



Ark.h.2G

SMD Crystal Oscillators (For Automotive)

DS2016AS/DS2520AS

NEW



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

- Automotive driving-safety systems



[Function Code]

DS****AS

A A

A : 3.3V
B : 2.8V
C : 2.5V
D : 1.8V

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 temperature)	*	A	*	f _{tol}	-100	—	+100	× 10 ⁻⁶	-40 to +125 °C
		Z			-80	—	+80		-40 to +85 °C
		B			-50	—	+50		-20 to +70 °C
		C			-50	—	+50		
		D			-30	—	+30		
		E			-25	—	+25		
		-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)	*	*	1 ≤ f ₀ ≤ 125	I _{std}	—	—	10.0	μ A	
Load Condition	*	*	*	L _{CMOS}	—	—	15	pF	
Symmetry	*	*	1 ≤ f ₀ ≤ 125	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	—	—	V	
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	—	—	V	
Output Disable Time	*	*	*	tPLZ	—	—	200	ns	
Output Enable Time	*	*	*	tPZL	—	—	2	ms	
Phase Jitter	*	*	10 ≤ f ₀ < 40	tpj	—	—	1	ps	f ₀ offset:12kHz to 5MHz
			40 ≤ f ₀ ≤ 125						f ₀ offset:12kHz to 20MHz
Reliability	AEC-Q100/AEC-Q200								
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

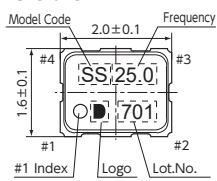
■ DS2016AS

[mm]

■ DS2520AS

[mm]

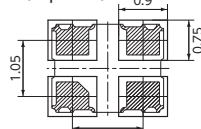
■ Dimensions



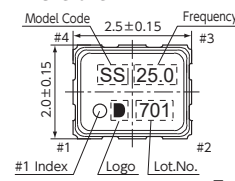
Pin Connections	
Pin No.	Connection
#1	OE(Output Enable)
#2	GND
#3	Output
#4	Vcc
Function	
#1 Input	#3 Output condition
H	Oscillation out
L	High Z

■ Recommended Land Pattern

(Top View)



■ Dimensions



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