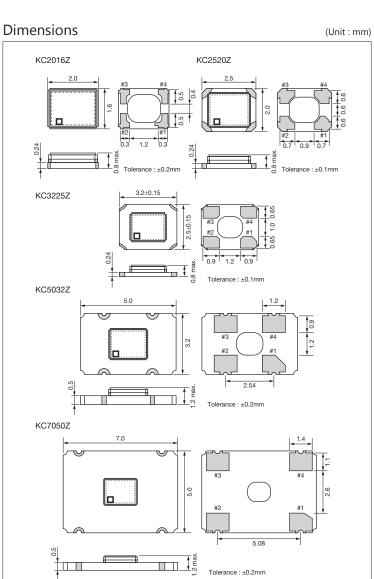


(Unit:mm)

CMOS/ 1.8V, 2.5V, 3.3V/ 2.0×1.6, 2.5×2.0, 3.2×2.5, 5.0×3.2, 7.0×5.0mm





		-
KC2016Z	KC2520Z	
0.6	1.2 0.6	
KC3225Z	2.2	
	1.2	
KC5032Z	2.5	
KC7050Z	5.08	
I		1

**Recommended Land Patterns** 

	Pad Connections				
#1 INH					
#2 Case GND					
#3 Output					
#4	Vcc				

INH Function				
Pad1 Pad3 (Output)				
Open	Active			
"H" Level	Active			
"L" Level	High Z (No-Oscillation)			

# Clock Oscillators Surface Mount Type Clock Z-Series "X" type (STD, Short LT type)





# CMOS/ 1.8V, 2.5V, 3.3V / 2.0×1.6, 2.5×2.0, 3.2×2.5, 5.0×3.2, 7.0×5.0mm



Symbol

# **Features**

- Frequency Range 0.5 to 170 MHz
- CMOS Output
- Short Lead Time
- Heat resistant up to +125°C

# **Applications**

• Consumer/ Networking/ Industrial/ Amuse Table 1

Freq. Tol.		Operating	Note	
Code	× 10 <sup>-6</sup>	Temperature Range (°C)	Note	
S	± 30			
J	± 25	-10 to +70		
W	± 20			
G	± 50			
Н	± 30			
J	± 25	-40 to +85		
K	± 20		For additional stabil-	
L	± 15		lity, please contact us.	
6	± 50			
5	± 30	-40 to +105		
4	± 20			
Х	± 100			
Z	± 50	-40 to +125		
9	± 30			

Conditions

# How to Order

 $\mathsf{KC} \underline{\square} \underline{\square} \underline{\square} \underline{Z} \quad \underline{25.0000} \ \underline{C} \quad \underline{1} \ \underline{\square} \ \underline{X} \ \underline{00}$ 3 4 5 6 7

#### **①Series**

KC2016Z	2016 Size	KC2520Z	2520 Size
KC3225Z	3225 Size	KC5032Z	5032 Size
KC7050Z	7050 Size		

②Output Frequency (25.0000: 25MHz)

3 Output Type (C: CMOS)

**@Supply Voltage** 

(1: 1.8V/ 2.5V/ 3.3V Compatible) ⑤Frequency Tolerance (See Table 1) ©Symmetry/ INH Function

STD 45/55%

**1** Individual Specification (STD Specification is "00".)

Min.

# Packaging Tape&Reel

1	KC7050Z/ KC5032Z	1000 pcs./ reel
	KC3225Z/ KC2520Z/ KC2016Z	2000 pcs./ reel

Max.

