Oven Controlled Crystal Oscillator (OCXO)

■ Holder Type: Q1(20.3×12.7)

Frequency Range:
10.0MHz to 100.0MHz

Features:

- Fast warm-up and accurate stability
- Guarantee long term stability (ageing)
- SC (stress-compensated) cut crystal unit
- Low phase noise and low jitter optimised design

■ Standard Specifications

Item	Min	Max
Frequency Range	10.0MHz	100.0MHz
Frequency Stability	±100ppb / ±200ppb / ±300ppb	
Frequency/temp. Characteristics	±3ppb vs 5% change of supply voltage	
Operating Temperature Range	-10°C to +60 °C / -20°C to +70 °C / -40°C to +85 °C	
Storage Temperature Range	-55°C to +85 °C	
Supply Voltage	3.3V / 5.0V	
Warm Up Power Consumption	≤3W for 5 mins	
Steady State Power Consumption	≤3W @ 25 °C (calm air)	
Warm Up Time @25 °C	Within normal parameters after 10 minutes (Typical)	
Output Compatibility & Load	ACMOS / Sine, 0dBm min into 50Ω	
Ageing	±2ppb max per day after 30 days (10MHz typical) @ 25 °C	
Phase Noise @ 10MHz (Typical)	-95dBc/Hz @ 10Hz	
	-125dBc/Hz @ 100Hz	
	-140dBc/Hz @ 1KHz	
	-150dBc/Hz @ 10KHz	
	-155dBc/Hz @ 100KHz	

Note:
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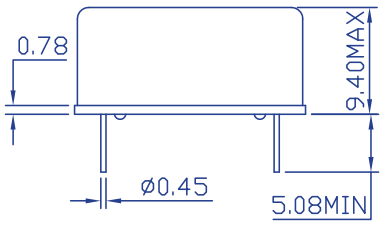
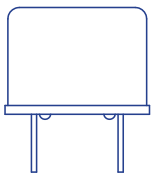
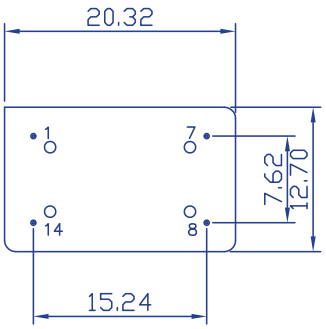
■ Dimensions (mm)



FRONT VIEW



SIDE VIEW



BOTTOM VIEW

Pin	Connection
1	VOLTAGE CONTROL
7	GND
8	Output
14	+VS

MARKING INFORMATION

Oven Controlled Crystal Oscillator (OCXO)

■ Holder Type: Q2(20.2×20.2)

Frequency Range:
4.0MHz to 80.0MHz

Features:

- Fast warm-up and accurate stability
- Guarantee long term stability (ageing)
- SC (stress-compensated) cut crystal unit
- Low phase noise and low jitter optimised design

■ Standard Specifications

Item	Min	Max
Frequency Range	4.0MHz	80.0MHz
Frequency Stability	±50ppb @ 0°C to +60 °C / ±100ppb @ -30°C to +75 °C	
Frequency Tuning Range	±5000ppb to ±15000ppb	
Operating Temperature Range	0°C to +60 °C / -30°C to +75 °C	
Storage Temperature Range	-55°C to +105 °C	
Supply Voltage	3.3V / 5.0V	
Warm Up Power Consumption	800mA max @3.3V / 500mA max @5.0V	
Steady State Power Consumption	300mA max @3.3V / 200mA max @5.0V (25 °C, calm air)	
Warm Up Time @25 °C	Within normal parameters after 10 minutes (Typical)?????	
Output Compatibility & Load	HCMOS, 15pF	
Ageing	±500ppb max first year, ±2000ppb max after 10 years (10MHz typical @ 25 °C)	
Phase Noise @ 10MHz (Typical)	-80dBc/Hz @ 1Hz	
	-110dBc/Hz @ 10Hz	
	-130dBc/Hz @ 100Hz	
	-135dBc/Hz @ 1KHz	
	-148dBc/Hz @ 10KHz	
Developed Frequencies	10.0, 12.0, 12.288, 16.384, 19.2, 20.0, 32.768, 38.4, 38.88MHz	

