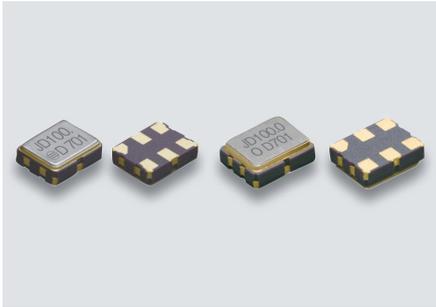


SMD Differential Output Crystal Oscillators - Low Voltage (For Automotive)

DSO223SJ/DSO323SJ/DSO223SD/DSO323SD



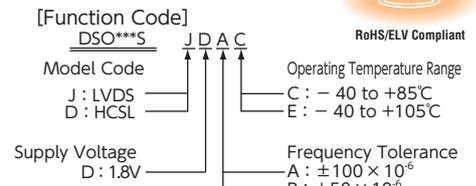
Actual size DSO223S SERIES DSO323S SERIES

Features

- 1.8V operating voltage, High speed type
- 3-state function
- LVDS output (DSO223/323SJ)
- HCSL output (DSO223/323SD)
- AEC-Q200 Compliant (Option: Equivalent to AEC-Q100)

Applications

- Multimedia devices such as car navigation systems and car audio



When requesting the product, please select the model and function code of your request.

Standard Specification

| Item | Type | Legend | DSO223SJ DSO323SJ | DSO223SD DSO323SD |
|---|-------------------------------------|--------|---|--------------------------------|
| Output Specification | | — | LVDS | HCSL |
| Output Frequency Range | fo | | 27 to 100MHz | |
| Supply Voltage | V _{CC} | | +1.8V±0.09V | |
| Frequency Tolerance (Includes frequency tolerance at room temperature.) | f _{tol} | | ±50×10 ⁻⁶ max., ±80×10 ⁻⁶ max. / ±100×10 ⁻⁶ max. | |
| Storage Temperature Range | T _{stg} | | -40 to +105°C | |
| Operating Temperature Range | T _{use} | | -40 to +85°C, -40 to +105°C | |
| Current Consumption | I _{cc} | | 12mA max. | 25mA max. |
| Stand-by Current (#1 pin "L" Level) | I _{std} | | 10 μA max. | |
| Load Resistance | Load-R | | 100Ω (Output-OutputN) | 50Ω |
| Symmetry | SYM | | 45 to 55% [at outputs cross point] | |
| 0 Level Output Voltage | V _{OL} | | — | -0.15 to 0.15V |
| 1 Level Output Voltage | V _{OH} | | — | 0.50 to 1.0V |
| Rise and Fall Time | tr, tf | | 0.5ns max. [20 to 80% Output-OutputN] | 0.6ns max. [20 to 80% Vopp] |
| Differential Output Voltage | V _{OD1} , V _{OD2} | | 0.247 to 0.454V | — |
| Change to V _{OD} | ΔV _{OD} | | 50mV [ΔV _{OD} = V _{OD1} -V _{OD2}] | — |
| Offset Voltage | V _{OS} | | 1.125 to 1.375V | — |
| Offset to V _{OS} | ΔV _{OS} | | 50mV | — |
| OE Pin 0 Level input Voltage | V _{IL} | | V _{CC} ×0.3 max. | |
| OE Pin 1 Level input Voltage | V _{IH} | | V _{CC} ×0.7 min. | |
| Output Disable Time | t _{PLZ} | | 200ns | |
| Output Enable Time | t _{PZL} | | 2ms | |
| Period Jitter (1) | t _{RMS} | | 2.5ps typ. (σ) | |
| | t _{p-p} | | 22ps typ. (Peak to peak) | |
| Total Jitter (1) | t _{TJ} | | 35ps typ. [t _{DJ} + n×t _{RJ} n=14.1 (BER=1×10 ⁻¹²) (2)] | |
| Phase Jitter | t _{pj} | | 1ps max. | |
| Reliability | | | AEC-Q100/AEC-Q200 | |
| Packing Unit (3) | | | 2000pcs./reel(φ180) | |

- (1) Measured WAVECREST DTS-2075
- (2) t_{DJ}:Deterministic jitter t_{RJ}: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.

DSO223S SERIES

[mm]

DSO323S SERIES

[mm]

Dimensions

Model Code: DSO223SJ : JD, DSO223SD : DD

| Pin No. | Connection |
|---------|-------------------|
| #1 | OE(Output Enable) |
| #2 | NC |
| #3 | GND |
| #4 | Output |
| #5 | OutputN |
| #6 | V _{CC} |

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

Recommended Land Pattern

<Top View>

Dimensions

Model Code: DSO323SJ : JD, DSO323SD : DD

| Pin No. | Connection |
|---------|-------------------|
| #1 | OE(Output Enable) |
| #2 | NC |
| #3 | GND |
| #4 | Output |
| #5 | OutputN |
| #6 | V _{CC} |

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

Recommended Land Pattern

<Top View>