



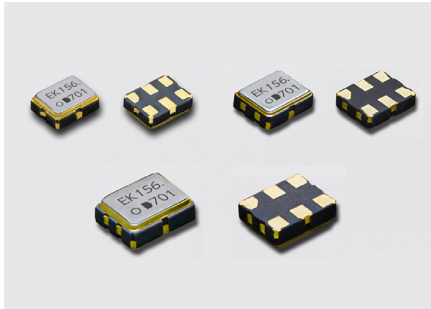
Ark.h.2G



SMD Differential Output Crystal Oscillators

Under Development

DE2016AK/DE2520AK/DE3225AK, DE2016AJ/DE2520AJ/DE3225AJ



Actual size DE2016A SERIES DE2520A SERIES DE3225A SERIES

Features

- Available frequency: 100MHz, 125MHz, 156.25MHz, 312.5MHz
- Supports a wide operating temperature range with narrow tolerance from -40 to +125°C
- LV-PECL output (DE2016AK/DE2520AK/DE3225AK)
- LVDS output (DE2016AJ/DE2520AJ/DE3225AJ)
- AEC-Q200 compliant (option: equivalent to AEC-Q100)

Applications

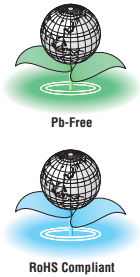
- Server, optical transmission devices, communication base stations, automotive high-speed communication (domain ECU, zone ECU, Ethernet, PCIe)

[Function Code]

DE***AK A B

A : 3.3V B : $\pm 50 \times 10^{-6}$
C : 2.5V C : $\pm 30 \times 10^{-6}$
D : 1.8V E : $\pm 20 \times 10^{-6}$

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



Standard Specification

Item	Type	Symbol	DE2016AK DE2520AK DE3225AK	DE2016AJ DE2520AJ DE3225AJ
Output Specification			LV-PECL	LVDS
Output Frequency Range		f_o	100MHz/125MHz/156.25MHz/312.5MHz	
Supply Voltage		V _{cc}	+2.5 $\pm$ 0.125V/+3.3 $\pm$ 0.165V	+1.8 $\pm$ 0.090V/+2.5 $\pm$ 0.125V/+3.3 $\pm$ 0.165V
Frequency Tolerance		f_{tol}	$\pm 30 \times 10^{-6}$ max., $\pm 50 \times 10^{-6}$ max. (Option $\pm 20 \times 10^{-6}$ max.)	
Storage Temperature Range		T _{stg}	-40 to +125°C	
Operating Temperature Range		T _{use}	-40 to +85°C, -40 to +105°C	
Current Consumption		I _{cc}	55mA max. (156.25MHz), 65mA max. (312.5MHz)	23mA max. (156.25MHz), 38mA max. (312.5MHz)
Stand-by Current (#1 pin"Level)		I _{std}	60 μ A max.	
Load Condition		Load-R	50 Ω to V _{cc} -2V	100 Ω Output-OutputN
Symmetry		SYM	45 to 55% [1/2V _{OPP}]	
0 Level Output Voltage		V _{OL}	V _{cc} -1.5V max.	—
1 Level Output Voltage		V _{OH}	V _{cc} -1.1V min.	—
Rise and Fall Time		tr, tf	0.35ns max. [20 to 80% V _{OPP}]	
Output Voltage		V _{OPP}	0.80V min.	0.5V min.
Differential Output Voltage		V _{OD1} , V _{OD2}	—	0.25 to 0.45V (Option:0.30 to 0.60V, 0.40 to 0.80V)
Change to VOD		ΔV_{OD}	—	50mV [ΔV_{OD} = V _{OD1} -V _{OD2}]
Offset Voltage		V _{OS}	—	0.65 to 0.85V (+1.8V), 1.125 to 1.375V (+2.5V, +3.3V)
Offset VOD		ΔV_{OS}	—	50mV
OE Pin 0 Level Input Voltage		V _{IL}	V _{cc} $\times$ 0.2max.	
OE Pin 1 Level Input Voltage		V _{IH}	V _{cc} $\times$ 0.8min.	
Output Disable Time		t _{PLZ}	100ns max.	
Output Enable Time		t _{PZL}	500ns max.	
Phase Jitter [f ₀ offset:12kHz to 20MHz]		tpj	35s typ., 80fs max. (156.25MHz/V _{cc} =+2.5V, +3.3V) 27fs typ., 60fs max. (312.5MHz/V _{cc} =+2.5V, +3.3V)	40fs typ., 80fs max. (156.25MHz/V _{cc} =+2.5V, +3.3V) 32fs typ., 60fs max. (312.5MHz/V _{cc} =+2.5V, +3.3V)
Packing Unit(1)			DE2016A SERIES, DE2520A SERIES: 3000pcs./reel (ϕ 180), DE3225A SERIES: 2000pcs./reel (ϕ 180)	

(1) Moisture prevention packing is unnecessary.

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

Consult our sales representative for other specifications

DE2016A SERIES

[mm]

DE2520A SERIES

[mm]

DE3225A SERIES

[mm]

■ Dimensions

Model Code: DE2016AK EK
DE2016AJ EJ

Frequency: 2.0 $\pm$ 0.15

Pin Connections:

Pin No.	Connections
#1	OE
#2	Do Not Connected
#3	GND
#4	Output
#5	OutputN
#6	V _{cc}

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

Lot No.

■ Recommended Land Pattern (Top View)

■ Dimensions

Model Code: DE2520AK EK
DE2520AJ EJ

Frequency: 2.5 $\pm$ 0.15

Pin Connections:

Pin No.	Connections
#1	OE
#2	Do Not Connected
#3	GND
#4	Output
#5	OutputN
#6	V _{cc}

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

Lot No.

■ Recommended Land Pattern (Top View)

■ Dimensions

Model Code: DE3225AK EK
DE3225AJ EJ

Frequency: 3.2 $\pm$ 0.15

Pin Connections:

Pin No.	Connections
#1	OE
#2	Do Not Connected
#3	GND
#4	Output
#5	OutputN
#6	V _{cc}

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

Lot No.

■ Recommended Land Pattern (Top View)