os}$	-	-	1.125 to 1.375V	-
Offset to $V_{os}$	$\Delta V_{os}$	-	-	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	$t_{PLZ}$	-	200ns		
Output Enable Time	$t_{PZL}$	-	2ms		
Period Jitter (1)	$t_{RMS}$	-	5ps typ. (13.5MHz ≤ $f_o$ < 27MHz) / 2.5ps typ. (27MHz ≤ $f_o$ ≤ 212.5MHz) (σ)		
	$t_{p-p}$	-	33ps typ. (13.5MHz ≤ $f_o$ < 27MHz) / 22ps typ. (27MHz ≤ $f_o$ ≤ 212.5MHz) (Peak to peak)		
Total Jitter (1)	$t_{TL}$	-	50ps typ. (13.5MHz ≤ $f_o$ < 27MHz) / 35ps typ. (27MHz ≤ $f_o$ ≤ 212.5MHz) [tDJ + n×tRJ n=14.1 (BER=1×10 <sup>-12</sup> ) (2)]		
Phase Jitter	$t_{pj}$	-	1.5ps max. (13.5MHz ≤ $f_o$ < 27MHz) / 1ps max. (27MHz ≤ $f_o$ ≤ 212.5MHz) [13.5MHz ≤ $f_o$ < 40MHz, $f_o$ offset: 12kHz to 5MHz $f_o \geq 40$ MHz, $f_o$ offset: 12kHz to 20MHz]		
Packing Unit (3)	-	-	1000pcs./reel (φ254)		

(1) Measured WAVECREST DTS-2075  
 (2) tDJ : Deterministic jitter tRJ : Random  
 (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

7.3±0.2  
4.9±0.2  
1.5±0.2  
3.65  
1.4  
1.05

#6 #5 #4  
#1 Index #1 #2 #3  
#1 #2 #3

### ■ Recommended Land Pattern

<Top View>

2.54 2.54  
4.2  
1.8  
2.0

**Model Code**  
 DSO753SJ (2.5V, 3.3V) → O753SJA  
 DSO753SK (2.5V) → O753SKB  
 DSO753SK (3.3V) → O753SKA  
 DSO753SD (2.5V, 3.3V) → O753SDA

**Pin Connections**

Pin No.	Connection
#1	OE(Output Enable)
#2	NC
#3	GND
#4	Output
#5	OutputN
#6	V <sub>CC</sub>

**Function**

#1 Input	#4,#5 Output condition
H	Oscillation out
Open	Oscillation out
L	High Z