Unit

# **Specifications**

Item

	Output Frequency Range	fo			0.5	170	MHz
	Frequency Tolerance	f_tol	Initial tolerance, Operating temperature range, Rated power supply voltage change, Load change, Aging (1 year @25°C), Shock and vibration		See Table 1.		
	Storage Temperature Range	T_stg	change, Load change, Aging (1 yea	change, 2000 change, rightly (1 year @25 c), shock and vibration		150	°C
	Operating Temperature Range	T_use			-55	See Table 1.	
	Max. Supply Voltage	_			-0.3	4.5	V
	Supply Voltage	Vcc			1.71	3.63	V
			0.5≤fo<5MHz		_	5.2	
			5≤fo<15MHz		_	5.8	
			15≤fo<30MHz		_	6.2	
			30≤fo<50MHz		_	6.8	
	Current Consumption		50≤fo≤60MHz		_	6.8	
	(Noload/ 1.71≤Vcc≤2.25)	Icc	60 <fo<75mhz< td=""><td></td><td>_</td><td>9</td><td></td></fo<75mhz<>		_	9	
	(1401044) 1.71=466=2.23)		75≤fo<105MHz		_	10	
			105≤fo<130MHz		_	10.5	
			130≤fo<160MHz		_	11.5	
			160≤fo≤170MHz		_	12.5	
			0.5≤fo<5MHz		_	5.5	
			5≤fo<15MHz		_	6	
			15≤fo<30MHz		_	6.5	
			30≤fo<50MHz		_	7.2	
	Current Consumption		50≤fo≤60MHz	_	7.4		
	(Noload/ 2.25 < Vcc≤2.8)	Icc	60 <fo<75mhz< td=""><td>_</td><td>10</td><td>mA</td></fo<75mhz<>		_	10	mA
	(10.000, 2.25		75≤fo<105MHz		_	11.5	
			105≤fo<130MHz		_	12.5	
			130≤fo<160MHz		_	14	
			160≤fo≤170MHz		_	15	
1			0.5≤fo<5MHz		_	5.8	
			5≤fo<15MHz		_	6.5	
i			15≤fo<30MHz		_	7.3	
4			30≤fo<50MHz		_	8	
	Current Consumption	Icc	50≤fo≤60MHz		_	8.5	
	(Noload/ 2.8 <vcc≤3.63)< td=""><td>ICC</td><td>60<fo<75mhz< td=""><td></td><td>_</td><td>12.5</td><td></td></fo<75mhz<></td></vcc≤3.63)<>	ICC	60 <fo<75mhz< td=""><td></td><td>_</td><td>12.5</td><td></td></fo<75mhz<>		_	12.5	
			75≤fo<105MHz		_	14.5	
			105≤fo<130MHz		_	15.5	
			130≤fo<160MHz		_	18	
			160≤fo≤170MHz		_	19.5	
	Stand-by Current	l_std			_	5	μΑ
	Symmetry	SYM	@50% Vcc		45	55	%
			0.5.46.460.444	Loaded/ 1.71≤Vcc≤2.25		4	
	D: /F !I T'		0.5≤fo≤60MHz	Loaded/ 2.25 < Vcc < 2.8	_	3	
	Rise/ Fall Time	Tr/ Tf		Loaded/ 2.8 < Vcc ≤ 3.63	_	2.5	ns
	(20% to 80% Output Level)	,	60 f 4470M	Loaded/ 1.71≤Vcc≤2.25		1.5	
			60 <fo≤170mhz< td=""><td>Loaded/ 2.25 &lt; Vcc &lt; 2.8</td><td>_</td><td>1.3</td><td></td></fo≤170mhz<>	Loaded/ 2.25 < Vcc < 2.8	_	1.3	
	1 1 1 Ott \/- t	1/	I a direct	Loaded/ 2.8 < Vcc ≤ 3.63	_	100()/	1/
	Low Level Output Voltage	Vol	Iou = 4mA		000/ 1/5-	10% Vcc	V
-	High Level Output Voltage Output Load (CMOS)	Voh	Iон = −4mA		90% Vcc	<u> </u>	
	Low Level Input Voltage	L_CMOS VIL				30% Vcc	pF V
-	High Level Input Voltage	VIL			70% Vcc	30% VCC	V
	Disable Time	t dis			70% VCC	200	ns
	Enable Time	t_ena				5	ms
	Start-up Time		@Minimum operating volta	ge to be 0 sec		5	
	tart-up Time t_str @Minimum operating voltage to be 0 sec. — 5 ms				1113		



# Clock Oscillators Surface Mount Type Clock Z-Series "Z" type (CMOS, TCXO, Short LT type)





# CMOS/ 1.8V, 2.5V, 3.3V / 2.0×1.6, 2.5×2.0, 3.2×2.5, 5.0×3.2, 7.0×5.0mm



# **Features**

- Frequency Range 0.5 to 170 MHz
- CMOS Output
- Tighter Tolerance
- Short Lead Time
- Heat resistant up to +125°C

# **Applications**

• Consumer/ Networking/ Industrial/ Amuse

# Table 2

Freq. Iol.		Operating	Note	
Code	× 10 <sup>-6</sup>	Temperature Range (°C)	Note	
С	± 5	-40 to +85	For additional stabillity, please	
N	± 15	-40 to +105	contact us.	

# How to Order

<u>KC</u> □□□□ <u>Z</u>	<u>25.0000</u>	<u>C</u>			<u>Z</u>	00
1	2	3	4	(5)	6	7

### **OSeries**

KC2016Z	2016 Size	KC2520Z	2520 Size
KC3225Z	3225 Size	KC5032Z	5032 Size
KC7050Z	7050 Size		

②Output Frequency (25.0000 : 25MHz)

③Output Type (C: CMOS)

**@Supply Voltage** 

o supply tollage						
1	1.8V	2	2.5V			
3	3.3V					

⑤Frequency Tolerance (See Table 2)

©Symmetry/ INH Function STD 45/55%

①Individual Specification (STD Specification is "00".)

