Development of Ultra Miniature Crystal Clock Oscillator, DSO211AR

April 22, 2008

DAISHINKU Corporation (President: Sohei Hasegawa) announces the development of the DSO211AR, the world's smallest class SMD crystal oscillator in the industry.

In recent years, electronic components have become smaller with a higher performance expectation by the industry, as well as the devices made of these components. DSO211AR was developed to meet these needs and it is the world's smallest SMD crystal oscillator, its size is 2.0*1.6*0.72mm (0.8mm max.). The oscillator is ceramic-packaged with an adopted melting alloy sealing. The DSO211AR was developed for use in any type of mobile devices, hand held devices, and modules where a very small footprint is required. Compared with its conventional 2520 size, the volume is reduced by 42% (0.0041cc to 0.0024cc), and the area is also reduced by 36% (5.0mm^2 to 3.2mm^2). The downsizing makes high density packaging possible.
The oscillator can be used with a supply voltage range between +1.6V to +3.6V with KDS' original design of oscillator circuit. The DSO211AR provides a very low current consumption of 3mA max at 80MHz, +1.8V.
The oscillator ensures the same or the higher adaptability to environmental change than its conventional model by the adoption of melting alloy sealing and the upgrade of electrode material.
The oscillator is an environmental responsive product which is lead-free and RoHS Compliant.

[Product]
DSO211AR

[Features]
- Ultra miniature: 2016size (2.0*1.6mm), height 0.72mm (0.8mm max.)
- Output frequency range: 1MHz to 80MHz
- Supply voltage: +1.6V to +3.6V
- Ensures the same or the higher adaptability to environmental change than conventional model by the adoption of the melting alloy sealing and the upgrade of electrode material.
- Lead-free and RoHS Compliant

[Applications]
Mobile Phones, Music Players, PND, DSC, DVC, Wireless LAN, TV (PDP, LC, CRT), Network Equipment, FTTH/$_X$ DSL/PLC Modem

[Mass Production]
September, 2008

[Sample Price]
500 yen

[Manufacturing Capacity]

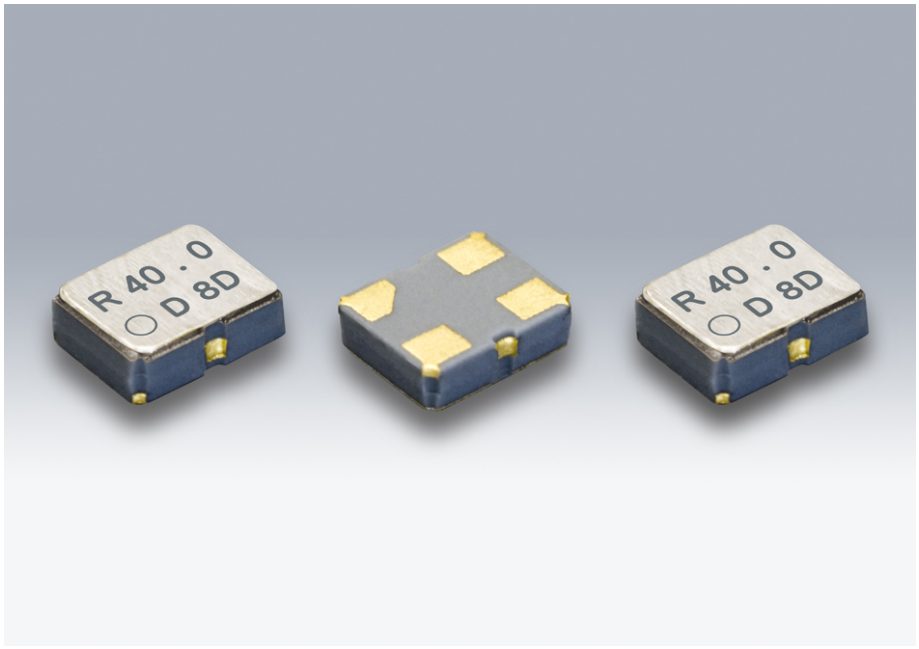
2 million/month

[Electronical Specification]

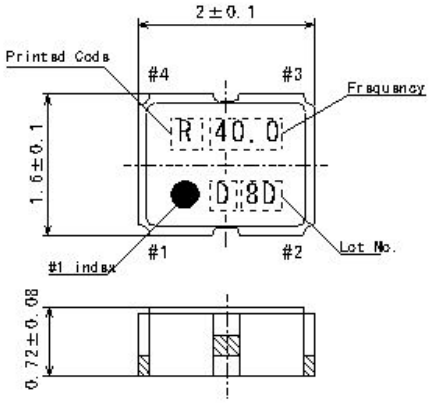
Item	Supply Voltage	Output Frequency Range (MHz)	Legend	Spec.			Unit	Condition
				min.	typ.	max.		
Supply Voltage	*	1≦fo≦80	Vdd	+3.0	+3.3	+3.6	V	
	*			+2.6	+2.8	+3.0		
	*			+2.25	+2.5	+2.75		
	*			+1.6	+1.8	+2.0		
Frequency Tolerance	*	1≦fo≦80	F_tol	-100	-	+100	*10^{-6}	-40 deg.C to 85 deg.C
	*			-50	-	+50		-40 deg.C to 85 deg.C
	*			-30	-	+30		-20 deg.C to 70 deg.C
	*			-25	-	+25		-20 deg.C to 70 deg.C
	*	1≦fo≦50		-20	-	+20		-10 deg.C to 70 deg.C
Current Consumption	+3.3V			-	2.5	5.0	mA	80MHz, No Load Operating Current
	+2.8V			-	2.4	5.0		
	+2.5V			-	2.0	4.0		
	+1.8V			-	1.4	3.0		
Stand-by current (# 1pin "L" Level)	*	*	I_std	-	-	10	μA	
Symmetry	*	fo＜50	SYM	45	50	55	%	50% Vdd Level
	*	fo≧50		40	50	60		
0 Level Output Voltage	*	*	Vol	-	-	Vdd*0.1	V	
1 Level Output Voltage	*	*	Voh	Vdd*0.9	-	-		
Rise and Fall Time	*	1≦fo＜54	tr, tf			7	ns	10% to 90% Vdd Level
	*	54≦fo≦80				5		
Output Load	*	*	L_CMOS			15	pF	
Output Disable Time	*	*	Tplz	-	-	150	ns	
Output Enable Time	*	*	Tpzl	-	-	1	ms	

Please consult our sales representative for other specifications

[Product Photograph]



[Dimensions]



Pin Connections

Pin No.	Connections
#1	OE (Output Enable)
#2	GND
#3	Output
#4	VDD

Function

#1 input	#3 output condition
H	Oscillation out
Open	Oscillation out
L	High Z

Recommended Land Pattern [mm]
<Top View>