OCXO

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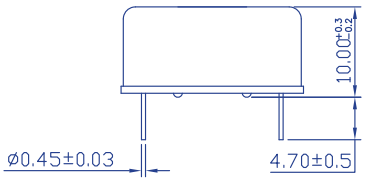
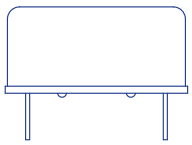
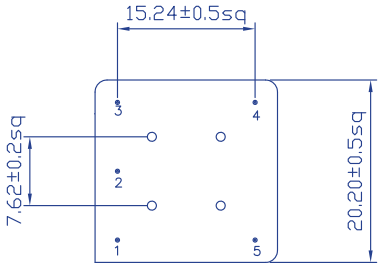
■ Dimensions (mm)



FRONT VIEW



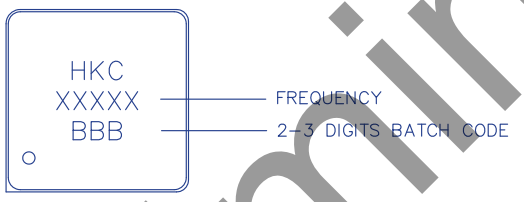
SIDE VIEW



BOTTOM VIEW

Pin	Connection
1	+VS
2	OUTPUT
3	GND
4	VOLTAGE CONTROL OR NC
5	REF.VOLTAGE OUTPUT OR NC

MARKING INFORMATION



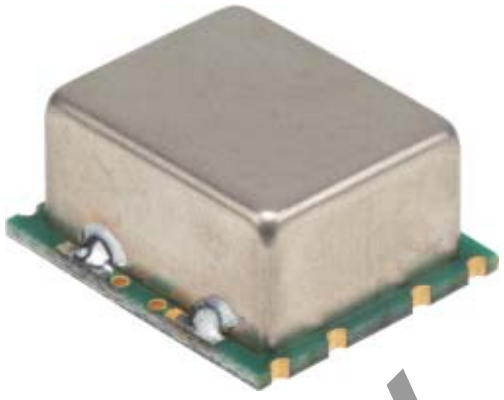
Oven Controlled Crystal Oscillator (OCXO)

■ Holder Type: Q3(25.4×22.0)

Frequency Range:
10.0MHz to 40.0MHz

Features:

- Fast warm-up and accurate stability
- Guarantee long term stability (ageing)
- AT and SC (stress-compensated) cut crystal unit
- Low phase noise and low jitter optimised design
- Small SMD case style
- Optional reference voltage
- Optional oven alarm



■ Standard Specifications

Item	Min	Max
Frequency Range	10.0MHz	40.0MHz
Frequency Stability	±10ppb	
Frequency Tuning Range	±1000ppb to ±2000ppb	
Operating Temperature Range	-40°C to +75 °C	
Storage Temperature Range	-55°C to +105 °C	
Supply Voltage	3.3V / 5.0V / 12.0V	
Warm Up Power Consumption	800mA max @3.3V / 500mA max @5.0V / 350mA max @12.0V	
Steady State Power Consumption	350mA max @3.3V / 200mA max @5.0V / 180mA max @5.0V (25 °C, calm air)	
Warm Up Time @25 °C	Within normal parameters after 10 minutes (Typical)?????	
Output Compatibility & Load	HCMOS or Sinewave	
Ageing	±500ppb max first year, ±2000ppb max after 10 years (10MHz typical @ 25 °C)????	
Phase Noise @ 10MHz (Typical)	-90dBc/Hz @ 1Hz	
	-120dBc/Hz @ 10Hz	
	-140dBc/Hz @ 100Hz	
	-145dBc/Hz @ 1KHz	
	-150dBc/Hz @ 10KHz	
	-150dBc/Hz @ 100KHz	
Developed Frequencies	10.0, 13.0, 16.384, 32.768, 38.4MHz	
Oven Alarm	Shows if device is in warm-up or heated mode eg. Logic '0'=warm-up, Logic '1'=heated and ready	
Ref. Voltage Output	Customer specified value	

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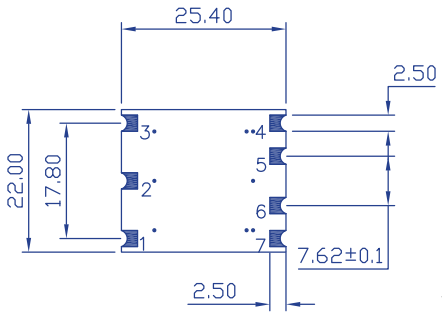
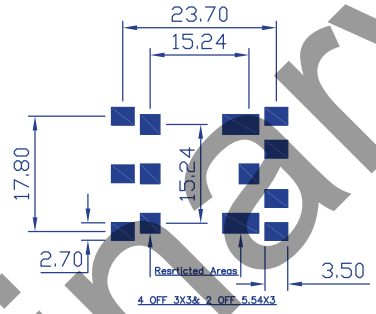
■ Dimensions (mm)