Packaging Tape&Reel

KC7050Z/ KC5032Z	1000 pcs./ reel
KC3225Z/ KC2520Z/ KC2016Z	2000 pcs./ reel

# **Specifications**

Item	Symbol	Conditions		Min.	Max.	Unit	
Output Frequency Range	fo			0.5	170	MHz	
Frequency Tolerance	f tol	Initial tolerance, Operating temperature range			See Table 2		
Storage Temperature Range	T_stg			-55	150	°C	
Operating Temperature Range	Tuse			See Table 2			
Max. Supply Voltage	_			-0.3	4.5	V	
Supply Voltage	Vcc	Code: 4 : 1		1.71	1.89	V	
		Code: 4 : 2		2.25	2.75		
		Code: 4 : 3		2.97	3.63		
Current Consumption (Noload/ 1.71≤Vcc≤2.25)	lcc	0.5≤fo<5MHz		_	5.2		
		5≤fo<15MHz		_	5.8		
		15≤fo<30MHz		_	6.2		
		30≤fo<50MHz		_	6.8		
		50≤fo≤60MHz		_	6.8		
		60 <fo<75mhz< td=""><td>_</td><td>9</td></fo<75mhz<>		_	9		
		75≤fo<105MHz		_	10		
		105≤fo<130MHz		_	10.5		
		130≤fo<160MHz		_	11.5		
		160≤fo≤170MHz		_	12.5		
Current Consumption (Noload/ 2.25 < Vcc ≤ 2.8)		0.5≤fo<5MHz		_	5.5		
		5≤fo<15MHz		_	6		
		15≤fo<30MHz		_	6.5		
		30≤fo<50MHz		_	7.2		
		50≤fo≤60MHz		_	7.4		
	Icc	60 <fo<75mhz< td=""><td>_</td><td>10</td><td>mA</td></fo<75mhz<>		_	10	mA	
		75≤fo<105MHz			11.5		
		105≤fo<130MHz			12.5		
		130≤fo<160MHz			14		
		160≤fo≤170MHz			15		
Current Consumption (Noload/ 2.8 < Vcc ≤ 3.63)		0.5≤fo<5MHz			5.8		
		5≤fo<15MHz			6.5		
	lcc	15≤fo<30MHz			7.3		
		30≤fo<50MHz			8		
		50≤fo≤60MHz			8.5		
		60 <fo<75mhz< td=""><td></td><td>12.5</td></fo<75mhz<>			12.5		
		75≤fo<105MHz			14.5		
		105≤fo<130MHz		_	15.5		
		130≤fo<160MHz					
		130≤10<100MHz 160≤fo≤170MHz			18		
		1002102170WHZ		_	19.5		
Stand-by Current	I_std SYM	@E09/ Vcc		45	5 55	μA %	
Symmetry	2 t IVI	@50% Vcc	Loaded/ 1.71/Vss/2.25			70	
Rise/ Fall Time (20% to 80% Output Level)		0 F < f 0 < CON AL I=	Loaded/ 1.71 ≤ Vcc ≤ 2.25	_	3		
	Tr/ Tf	0.5≤fo≤60MHz	Loaded/ 2.25 < Vcc ≤ 2.8 Loaded/ 2.8 < Vcc ≤ 3.63		2.5		
						ns	
		60 <fo≤170mhz< td=""><td>Loaded/ 1.71≤Vcc≤2.25</td><td>_</td><td>1.5</td></fo≤170mhz<>	Loaded/ 1.71≤Vcc≤2.25	_	1.5		
			Loaded/ 2.25 < Vcc ≤ 2.8		1.3		
	.,		Loaded/ 2.8 < Vcc ≤ 3.63		1		
Low Level Output Voltage	Vol	IOL = 4mA		000/ 1/	10% Vcc	V	
High Level Output Voltage	Voh	IUH - THIIA		90% Vcc	<u> </u>		
Output Load (CMOS)	L_CMOS					pF	
Low Level Input Voltage	VIL			700/ 1/	30% Vcc	V	
High Level Input Voltage	VIH			70% Vcc		V	
Disable Time	t_dis			_	200	ns	
Enable Time	t_ena	@Minimum anarating valtage to be 0 see			5	ms	
Start-up Time	t_str	@Minimum operating voltage to be 0 sec.			5	ms	

