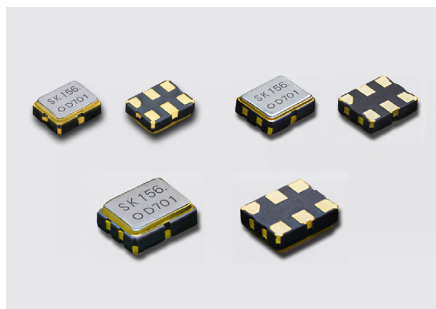


SMD Differential Output Crystal Oscillators

DS2016AK/DS2520AK/DS3225AK/DS2016AJ/DS2520AJ/DS3225AJ/DS2016AD/DS2520AD/DS3225AD



Actual size DS2016A SERIES  DS2520A SERIES  DS3225A SERIES 

Features

- Available frequency: 100MHz, 125MHz, 156.25MHz
- Capable of operating over a wide temperature range from -40 to 105°C
- LV-PECL Output (DS2016AK/DS2520AK/DS3225AK), 2.5V/3.3V operating
- LVDS Output (DS2016AJ/DS2520AJ/DS3225AJ), 1.8V/2.5V/3.3V operating
- HCSL Output (DS2016AD/DS2520AD/DS3225AD), 1.8V/2.5V/3.3V operating
- AEC-Q100/AEC-Q200 compliant

Applications

- Optical transceiver, Optical transmission device, Communication base station, Automotive multimedia device



[Function Code]

DS****AK A A

A: 3.3V

C: 2.5V

D: 1.8V

A: $\pm 100 \times 10^{-6}$
B: $\pm 50 \times 10^{-6}$

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

Standard Specification

Type Item	Symbol	DS2016AK DS2520AK DS3225AK	DS2016AJ DS2520AJ DS3225AJ	DS2016AD DS2520AD DS3225AD
Output Specification	—	LV-PECL	LVDS	HCSL
Output Frequency Range	f _o	100MHz/125MHz/156.25MHz		
Supply Voltage	V _{cc}	+2.5±0.125V/+3.3±0.165V	+1.8±0.090V/+2.5±0.125V/+3.3±0.165V	
Frequency Tolerance	f _{tol}	±50×10 ⁻⁶ max., ±100×10 ⁻⁶ max.		
Storage Temperature Range	T _{stg}	-40 to +125℃		
Operating Temperature Range	T _{use}	-40 to +85℃, -40 to +105℃, -40 to +125℃		
Current Consumption	I _{cc}	60mA max.	20mA max.	40mA max.
Stand-by Current (#1pin "L" Level)	I _{std}	10μA max.		
Load Condition	Load-R	50Ω to V _{cc} -2V	100Ω Output-OutputN	50Ω
Symmetry	SYM	45 to 55% [1/2V _{OPP}]		
0 Level Output Voltage	V _{OL}	V _{cc} -1.810 to V _{cc} -1.590V	0.90V min.	-0.15 to +0.15V
1 Level Output Voltage	V _{OH}	V _{cc} -1.105 to V _{cc} -0.860V	1.60V max.	+0.55 to +0.90V
Rise and Fall Time	t _r , t _f	0.4ns max. [20 to 80% V _{OPP}]		0.5ns max.(2.5V,3.3V), 0.6ns max.(1.8V) [20 to 80% V _{OPP}]
Output Voltage	V _{OPP}	0.40V min.	0.25V min.	0.55V min
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} ×0.3max.		
OE pin 1 Level input Voltage	V _{IH}	V _{cc} ×0.7min.		
Output Disable time	t _{PLZ}	200ns		
Output Enable time	t _{PZL}	2ms		
Phase Jitter [fo offset:12kHz to 20MHz]	t _{pj}	32fs typ., 60fs max. (156.25MHz/V _{cc} =+2.5V, +3.3V)	38fs typ., 60fs max. (156.25MHz/V _{cc} =+2.5V, +3.3V) 45fs typ., 80fs max. (156.25MHz/V _{cc} =+1.8V)	34fs typ., 60fs max. (156.25MHz/V _{cc} =+2.5V, +3.3V) 43fs typ., 80fs max. (156.25MHz/V _{cc} =+1.8V)
Packing Unit(1)	DS2016A SERIES, DS2520A SERIES: 3000pcs./reel (Φ180). DS3225A SERIES: 2000pcs./reel (Φ180)			

(1) Moisture prevention packing is unnecessary.
Moisture Sensitivity Level: Level1 (IPC/JEDEC J-STD-033)

Consult our sales representative for other specifications

DS2016A SERIES

[mm]

DS2520A SERIES

[mm]

DS3225A SERIES

[mm]

■ Dimensions

Model Code

Frequency

2.0±0.15

1.6±0.15

#6

#5

#4

SK 156

701

#1

#2

#3

Lot.No.

Index of #1

Logo

0.7±0.1

Model Code
DS2016AKSK
DS2016AJSJ
DS2016ADSD

Pin No.	Connections
#1	OE
#2	NC
#3	GND
#4	Output
#5	OutputN
#6	Vcc

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

■ Recommended Land Pattern

(Top View)

0.75

0.75

0.95

0.4

0.55

0.825

1.1

0.45

0.6

0.8

■ Dimensions

Model Code

Frequency

2.5±0.15

2.0±0.15

#6

#5

#4

SK 156

701

#1

#2

#3

Lot.No.

Index

Logo

0.85±0.1

Model Code
DS2520AKSK
DS2520AJSJ
DS2520ADSD

Pin No.	Connections
#1	OE
#2	NC
#3	GND
#4	Output
#5	OutputN
#6	Vcc

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

■ Recommended Land Pattern

(Top View)

0.938

0.938

0.75

0.475

0.46

0.575

0.995

0.995

1.375

0.76

0.63

0.675

■ Dimensions

Model Code

Frequency

3.2±0.15

2.5±0.15

#6

#5

#4

SK 156

701

#1

#2

#3

Lot.No.

Index

Logo

1.1±0.1

Model Code
DS3225AKSK
DS3225AJSJ
DS3225ADSD

Pin No.	Connections
#1	OE
#2	NC
#3	GND
#4	Output
#5	OutputN
#6	Vcc

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

■ Recommended Land Pattern

(Top View)

1.175

1.175

1.65

0.65

0.65

1.225

1.225

1.65

0.65

0.65