FRONT VIEW

Pin	Connection
1	Voltage Control
2	Ref Output Voltage or N/C
3	+Vs
4	Output
5	Oven Alarm or N/C
6	GND(heater circuit)
7	GND



BOTTOM VIEW



BOTTOM VIEW

MARKING INFORMATION

Oven Controlled Crystal Oscillator (OCXO)

■ Holder Type: Q4(25.6×25.6)

Frequency Range:
4.0MHz to 20.0MHz

Features:

- Fast warm-up and accurate stability
- Guarantee long term stability (ageing)
- SC (stress-compensated) cut crystal unit
- Low phase noise and low jitter optimised design
- Optional reference voltage

■ Standard Specifications

Item	Min	Max
Frequency Range	4.0MHz	20.0MHz
Frequency Stability	±5ppb @-0°C to +70 °C / ±10ppb @-40°C to +70 °C	
Frequency Tuning Range	±500ppb to ±1500ppb	
Operating Temperature Range	0°C to +70 °C / -40°C to +70 °C	
Storage Temperature Range	-55°C to +105 °C	
Supply Voltage	3.3V / 5.0V	
Warm Up Power Consumption	800mA max @3.3V / 500mA max @5.0V	
Steady State Power Consumption	300mA max @3.3V / 200mA max @5.0V (25 °C, calm air)	
Warm Up Time @25 °C	Within normal parameters after 10 minutes (Typical)?????	
Output Compatibility & Load	HCMOS or Sinewave	
Ageing	±50ppb max first year, ±300ppb max after 10 years (10MHz typical @ 25 °C)	
Phase Noise @ 10MHz (Typical)	-90dBc/Hz @ 1Hz	
	-120dBc/Hz @ 10Hz	
	-140dBc/Hz @ 100Hz	
	-145dBc/Hz @ 1KHz	
	-150dBc/Hz @ 10KHz	
	-150dBc/Hz @ 100KHz	
Developed Frequencies	10.0, 13.0, 16.384MHz	
Ref. Voltage Output	Customer specified value	

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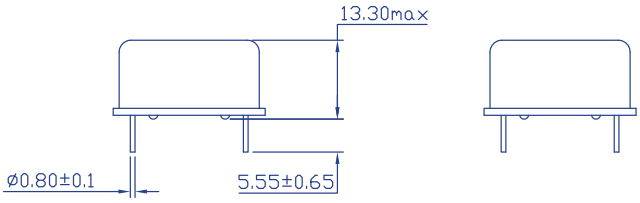
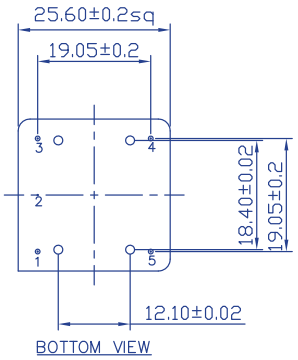
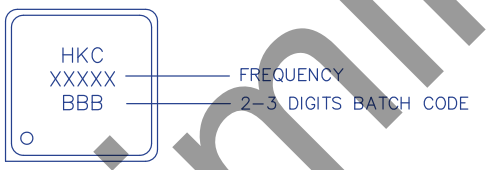
■ Dimensions (mm)





Pin	Connection
1	Output
2	GND
3	Voltage Control
4	Ref.Voltage Output or N/C
5	+VS

MARKING INFORMATION



Oven Controlled Crystal Oscillator (OCXO)

■ Holder Type: Q5(26.162×26.162)

Frequency Range:
10.0MHz to 100.0MHz

Features:

- Fast warm-up and accurate stability
- Guarantee long term stability (ageing)
- SC (stress-compensated) cut crystal unit
- Low phase noise and low jitter optimised design

■ Standard Specifications

Item	Min	Max
Frequency Range	10.0MHz	100.0MHz
Frequency Stability	±5ppb / ±8ppb / ±10ppb / ±20ppb	
Frequency/temp. Characteristics	±1ppb vs 5% change of supply voltage	
Frequency Tuning Range	±500ppb to ±1500ppb	
Operating Temperature Range	0°C to +50 °C / -10°C to +60 °C -20°C to +70 °C / -40°C to +85 °C	
Storage Temperature Range	-55°C to +85 °C	
Supply Voltage	5.0V / 12.0V / 15.0V	
Warm Up Power Consumption	≤5W for 5 mins	
Steady State Power Consumption	≤2W (25 °C, calm air)	
Warm Up Time @25 °C	Within normal parameters after 10 minutes (Typical)	
Output Compatibility & Load	CMOS, 15pF / Sinewave, ±7dBm min into 50Ω	
Ageing	±0.5ppb max per day after 30 days (10MHz typical @ 25 °C)	
Phase Noise @ 10MHz (Typical)	-125dBc/Hz @ 10Hz	
	-145dBc/Hz @ 100Hz	
	-155dBc/Hz @ 1KHz	
	-160dBc/Hz @ 10KHz	
	-160dBc/Hz @ 100KHz	

