



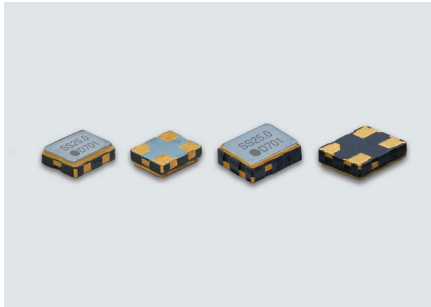
Ark.2G



SMD Crystal Oscillators

Under Development

DS2016AS/DS2520AS



Actual size DS2016AS DS2520AS

■ Features

- Supply Voltage : 1.8V/2.5V/2.8V/3.3V
- Available Frequency range: 1 to 125MHz
- Low Profile : 0.7mm(DS2016AS), 0.8mm(DS2520AS)
- CMOS Level Output
- Supports a wide operating temperature range from -40 to 125°C
- AEC-Q100/AEC-Q200 compliant

■ Applications

- Audio equipment, communication equipment, video equipment, factory automation equipment, PCs, amusement equipment, In-vehicle driving safety applications

[Function Code]

DS****AS A A

A : 3.3V
B : 2.8V
C : 2.5V
D : 1.5V

A : $\pm 100 \times 10^{-6}$
Z : $\pm 80 \times 10^{-6}$
B : $\pm 50 \times 10^{-6}$
C : $\pm 30 \times 10^{-6}$
D : $\pm 25 \times 10^{-6}$
E : $\pm 20 \times 10^{-6}$



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

■ Standard Specification

Item	Function Code		Output Frequency Range (MHz)	Legend	Spec.				Condition		
	Supply Voltage	Frequency tolerance			min	typ.	max.	Unit			
Supply Voltage	A	*	1 ≤ f ₀ ≤ 125	V _{cc}	+3.0	+3.3	+3.6	V			
	B				+2.6	+2.8	+3.0				
	C		1 ≤ f ₀ ≤ 100		+2.25	+2.5	+2.75				
	D				+1.6	+1.8	+2.0				
Frequency Tolerance (Includes frequency tolerance at room temperture)	*	A	*	f _{tol}	−100	−	+100	× 10 ^{−6}	−40 to +125 °C	− 10 to +70°C (Standard Operating Temperature Range)	
		Z			−80	−	+80				
		B			−50	−	+50				
		C			−50	−	+50		−40 to +85 °C		
		D			−30	−	+30				
		E			−25	−	+25				−20 to +70 °C
					−20	−	+20				
Current Consumption	A	*	1 ≤ f ₀ < 40	I _{cc}	−	−	2.4	mA	No Load		
			40 ≤ f ₀ < 100		−	−	4.2				
			100 ≤ f ₀ ≤ 125		−	−	10.0				
	B		1 ≤ f ₀ < 40		−	−	2.2				
			40 ≤ f ₀ < 100		−	−	3.7				
			100 ≤ f ₀ ≤ 125		−	−	9.0				
	C		1 ≤ f ₀ < 40		−	−	2.0				
			40 ≤ f ₀ < 100		−	−	3.4				
			100 ≤ f ₀ ≤ 125		−	−	8.0				
	D		1 ≤ f ₀ < 40		−	−	1.7				
			40 ≤ f ₀ ≤ 100		−	−	2.7				
Stand-by Current (#1 pin"L"Level)	*	*	*	I _{std}	−	−	10.0	μ A			
Load Condition	*	*	*	L _{CMOS}	−	−	15	pF			
Symmetry	*	*	*	SYM	45	50	55	%	at 50% V _{cc}		
0 Level Output Voltage	*	*	*	V _{OL}	−	−	V _{cc} × 0.1	V			
1 Level Output Voltage	*	*	*	V _{OH}	V _{cc} × 0.9	−	−				
Rise and Fall Time	A、B、C	*	*	tr、tf	−	−	3	ns	10 to 90% V _{cc} Level		
	D				−	−	5				
OE Pin 0 Level Input Voltage	*	*	*	V _{IL}	−	−	V _{cc} × 0.3	V			
OE Pin 1 Level Input Voltage	*	*	*	V _{IH}	V _{cc} × 0.7	−	−				
Output Disable Time	*	*	*	tPLZ	−	−	200	ns			
Output Enable Time	*	*	*	tPZL	−	−	2	ms			
Phase Jitter	*	*	40 ≤ f ₀ ≤ 125	tpj	−	−	1	ps	f ₀ offset:12kHz to 20MHz		
			10 ≤ f ₀ < 40						f ₀ offset:12kHz to 5MHz		
Packing unit(1)	3000pcs./reel(Φ 180)										

(1) Moisture prevention packing is unnecessary.

Moisture Sensitivity Level: Level1 (IPC/JEDEC J-STD-033)

Consult our sales representative for other specifications

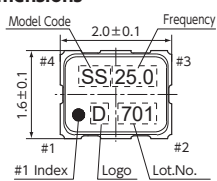
■ DS2016AS

[mm]

■ DS2520AS

[mm]

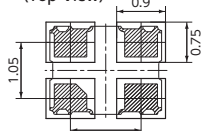
■ Dimensions



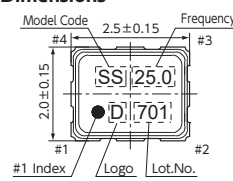
Pin Connections	
Pin No.	Connection
#1	OE(Output Enable)
#2	GND
#3	Output
#4	Vcc
Function	
#1 Input	#3 Output condition
H	Oscillation out
L	High Z

■ Recommended Land Pattern

(Top View)



■ Dimensions



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