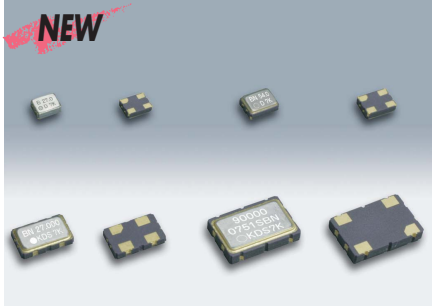


SMD Crystal Oscillators

DSO221SBM, DSO321SBM/SBN, DSO531SBM/SBN, DSO751SBM/SBN



Actual size DSO221SBM DSO321SBM/SBN
DSO531SBM/SBN DSO751SBM/SBN

■ Features

- Low current consumption (5V type)
- 3-state function
- DSO***SBM: General purpose +5.0V HCMOS oscillator
- DSO***SBN: Optimized characteristic for single gate drive/lower loading conditions

■ Applications

- PC, peripherals, and visual, FA equipment applications

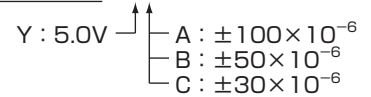


[Type]

DSO751SBM/SBN	7349 size
DSO531SBM/SBN	5032 size
DSO321SBM/SBN	3225 size
DSO221SBM	2520 size

[Function Code]

DSO***SBM/SBN Y B



■ Standard Specification

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

Item	Legend	Function Code	DSO221SBM				DSO321, 531, 751 SBM/SBN				Condition			
			Supply Voltage	Frequency tolerance	Available Frequency Range (MHz)	Spec.			Available Frequency Range (MHz)	Spec.				
Supply Voltage	Vdd	T	*	3.25 ≤ fo ≤ 52	+4.5	+5.0	+5.5	0.7 ≤ fo ≤ 90	+4.5	+5.0	+5.5	V		
Frequency Tolerance (Includes frequency tolerance at room temperature.)	f_tol	*	A	3.25 ≤ fo ≤ 52	-100	-	+100	0.7 ≤ fo ≤ 90	-100	-	+100	X10 ⁻⁶	-40 ~ +85°C	-10 ~ +70°C (Standard Operating Temperature Range)
			B	3.25 ≤ fo ≤ 52	-50	-	+50	0.7 ≤ fo ≤ 90	-50	-	+50			
			C	3.25 ≤ fo ≤ 52	-30	-	+30	0.7 ≤ fo ≤ 54	-30	-	+30			
Current Consumption	Idd	T	*	3.25 ≤ fo ≤ 52	-	-	8.0	0.7 ≤ fo < 32	-	-	4.0	mA	No Load	
										6.0				
										8.0				
Stand-by current (#1 pin "L" Level)	I_std	*	*	*	-	-	50	*	-	-	50	μA		
Symmetry	SYM	*	*	fo < 26	45	50	55	fo < 26	45	50	55	%	50% Vdd Level	
		*	*	fo ≥ 26	40	50	60	fo ≥ 26	40	50	60			
0 Level Output Voltage	Vol	*	*	*	-	-	Vdd × 0.1	*	-	-	Vdd × 0.1	v		
1 Level Output Voltage	Voh	*	*	*	Vdd × 0.9	-	-	*	Vdd × 0.9	-	-			
Rise and Fall Time	tr, tf	*	*	3.25 ≤ fo ≤ 52	-	-	10	0.7 ≤ fo ≤ 54	-	-	7 (6)	ns	DSO***SBM (20~80% Vdd Level) L CMOS: 30pF 10~90% Vdd Level DSO***SBN (20~80% Vdd Level) L CMOS: 15pF 10~90% Vdd Level	
		*	*	-	-	-	-	54 < fo ≤ 90	-	-	5 (4)			
		*	*	-	-	-	-	0.7 ≤ fo ≤ 54	-	-	8 (7)			
		*	*	-	-	-	-	54 < fo ≤ 90	-	-	5 (4)			
Output Load	L_cmos	*	*	*	-	-	30	*	-	-	30	pF	DSO***SBM DSO***SBN	
		*	*	*	-	-	-	*	-	-	15			
OE Pin 0 Level Input Voltage	Vil	*	*	*	-	-	Vdd × 0.2	*	-	-	Vdd × 0.2	v		
OE Pin 1 Level Input Voltage	Vih	*	*	*	Vdd × 0.8	-	-	*	Vdd × 0.8	-	-			
Output Disable Time	Tplz	*	*	*	-	-	150	*	-	-	150	ns		
Output Enable Time	Tpzi	*	*	*	-	-	5	*	-	-	1	ms		
Packing Unit	DSO221SBM, DSO321SBM/SBN: 2000pcs./reel (φ180), DSO531SBM/SBN: 1000pcs./reel (φ180), DSO751SBM/SBN: 1000pcs./reel (φ254)													

Consult our sales representative for other specifications.

■ Dimensions [mm]

DSO221SBM Model Code: B

Model Code: B

Frequency: 27.0

Lot No.: D7K

Logo: #1 Index #1

Pin Connections:
#1 OE (Output Enable)
#2 GND
#3 Output
#4 Vdd

Function:
#1 Input #3 output condition
#2 Input #4 output condition
Open Oscillation out
L High Z

DSO321SBM/SBN

Model Code: B

Frequency: 54.0

Lot No.: D7K

Logo: #1 Index #1

Pin Connections:
#1 OE (Output Enable)
#2 GND
#3 Output
#4 Vdd

Function:
#1 Input #3 output condition
#2 Input #4 output condition
Open Oscillation out
L High Z

DSO531SBM/SBN

Model Code: B

Frequency: 27.000

Lot No.: KDS7K

Logo: #1 Index #1

Pin Connections:
#1 OE (Output Enable)
#2 GND
#3 Output
#4 Vdd

Function:
#1 Input #3 output condition
#2 Input #4 output condition
Open Oscillation out
L High Z

DSO751SBM/SBN

Model Code: B

Frequency: 90000

Lot No.: KDS7K

Logo: #1 Index #1

Pin Connections:
#1 OE (Output Enable)
#2 GND
#3 Output
#4 Vdd

Function:
#1 Input #3 output condition
#2 Input #4 output condition
Open Oscillation out
L High Z