OCXO

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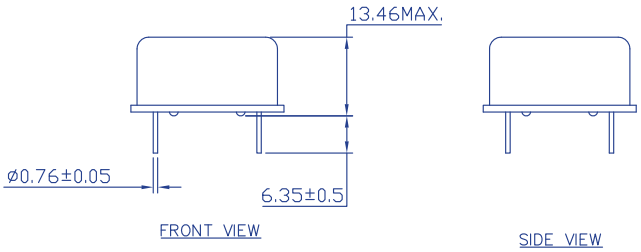
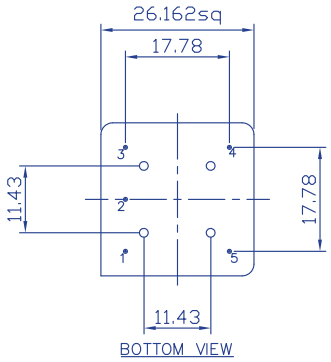
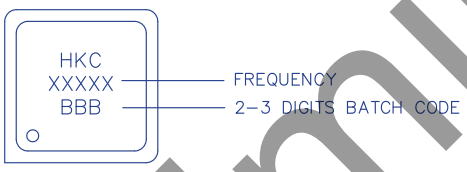
■ Dimensions (mm)





Pin	Connection
1	EFC
2	N/C
3	+VS
4	Output
5	GND & Case

MARKING INFORMATION



Oven Controlled Crystal Oscillator (OCXO)

■ Holder Type: Q6(36×27.0)

Frequency Range:
4.0MHz to 80.0MHz

Features:

- Fast warm-up and accurate stability
- Guarantee long term stability (ageing)
- SC (stress-compensated) cut crystal unit
- Low phase noise and low jitter optimised design
- Optional oven alarm

■ Standard Specifications

Item	Min	Max
Frequency Range	4.0MHz	80.0MHz
Frequency Stability	±10ppb @-20°C to +70 °C / ±20ppb @-40°C to +75 °C	
Frequency Tuning Range	±1000ppb to ±2000ppb	
Operating Temperature Range	-20°C to +70 °C / -40°C to +75 °C	
Storage Temperature Range	-55°C to +105 °C	
Supply Voltage	3.3V / 5.0V / 12.0V	
Warm Up Power Consumption	800mA max @3.3V / 600mA max @5.0V / 400mA max @12.0V	
Steady State Power Consumption	400mA max @3.3V / 300mA max @5.0V / 200mA max @12.0V (25 °C, calm air)	
Warm Up Time @25 °C	Within normal parameters after 10 minutes (Typical)?????	
Output Compatibility & Load	HCMOS or Sinewave	
Ageing	±50ppb max first year, ±300ppb max after 10 years (10MHz typical @ 25 °C) ???	
Phase Noise @ 10MHz (Typical)	-95dBc/Hz @ 1Hz	
	-120dBc/Hz @ 10Hz	
	-140dBc/Hz @ 100Hz	
	-145dBc/Hz @ 1KHz	
	-150dBc/Hz @ 10KHz	
	-150dBc/Hz @ 100KHz	
Developed Frequencies	10.0, 12.8, 13.0, 16.384, 20, 32.768, 38.4, 38.88MHz	
Oven Alarm	Shows if device is in warm-up or heated mode eg. Logic '0'=warm-up, Logic '1'=heated and ready	

OCXO

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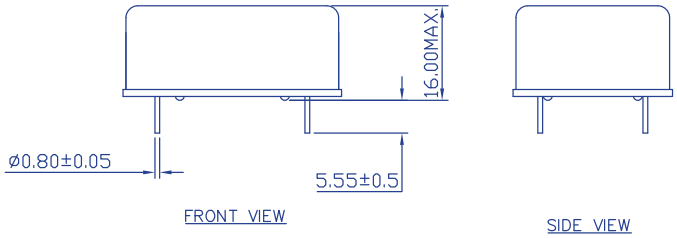
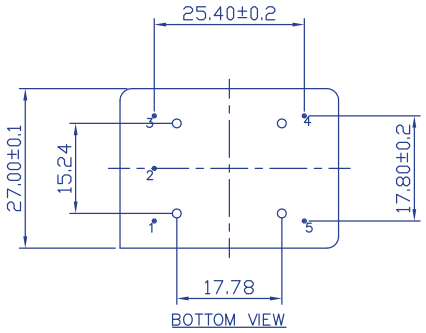
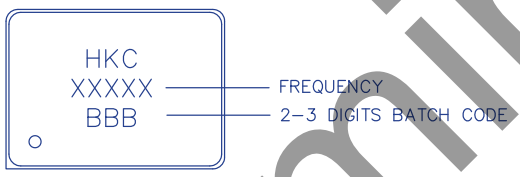
■ Dimensions (mm)





Pin	Connection
1	Voltage Control
2	Vref
3	+VS
4	RF
5	GND

MARKING INFORMATION



Oven Controlled Crystal Oscillator (OCXO)

■ Holder Type: Q7(25.4×22.0)

Frequency Range:
10.0MHz to 40.0MHz

Features:

- Fast warm-up and accurate stability
- Guarantee long term stability (ageing)
- AT and SC (stress-compensated) cut crystal unit
- Low phase noise and low jitter optimised design
- Small SMD case style
- Optional oven alarm
- Optional pulling voltage
- Optional reference voltage

■ Standard Specifications

Item	Min	Max
Frequency Range	10.0MHz	40.0MHz
Frequency Stability	±5ppb	
Frequency Tuning Range	±500ppb to ±2000ppb	
Operating Temperature Range	-20°C to +70 °C	
Storage Temperature Range	-55°C to +105 °C	
Supply Voltage	3.3V / 5.0V / 12.0V	
Warm Up Power Consumption	800mA max @3.3V / 500mA max @5.0V / 300mA max @12.0V	
Steady State Power Consumption	350mA max @3.3V / 200mA max @5.0V / 120mA max @12.0V (25 °C, calm air)	
Warm Up Time @25 °C	Within normal parameters after 10 minutes (Typical)?????	
Output Compatibility & Load	HCMOS (15pF) or Sinewave (50Ω)	
Ageing	±50ppb max after first year, ±300ppb max after 10 years (typical @ 25 °C)	
Phase Noise @ 10MHz, 12V Supply and Sine (Typical)	-98dBc/Hz @ 1Hz	
	-128dBc/Hz @ 10Hz	
	-142dBc/Hz @ 100Hz	
	-152dBc/Hz @ 1KHz	
	-157dBc/Hz @ 10KHz	
	-157dBc/Hz @ 100KHz	
Developed Frequencies	10.0MHz	
Oven Alarm	Shows if device is in warm-up or heated mode eg. Logic '0'=warm-up, Logic '1'=heated and ready	
Ref. Voltage Output (optional)	5V±1.5%	

Note:
1. Manufacturer reserves the right to change the specification and content of this product for improvement without notification.
2. Custom specification is welcome. Please contact our sales representative for further details.
3. If the crystal is intended for applications which have direct impact on human life and properties, and require a high degree of reliability and safety concerns, customers must provide full information such as but not limit to the application, electrical and reliability specification at the inquiry beginning stage.
4. Customers have to agree to the "Guideline for handling crystal units" and "Standard Terms and Condition of Sales" which is printed this catalog before placing orders to our company or our distributors. There are also unpredictable factors such as applied condition, oscillation margin and etc and customers must check them beforehand. In case of queries, please do not fail to send inquiry to our company before ordering.

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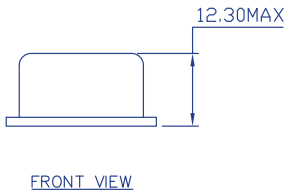
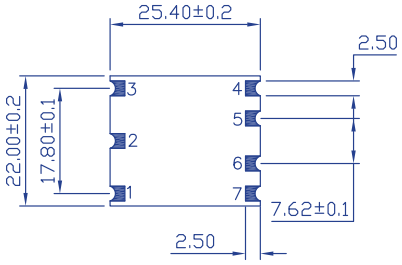
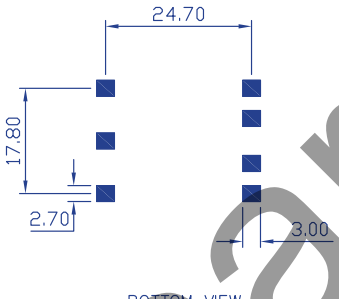
■ Dimensions (mm)



Pin	Connection
1	Voltage Control
2	Ref Output Voltage or N/C
3	+Vs
4	Output
5	Oven Alarm or N/C
6	N/C
7	GND





MARKING INFORMATION